UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June 30, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission File Number: 001-38853

NGM BIOPHARMACEUTICALS, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**26-1679911**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
333 Oyster Point Boulevard South San Francisco, CA	**94080**
(Address of principal executive offices)	**(Zip Code)**

(650) 243-5555

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class of Securities Registered	Trading Symbol	Name of Each Exchange on which Securities are Registered
Common Stock, par value $0.001 per share	NGM	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	☐	Accelerated filer	☒
Non-accelerated filer	☐	Smaller reporting company	☐
Emerging growth company	☒		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of August 2, 2021, the registrant had 77,338,144 shares of common stock, $0.001 par value per share, outstanding.

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PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

NGM BIOPHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share amounts)
(Unaudited)

	June 30, 2021	December 31, 2020*
Assets		
Current assets:		
Cash and cash equivalents	$ 99,403	$ 147,017
Short-term marketable securities	291,147	148,139
Related party receivable from collaboration	3,586	333
Related party contract asset	—	6,100
Prepaid expenses and other current assets	8,993	6,837
Total current assets	403,129	308,426
Property and equipment, net	12,790	14,526
Restricted cash	1,499	1,499
Other non-current assets	5,593	4,592
Total assets	$ 423,011	$ 329,043
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 5,141	$ 9,663
Accrued liabilities	31,891	29,945
Deferred rent, current	3,048	2,975
Contract liabilities	4,963	—
Total current liabilities	45,043	42,583
Deferred rent, non-current	4,893	6,417
Total liabilities	49,936	49,000
Commitments and contingencies (Note 6)		
Stockholders' equity:		
Preferred stock, $0.001 par value; 10,000,000 shares authorized; no shares issued or outstanding as of June 30, 2021 and December 31, 2020, respectively	—	—
Common stock, $0.001 par value; 400,000,000 shares authorized; 77,307,156 and 70,585,364 shares issued and outstanding as of June 30, 2021 and December 31, 2020, respectively	77	71
Additional paid-in capital	735,860	578,599
Accumulated other comprehensive income	5	4
Accumulated deficit	(362,867)	(298,631)
Total stockholders' equity	373,075	280,043
Total liabilities and stockholders' equity	$ 423,011	$ 329,043

See accompanying notes to unaudited condensed consolidated financial statements.

*The condensed consolidated balance sheet as of December 31, 2020 has been derived from the audited financial statements as of that date.

NGM BIOPHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except share and per share amounts)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Related party revenue	$ 16,773	$ 19,755	$ 38,348	$ 44,119
Operating expenses:				
Research and development	43,570	38,494	84,269	76,933
General and administrative	9,823	6,794	18,544	13,389
Total operating expenses	53,393	45,288	102,813	90,322
Loss from operations	(36,620)	(25,533)	(64,465)	(46,203)
Interest income, net	115	388	229	1,563
Other expense, net	(187)	(471)	—	(91)
Net loss	$ (36,692)	$ (25,616)	$ (64,236)	$ (44,731)
Net loss per share, basic and diluted	$ (0.48)	$ (0.38)	$ (0.84)	$ (0.66)
Weighted average shares used to compute net loss per share, basic and diluted	77,096,416	68,305,056	76,568,217	67,850,640

See accompanying notes to unaudited condensed consolidated financial statements.

NGM BIOPHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(In thousands)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Net loss	$ (36,692)	$ (25,616)	$ (64,236)	$ (44,731)
Other comprehensive income, net of tax:				
Net unrealized gain on available-for-sale marketable securities	23	192	1	112
Total comprehensive loss	$ (36,669)	$ (25,424)	$ (64,235)	$ (44,619)

See accompanying notes to unaudited condensed consolidated financial statements.

NGM BIOPHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)
(Unaudited)

	Common Stock		Additional Paid-In Capital	Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2020	70,583	$ 71	$ 578,599	$ 4	$ (298,631)	$ 280,043
Issuance of common stock under offering, net of issuance costs	5,324	5	134,565			134,570
Issuance of common stock upon exercise of stock options	1,001	1	5,906	—	—	5,907
Vesting of common stock from early exercises	5	—	41	—	—	41
Stock-based compensation expense	—	—	6,582	—	—	6,582
Comprehensive loss	—	—	—	(22)	—	(22)
Net loss	—	—	—	—	(27,544)	(27,544)
Balance at March 31, 2021	76,913	$ 77	$ 725,693	$ (18)	$ (326,175)	$ 399,577
Issuance of common stock upon exercise of stock options	280	—	1,905	—	—	1,905
Issuance of common stock under employee stock purchase plan	110	—	1,409	—	—	1,409
Issuance of common stock to participants in 401(k) plan	4	—	125	—	—	125
Vesting of common stock from early exercises	—	—	2	—	—	2
Stock-based compensation expense	—	—	6,716	—	—	6,716
Issuance costs under offering	—	—	10			10
Comprehensive income	—	—	—	23	—	23
Net loss	—	—	—	—	(36,692)	(36,692)
Balance at June 30, 2021	77,307	$ 77	$ 735,860	$ 5	$ (362,867)	$ 373,075

See accompanying notes to unaudited condensed consolidated financial statements.

NGM BIOPHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY—(Continued)
(In thousands)
(Unaudited)

	Common Stock		Additional Paid-In Capital	Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2019	66,886	$ 67	$ 526,771	$ 25	$ (196,144)	$ 330,719
Issuance of common stock upon exercise of stock options	984	1	3,590	—	—	3,591
Vesting of common stock from early exercises	21	—	162	—	—	162
Stock-based compensation expense	—	—	3,695	—	—	3,695
Comprehensive loss	—	—	—	(80)	—	(80)
Net loss	—	—	—	—	(19,115)	(19,115)
Balance at March 31, 2020	67,891	$ 68	$ 534,218	$ (55)	$ (215,259)	$ 318,972
Issuance of common stock upon exercise of stock options	680	1	2,365	—	—	2,366
Issuance of common stock under employee stock purchase plan	109	—	1,285	—	—	1,285
Issuance of common stock to participants in 401(k) plan	6	—	119	—	—	119
Vesting of common stock from early exercises	16	—	123	—	—	123
Stock-based compensation expense	—	—	3,723	—	—	3,723
Comprehensive income	—	—	—	192	—	192
Net loss	—	—	—	—	(25,616)	(25,616)
Balance at June 30, 2020	68,702	$ 69	$ 541,833	$ 137	$ (240,875)	$ 301,164

See accompanying notes to unaudited condensed consolidated financial statements.

NGM BIOPHARMACEUTICALS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Six Months Ended June 30,	
	2021	**2020**
Cash flows from operating activities		
Net loss	$ (64,236)	$ (44,731)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	13,298	7,418
Reduction in related party contract asset due to Amended Collaboration Agreement with Merck	4,600	—
Depreciation	3,118	3,381
Amortization of premium (discount) on marketable securities	1,518	(190)
Other non-cash expenses	49	239
Changes in operating assets and liabilities:		
Related party receivable from collaboration	(3,253)	2,127
Related party contract asset	1,500	—
Prepaid expenses and other assets	(3,157)	(3,119)
Accounts payable	(4,522)	(6,874)
Accrued liabilities	2,038	7,634
Deferred rent	(1,451)	(1,378)
Contract liabilities	4,963	(2,798)
Net cash used in operating activities	(45,535)	(38,291)
Cash flows from investing activities		
Purchase of marketable securities	(194,525)	(29,399)
Proceeds from maturities of marketable securities	50,000	65,836
Net purchase of property and equipment	(1,355)	(1,445)
Net cash (used in) provided by investing activities	(145,880)	34,992
Cash flows from financing activities		
Proceeds from follow on offering, net	134,580	—
Proceeds from exercise of stock options	7,812	5,957
Proceeds from employee stock purchase plan	1,409	1,285
Deferred offering costs paid	—	(224)
Net cash provided by financing activities	143,801	7,018
Net (decrease) increase in cash and cash equivalents	(47,614)	3,719
Cash, cash equivalents and restricted cash, at beginning of period	148,516	247,472
Cash, cash equivalents and restricted cash, at end of period	$ 100,902	$ 251,191
Non-cash investing and financing activities:		
Vesting of common stock from early exercises	$ 43	$ 285
Property and equipment purchases accrued and not yet paid	$ 77	$ 87
Deferred offering costs accrued but not yet paid	$ —	$ 235

See accompanying notes to unaudited condensed consolidated financial statements.

1. Organization and Description of Business

NGM Biopharmaceuticals, Inc. and its wholly-owned subsidiary, collectively referred to as the Company, is focused on discovering and developing novel therapeutics based on scientific understanding of key biological pathways underlying retinal diseases, cancer, and liver and metabolic diseases. The Company's robust portfolio of product candidates range from early discovery to late-stage development and include NGM621, NGM120, NGM707, NGM438, MK-3655 and aldafermin. The Company has additional undisclosed programs that are in various stages of development ranging from functional validation to preclinical development.

The Company was incorporated in Delaware in December 2007 and commenced operations in 2008. Its headquarters are located at 333 Oyster Point Blvd., South San Francisco, California 94080.

2. Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP, and Regulation S-X for interim consolidated financial information. These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes for the year ended December 31, 2020 included in the Company's Annual Report on Form 10-K for the year ended December 31, 2020 filed with the United States Securities and Exchange Commission, or SEC, on March 15, 2021. These unaudited condensed consolidated financial statements reflect all adjustments that management believes are necessary for a fair presentation of the periods presented. All such adjustments are of a normal recurring nature and are not necessarily indicative of results expected for the full fiscal year or for any subsequent interim period.

These unaudited condensed consolidated financial statements include the consolidated accounts of NGM Biopharmaceuticals, Inc. and its wholly-owned foreign subsidiary in Australia. All intercompany balances and transactions have been eliminated upon consolidation.

Use of Estimates

The preparation of condensed consolidated financial statements in conformity with U.S. GAAP requires management to make judgments, assumptions and estimates that affect the reported amounts of assets, liabilities, revenues and expenses. Specific accounts that require management estimates include, but are not limited to, the valuation of common stock and the associated stock-based compensation expense, contract manufacturing accruals, clinical trial accruals and revenue recognition in accordance with Accounting Standards Codification 606 or, ASC 606. Management bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results could differ materially from those estimates.

Uses and Sources of Liquidity

Since inception, the Company has incurred net losses and negative cash flow from operations. Net losses were $36.7 million and $64.2 million during the three and six months ended June 30, 2021, respectively, and $25.6 million and $44.7 million for the three and six months ended June 30, 2020, respectively. As of June 30, 2021, the Company had an accumulated deficit of $362.9 million. The Company expects its accumulated deficit will increase significantly over time and does not expect to experience positive cash flows from operations in the near future.

As of June 30, 2021, the Company had $390.6 million of cash, cash equivalents and short-term marketable securities. In January 2021, the Company sold 5,324,074 shares of its common stock through an underwritten public offering at a price to the public of $27.00 per share for aggregate net proceeds to the Company of $134.6 million after deducting underwriting discounts and commissions and other offering expenses paid by the Company. In June 2020, the Company entered into an Open Market Sale Agreement℠, or the Sales Agreement, with Jefferies LLC. During the six months ended June 30, 2021, no shares of the Company's common stock were sold pursuant to

the Sales Agreement. As of June 30, 2021, $127.4 million of the Company's common stock remained available to be sold under the Sales Agreement, subject to conditions specified in the Sales Agreement.

The Company believes its existing cash, cash equivalents and short-term marketable securities will be sufficient to fund its operations for a period of at least one year from the date of these unaudited condensed consolidated financial statements.

To fully implement the Company's business plan and fund its operations, the Company will need to raise additional capital through public or private equity offerings (which may include potential net proceeds from future sales, if any, under the Sales Agreement), debt financings, government or other third-party funding, collaborations, strategic alliances and licensing arrangements or a combination of the foregoing.

Fair Value of Financial Instruments

The carrying amounts of cash and cash equivalents, the related party receivable from collaboration and other current assets and liabilities approximate their respective fair values due to their short-term nature.

Cash and Cash Equivalents

Cash and cash equivalents are stated at fair value. Cash equivalents are securities with an original maturity of three months or less at the time of purchase. The Company limits its credit risk associated with cash and cash equivalents by placing its investments with a bank it believes is highly creditworthy and with highly rated money market funds. As of June 30, 2021 and December 31, 2020, cash and cash equivalents consisted of bank deposits and investments in money market funds.

Marketable Securities

The appropriate classification of the Company's marketable securities is determined at the time of purchase and such designations are re-evaluated at each balance sheet date. All of the Company's securities are considered as available-for-sale and carried at estimated fair values and reported in cash equivalents and short-term marketable securities. Unrealized gains and losses on available-for-sale securities are excluded from net loss and reported in accumulated other comprehensive income, net of tax as a separate component of stockholders' equity. Other income (expense), net, includes interest, amortization of purchase premiums and accretion of purchase discounts, realized gains and losses on sales of securities and other-than-temporary declines in the fair value of securities, if any. The cost of securities sold is based on the specific identification method.

The Company's investments are regularly reviewed for other-than-temporary declines in fair value. This review includes the consideration of the cause of the impairment, including the creditworthiness of the security issuers, the number of securities in an unrealized loss position, the severity and duration of the unrealized losses, whether the Company has the intent to sell the securities and whether it is more likely than not that the Company will be required to sell the securities before the recovery of their amortized cost basis. When the Company determines that the decline in fair value of an investment is below its carrying value and this decline is other-than-temporary, the Company reduces the carrying value of the security it holds and records a loss for the amount of such decline. As of June 30, 2021, the Company did not record any impairment related to other-than-temporary declines in the fair value of securities.

Restricted Cash

The Company's restricted cash balance represents collateral required under the Company's facility lease agreement and is classified as a non-current asset on the condensed consolidated balance sheets, as the collateral will not be returned to the Company within 12 months from the date of these condensed consolidated financial statements.

Concentration of Credit and Other Risks

Cash, cash equivalents and marketable securities from the Company's available-for-sale and marketable security portfolio potentially subject the Company to concentrations of credit risk. The Company is invested in money market funds and marketable securities through custodial relationships with major U.S. and Australian banks. Under its investment policy, the Company limits amounts invested in such securities by credit rating, maturity, industry group, investment type and issuer, except for securities issued by the U.S. government.

Related party receivables from collaborations are typically unsecured. Accordingly, the Company may be exposed to credit risk generally associated with its current collaboration agreement with Merck Sharp & Dohme Corp., or Merck, and any future collaboration agreements with other collaboration partners. To date, the Company has not experienced any losses related to these receivables.

Amounts recognized as revenue prior to the Company having an unconditional right (other than a right that is conditioned only on the passage of time) to receipt are recorded as contract assets in the Company's condensed consolidated balance sheets. Although the Company expects to have an unconditional right to receive such amounts, the Company may be exposed to the risk of not receiving the recorded amounts under its current collaboration agreement with Merck and any future collaboration agreements with other collaboration partners. To date, the Company has not experienced any losses related to contract assets.

Merck accounted for 100% of the Company’s revenue for the three and six months ended June 30, 2021 and 2020.

Property and Equipment, Net

Property and equipment is recorded at cost and consists of computer equipment, laboratory equipment and office furniture and leasehold improvements. Maintenance and repairs, and training on the use of equipment, are expensed as incurred. Costs that improve assets or extend their economic lives are capitalized. Depreciation is recognized using the straight-line method based on an estimated useful life of the asset, which is as follows:

Computer equipment	3 years
Laboratory equipment and office furniture	3 years
Leasehold improvement	Shorter of life of asset or lease term

Leases

The Company’s lease agreements for its laboratory and office facilities are classified as operating leases. Rent expense is recognized on a straight-line basis over the term of the lease. Incentives granted under the Company’s facilities leases, including allowances to fund leasehold improvements and rent holidays, are capitalized and are recognized as reductions to rental expense on a straight-line basis over the term of the lease.

Impairment of Long-Lived Assets

Long-lived assets, such as property and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated undiscounted future cash flows, an impairment charge is recognized as the amount by which the carrying amount of the asset exceeds the estimated fair value of the asset. As of June 30, 2021 and December 31, 2020, no revision to the remaining useful lives or write-down of long-lived assets was required.

Income Taxes

Income taxes are accounted for under the liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to the differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and the operating loss and tax credit carryforwards. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized. Deferred tax assets and liabilities are measured at the balance sheet date using the enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the period such tax rate changes are enacted.

Revenue Recognition

Accounting Standards Update, or ASU, 2014-09, Revenue from Contracts with Customers (Topic 606) requires an entity to recognize revenue upon the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The Company applies the following five-step revenue recognition model outlined in ASC 606 to adhere to this core

principle: (1) identify the contract(s) with a customer; (2) identify the performance obligations in the contract; (3) determine the transaction price; (4) allocate the transaction price to the performance obligations in the contract; and (5) recognize revenue when (or as) the Company satisfies a performance obligation.

All of the Company's revenue to date has been generated from its collaboration agreements, primarily its collaboration agreement with Merck. The terms of these agreements generally require the Company to provide (i) license options for its compounds, (ii) research and development services and (iii) non-mandatory services in connection with participation in research or steering committees. Payments received under these arrangements may include non-refundable upfront license fees, partial or complete reimbursement of research and development costs, contingent consideration payments based on the achievement of defined collaboration objectives and royalties on sales of commercialized products. In some agreements, the collaboration partner is solely responsible for meeting defined objectives that trigger contingent or royalty payments. Often the partner only pursues such objectives subsequent to exercising an optional license on compounds identified as a result of the research and development services performed under the collaboration agreement.

The Company assesses whether the promises in its arrangements, including any options provided to the partner, are considered distinct performance obligations that should be accounted for separately. Judgment is required to determine whether the license to a compound is distinct from research and development services or participation in research or steering committees, as well as whether options create material rights in the contract. In situations when a contract includes distinct services that are substantially the same and have the same pattern of transfer to the customer over time, they are recognized as a series of distinct services.

The transaction price in each arrangement is generally comprised of a non-refundable upfront fee and unconstrained variable consideration related to the performance of research and development services. The Company typically submits a budget for the research and development services to the partner in advance of performing the services. The transaction price is allocated to the identified performance obligations based on the standalone selling price, or SSP, of each distinct performance obligation. Judgment is required to determine the SSP. In instances where the SSP is not directly observable, such as when a license or service is not sold separately, SSP is determined using information that may include market conditions and other observable inputs. The Company utilizes judgment to assess the nature of its performance obligations to determine whether they are satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress toward completion. The Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition.

The Company's collaboration agreements may include contingent payments related to specified development and regulatory milestones or contingent payments for royalties based on sales of a commercialized product. Milestones can be achieved for such activities in connection with progress in clinical trials, regulatory filings in various geographical markets and marketing approvals from health authorities. Sales-based royalties are generally related to the volume of annual sales of a commercialized product. At the inception of each agreement that includes such payments, the Company evaluates whether the milestones are considered probable of being achieved and estimates the amount to be included in the transaction price by using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the Company's or its partner's control, such as those related to regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation based on a relative SSP basis. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of each such milestone and any related constraint and, if necessary, adjusts its estimate of the overall transaction price. Pursuant to the guidance in ASC 606, sales-based royalties are not included in the transaction price. Instead, royalties are recognized at the later of when the performance obligation is satisfied or partially satisfied, or when the sale that gives rise to the royalty occurs.

Contract modifications, defined as changes in the scope or price (or both) of a contract that are approved by the parties to the contract, such as a contract amendment, exist when the parties to a contract approve a modification that either creates new, or changes existing, enforceable rights and obligations of the parties to the contract. Depending on facts and circumstances, the Company accounts for a contract modification as one of the following: (i) a separate contract; (ii) a termination of the existing contract and a creation of a new contract; or (iii) a combination of the preceding treatments. A contract modification is accounted for as a separate contract if the scope of the contract increases because of the addition of promised services that are distinct and if the price of the contract increases by an amount of consideration that reflects the Company's standalone selling prices of the additional promised services. When a contract modification is not considered a separate contract and the remaining services are distinct from the services transferred on or before the date of the contract modification, the Company

accounts for the contract modification as a termination of the existing contract and a creation of a new contract. When a contract modification is not considered a separate contract and the remaining services are not distinct, the Company accounts for the contract modification as an add-on to the existing contract and as an adjustment to revenue on a cumulative catch-up basis.

Research and Development

Research and development costs are expensed as incurred. Research and development expenses primarily include salaries and benefits for medical, clinical, quality, preclinical, manufacturing and research personnel, costs related to research activities, preclinical studies, clinical trials, drug manufacturing expenses and allocated overhead and facility occupancy costs. The Company accounts for non-refundable advance payments for goods or services that will be used in future research and development activities as expenses when the goods have been received or when the service has been performed rather than when the payment is made.

Clinical trial costs are a component of research and development expenses. The Company expenses costs for its clinical trial activities performed by third parties, including clinical research organizations, or CROs, and other service providers, as they are incurred, based upon estimates of the work completed over the life of the individual study in accordance with associated agreements. The Company uses assessments by its internal personnel and information it receives from outside service providers to estimate the clinical trial costs incurred.

Stock-Based Compensation

The Company's stock-based compensation programs include stock option grants, as well as shares issued under its 2019 Employee Stock Purchase Plan, or ESPP. Grants are awarded to employees, directors and nonemployees. The Company measures employee and director stock-based compensation expense for all stock-based awards at the grant date based on the fair value measurement of the award. Subsequent to the adoption of ASU No. 2018-07, Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting on January 1, 2019, stock-based compensation expense for non-employee awards is measured based on the fair value on the date of adoption. The expense is recorded on a straight-line basis over the requisite service period, which is generally the vesting period, for the entire award. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures materially differ from estimates. The Company calculates the fair value measurement of stock options using the Black-Scholes option-pricing model.

Foreign Currency Transactions

The functional currency of NGM Biopharmaceuticals Australia Pty Ltd., the Company's wholly-owned subsidiary, is the U.S. dollar. Accordingly, all monetary assets and liabilities of the subsidiary are remeasured into U.S. dollars at the current period-end exchange rates and non-monetary assets are remeasured using historical exchange rates. Income and expense elements are remeasured to U.S. dollars using the average exchange rates in effect during the period. Remeasurement gains and losses are recorded as other income (expense), net on the condensed consolidated statements of operations.

The Company is subject to foreign currency risk with respect to its clinical and manufacturing contracts denominated in currencies other than the U.S. dollar, primarily British Pounds, Swiss Francs, Australian dollars and the Euro. Payments on contracts denominated in foreign currencies are made at the spot rate on the day of payment. Changes in the exchange rate between billing dates and payment dates are recorded within other income (expense), net, on the condensed consolidated statements of operations.

Comprehensive Loss

Comprehensive loss is composed of net loss and certain changes in stockholders' equity that are excluded from net loss, primarily unrealized gains or losses, net of taxes, on the Company's marketable securities.

Net Loss per Share

Basic net loss per share is calculated by dividing net loss by the weighted average number of shares outstanding during the period, less shares subject to repurchase and excludes any dilutive effects of stock-based options and awards. Diluted net income per ordinary share is computed by giving effect to all potentially dilutive shares, including common stock issuable upon exercise of stock options. However, where there is a diluted net loss per ordinary share, no adjustment is made for potentially issuable shares since their effect would be anti-dilutive. In this case, diluted net loss per share is equal to basic net loss per share.

Net loss per share was computed as follows (in thousands, except share and per share amounts):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Numerator:				
Net loss	$ (36,692)	$ (25,616)	$ (64,236)	$ (44,731)
Denominator:				
Weighted average number of shares used in calculating net loss per share—basic and diluted	77,096,416	68,305,056	76,568,217	67,850,640
Net loss per share—basic and diluted	$ (0.48)	$ (0.38)	$ (0.84)	$ (0.66)

Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	Three and Six Months Ended June 30,	
	2021	2020
Options to purchase common stock	11,124,234	10,478,682
Shares committed under ESPP	214,604	467,614
Total	11,338,838	10,946,296

Segment and Geographical Information

The Company operates in one business segment. Substantially all of the Company's long-lived assets, comprised of property and equipment, are based in the United States. For the three and six months ended June 30, 2021 and 2020, the Company's revenues were entirely within the United States based upon the location of the Company and Merck.

Recent Accounting Pronouncements

New accounting pronouncements are issued by the Financial Accounting Standards Board, or FASB, or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed, the impact of recently issued standards that are not yet effective will not have a material impact on the Company's results of operations and financial position upon adoption. Under the Jumpstart Our Business Startups Act of 2012, as amended, the JOBS Act, the Company currently meets the definition of an emerging growth company and has elected the extended transition period for complying with new or revised accounting standards pursuant to Section 107(b) of the JOBS Act. The Company expects to be a large accelerated filer as of December 31, 2021 and as a result, the Company will no longer be an emerging growth company as of that date.

Recently Adopted Accounting Pronouncements

In November 2018, the FASB issued ASU 2018-18, Collaborative Arrangements (ASC 808): Clarifying the Interaction between ASC 808 and ASC 606, which clarifies that certain transactions between collaborative arrangement participants should be accounted for as revenue under ASC 606 when the collaborative arrangement participant is a customer. In addition, ASC 808 precludes an entity from presenting consideration from a transaction in a collaborative arrangement as revenue from contracts with customers if the participant is not a customer for that transaction. The Company adopted ASU 2018-18 effective January 1, 2021, noting no material impact on the Company's results of operations and financial position.

In December 2019, the FASB issued ASU 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes. The new guidance modifies ASC 740 to simplify several aspects of accounting for income taxes, including eliminating certain exceptions to the guidance in ASC 740 related to the approach for intraperiod tax allocation. The Company adopted ASU 2019-12 effective January 1, 2021, noting no material impact on the Company's results of operations and financial position.

Recent Accounting Pronouncements Not Yet Adopted

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842), which increases lease transparency and comparability among organizations. Under the new standard, lessees will be required to recognize right-of-use, or ROU, assets and lease liabilities arising from lease arrangements on the balance sheet, with the exception of leases with a term of twelve months or less, which permits a lessee to make an accounting policy election by class of underlying asset not to recognize the ROU assets and lease liabilities. In March 2018, the FASB approved an alternative transition method to the modified retrospective approach, which eliminates the requirement to restate prior period financial statements and allows the cumulative effect of the retrospective allocation to be recorded as an adjustment to the opening balance of retained earnings at the date of adoption. In November 2019, the FASB issued ASU 2019-10, which deferred the effective date for certain ASUs including ASU 2016-02. In June 2020, due to the evolving impacts of the COVID-19 pandemic, the FASB issued ASU 2020-05, which further defers the effective date of ASU 2016-02, which is now effective for the Company's fiscal year beginning after December 15, 2021, and interim periods within fiscal years beginning after December 15, 2022.

Given the Company expects that it will no longer be an emerging growth company as of December 31, 2021, the Company plans to adopt the new lease standard in the fiscal year beginning January 1,2021, using the optional transition method, which allows the Company to recognize a cumulative-effect adjustment to the opening balance of accumulated deficit at the date of adoption and apply the new disclosure requirements beginning in the period of adoption. The Company also plans to elect the package of practical expedients permitted under the transition guidance within the new standard, which, among other things, allows the Company to carryforward the historical lease classification and make an accounting policy election whereby ROU assets and lease liabilities associated with lease arrangements with terms less than one year will not be recognized. The Company continues to evaluate the impact of this new lease standard to its results of operations and financial position.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. The standard amends guidance on reporting credit losses for financial assets held at amortized cost basis, including accounts receivable, investments classified as available for sale, such as our debt securities, and unbilled related party revenue. Estimated credit losses will be recorded as an allowance rather than a write-down. In November 2019, the FASB issued ASU 2019-10, which deferred the effective date for certain ASUs including ASU 2016-13. Given the Company expects that it will no longer be an emerging growth company as of December 31, 2021, it plans to adopt Topic 326 in the fiscal year beginning January 1, 2021 and the impact of adoption is not expected to materially impact the Company's results of operations and financial position.

3. Fair Value Measurements

Cash equivalents and marketable securities are classified as available-for-sale securities and consisted of the following (in thousands):

	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
As of June 30, 2021				
U.S. government agencies securities	$ 141,128	$ 13	$ —	$ 141,141
Money market funds	86,581	—	—	86,581
Corporate and agency bonds	76,065	4	(12)	76,057
Commercial paper	73,949	—	—	73,949
Totals	$ 377,723	$ 17	$ (12)	$ 377,728
Classified as:				
Cash and cash equivalents				$ 86,581
Short-term marketable securities (amortized cost of $291,142)				291,147
Total				$ 377,728

	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
As of December 31, 2020				
Money market funds	$ 137,658	$ —	$ —	$ 137,658
U.S. government agencies securities	98,647	9	(3)	98,653
Commercial paper	41,945	—	—	41,945
Corporate and agency bonds	7,543	—	(2)	$ 7,541
Totals	$ 285,793	$ 9	$ (5)	$ 285,797
Classified as:				
Cash and cash equivalents				$ 137,658
Short-term marketable securities (amortized cost of $148,135)				148,139
Total				$ 285,797

Cash and cash equivalents in the table above excludes cash on deposit with banks of $12.8 million and $9.4 million as of June 30, 2021 and December 31, 2020, respectively.

To date, the Company has not recorded any impairment charges against the market value of its marketable securities. In determining whether a decline is other than temporary, the Company considers various factors including the length of time and extent to which the market value has been less than cost, the financial condition and near-term prospects of the issuer and the Company's intent and ability to retain its investment in the issuer for a period of time sufficient to allow for any anticipated recovery in market value.

As of June 30, 2021 and December 31, 2020, all of the Company's marketable securities had remaining contractual maturities of less than one year. As of June 30, 2021, there were eleven marketable securities in an unrealized loss position compared to one marketable security in an unrealized loss position as of December 31, 2020. Marketable securities that had been in unrealized loss positions as of June 30, 2021 and December 31, 2020 had been in an unrealized loss position for less than 12 months. The Company does not intend to sell marketable securities that are in an unrealized loss position and it is highly unlikely that the Company will be required to sell the investments before recovery of their amortized cost basis, which may be maturity.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following table summarizes, by major security type, our available-for-sale securities that were measured at fair value on a recurring basis and were categorized using the fair value hierarchy (in thousands):

	Fair Value Measurements			
As of June 30, 2021	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:				
U.S. government agencies securities	$ —	$ 141,141	$ —	$ 141,141
Money market funds	86,581	—	—	86,581
Corporate and agency bonds	—	76,057	—	76,057
Commercial paper	—	73,949	—	73,949
Totals	$ 86,581	$ 291,147	$ —	$ 377,728

	Fair Value Measurements			
As of December 31, 2020	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:				
Money market funds	$ 137,658	$ —	$ —	$ 137,658
U.S. government agencies securities	—	98,653	—	98,653
Commercial paper	—	41,945	—	41,945
Corporate and agency bonds	—	7,541	—	7,541
Totals	$ 137,658	$ 148,139	$ —	$ 285,797

The carrying amounts of cash and cash equivalents, the related party receivable and contract asset from collaboration and other current assets and liabilities approximate their respective fair values due to their short-term nature.

The Company estimates the fair values of investments in corporate agency bond securities, commercial paper and government agencies securities using Level 2 inputs by taking into consideration valuations obtained from third-party pricing services.

There were no transfers of assets or liabilities between the fair value measurement levels during the six months ended June 30, 2021 and year ended December 31, 2020.

4. Balance Sheet Components

Cash, Cash Equivalents and Restricted Cash

A reconciliation of cash, cash equivalents and restricted cash reported within the condensed consolidated balance sheets to the amount reported within the condensed consolidated statements of cash flows is as follows (in thousands):

	June 30, 2021	December 31, 2020
Cash and cash equivalents	$ 99,403	$ 147,017
Restricted cash	1,499	1,499
Total cash, cash equivalents and restricted cash	$ 100,902	$ 148,516

Property and Equipment

Property and equipment consisted of the following (in thousands):

	June 30, 2021	December 31, 2020
Leasehold improvements	$ 25,880	$ 25,880
Laboratory equipment and office furniture	22,917	23,638
Computer equipment	1,131	1,271
Construction in process	99	48
Total property and equipment, gross	50,027	50,837
Less: accumulated depreciation and amortization	(37,237)	(36,311)
Total property and equipment, net	$ 12,790	$ 14,526

Depreciation expense was $1.6 million and $3.1 million for the three and six months ended June 30, 2021, respectively, compared to $1.7 million and $3.4 million for the same periods in 2020.

Accrued Liabilities

Accrued liabilities consisted of the following (in thousands):

	June 30, 2021	December 31, 2020
Clinical trials and research and development costs	$ 13,272	$ 9,316
Manufacturing costs	8,696	8,297
Personnel-related costs	7,063	8,921
Accrued expenses	2,860	3,411
Total accrued liabilities	$ 31,891	$ 29,945

5. Research Collaboration and License Agreements

Merck

In 2015, the Company entered into a research collaboration, product development and license agreement with Merck, which, together with amendments made prior to June 30, 2021, is referred to as the Original Agreement, covering the discovery, development and commercialization of novel therapies across a range of therapeutic areas, including a broad, multi-year drug discovery and early development program financially supported by Merck. On June 30, 2021, the Company and Merck entered into an amended and restated research collaboration, product development and license agreement, or the Amended Collaboration Agreement, with a narrower scope than contemplated in the Original Agreement, as described in more detail below.

The Original Agreement.

The Original Agreement had an initial five-year research term, and Merck was granted the unilateral right to extend the research phase of the collaboration for two additional two-year terms in exchange for a $20.0 million extension fee payable at each extension, as described in more detail below. Each extension, if and when exercised by Merck, would be considered and would be accounted for as a separate arrangement. Under the Original Agreement, in March 2019, Merck exercised its first option to extend the research phase of the collaboration for two additional years through March 16, 2022, agreeing at that time to continue to fund the Company's research and development efforts up to $75.0 million each year consistent with the initial five-year term and, in lieu of the $20.0 million extension fee that would have otherwise been payable to the Company at that time, Merck agreed to make additional payments totaling up to $20.0 million in support of the Company's research and development program activities during 2021 and in the first quarter of 2022. Merck's decision whether or not to exercise its second option to extend the research phase of the collaboration under the Original Agreement was mooted when, on June 30, 2021, Merck and the Company entered into the Amended Collaboration Agreement, as described in more detail below.

Under the terms of Original Agreement, the Company determined the scientific direction and areas of therapeutic interest for the collaboration, with input from Merck, and was primarily responsible for the conduct of all research, preclinical and early clinical development activities through human proof-of-concept trials. The Company made the final determinations as to which collaboration compounds to advance into and through initial clinical trials, which collaboration compounds to progress into a human proof-of-concept trial and the design of any such trials, in each case with input from Merck through various governance committees.

Under the terms of the Original Agreement, upon completion of a human proof-of-concept trial for a particular collaboration compound, regardless of the results of such trial, Merck had the one-time option to obtain an exclusive, worldwide license, on specified terms, to that collaboration compound, as well as to all other molecules that are directed against the same target and that result in the same effect on such target, or the related molecules, and referred to as the Merck license option. For each program that Merck licensed, Merck was required to pay the Company a one-time fee of $20.0 million. Following exercise of a Merck license option, Merck was responsible, at its own cost, for any further development and any commercialization activities for compounds within the applicable program that it licensed, or the licensed compounds, subject to the Company's option on a licensed compound-by-licensed compound basis, prior to Merck initiating any Phase 3 clinical trial of such licensed compound, to enter into a worldwide cost and profit share with Merck, or the cost and profit share option, and to co-detail the applicable licensed compound in the United States. If the Company elected to exercise its cost and profit share option for a particular licensed compound, Merck agreed to advance to the Company and/or assume up to 25% of the Company's share of the global development costs for such licensed compound, subject to an aggregate cap over the course of the collaboration. All such amounts advanced or assumed by Merck accrued interest and would be recouped by Merck in full out of the Company's share of any profits resulting from sales of the licensed compound for which the Company elected to exercise its cost and profit share option before the Company was entitled to receive any of those profits. If the Company did not elect to exercise its cost and profit share option for a particular licensed compound, the Company was eligible to receive (i) an aggregate of up to $449.0 million in pre-commercial milestone payments upon the achievement of specific clinical development and regulatory events with respect to the licensed compound for the first three indications in the United States, the European Union, or EU, and Japan; (ii) commercial milestone payments of up to $125.0 million; and (iii) royalties at ascending low-double digit to mid-teen percentage rates, depending on the level of net sales Merck achieves worldwide for such licensed compound.

Under the terms of the Original Agreement, the Company also granted Merck a worldwide, exclusive right to conduct research and development on, and to manufacture, use and commercialize, small molecule compounds identified or developed by Merck that have specified activity against any target that the Company researched or developed during the research phase of the collaboration and that, but for use of the Company's confidential and proprietary information, Merck would not have discovered. If Merck ultimately did not exercise its Merck license

option to a collaboration compound the Company advanced through a human proof-of-concept study that was directed to any such target, Merck's research license for its own small molecule program with respect to such target would become non-exclusive, but it would retain an exclusive license to any small molecule compounds that it had, as of that time, identified and developed. Merck had sole responsibility for research and development of any of these small molecule compounds, at its own cost. The Company was eligible to receive milestone and royalty payments on small molecule compounds that were developed by Merck under such a license from the Company, in some cases at the same rates as those the Company was eligible to receive from Merck for a program that Merck licensed and that originated from the Company's own research and development efforts, provided that, but for use of the Company's confidential and proprietary information, Merck would not have discovered such small molecule compounds. However, the Company did not have the option to enter into a cost and profit share with respect to, or the option to co-detail, those small molecule compounds.

Under the terms of the Original Agreement, during the three-month period before the end of the research phase as defined in the Original Agreement, Merck had the right to review the Company's then-existing programs and to elect to designate one or more such programs and require the Company to continue to conduct research and development on such Merck-designated programs for up to three years, a period referred to as the Original Agreement tail period. Merck would pay all of the Company's internal and external costs for its work on such Merck-designated programs during the Original Agreement tail period, up to certain funding caps that decreased over the Original Agreement tail period based on a specified percentage of certain funding actually provided to the Company by Merck during the last 12 months of the research phase as defined in the Original Agreement. Merck also had the right to take over such Merck-designated programs and conduct such research and development activities itself or in partnership with a third party, at its own cost, or to terminate the Original Agreement tail period after a specified notice period. If Merck terminated the Original Agreement tail period, it had the right to elect to transition to itself or a third-party partner, at its own cost, any clinical trials that were then being conducted in such Merck-designated programs. If the Company completed a human proof-of-concept trial in one of such Merck-designated programs during the Original Agreement tail period or if Merck or its third-party partner completed a human proof-of-concept trial of a collaboration compound in one of such Merck-designated programs during or after the Original Agreement tail period, then Merck would have the same one-time Merck license option to obtain an exclusive, worldwide license, on specified terms, to that collaboration compound, as well as to all its related molecules. Merck would lose its Merck license option rights at the end of the Original Agreement tail period with respect to all programs for which no collaboration compound had completed a human proof-of-concept trial by such time, except for Merck-designated programs that Merck was continuing to use commercially reasonable efforts to research and develop.

The Company evaluated the Original Agreement under ASC 606. The Company identified the following promised goods or services at the inception of the Original Agreement: (i) a license to the Company's growth differentiation factor 15, or GDF15, agonist program; (ii) a license to pursue research and development and commercialization of small molecule compounds; (iii) the performance of research and development services for five years; (iv) two options to extend performance of the research and development services, each for two additional years; and (v) Merck license options to obtain licenses to collaboration compounds and related molecules after proof-of-concept trials. The Company determined that the GDF15 agonist program license and small molecule program license were not distinct from the research and development services, resulting in these items being combined into a single performance obligation.

The Company also considered whether such options created material rights in the contract and concluded that the fee attached to the exercise of such options approximated the SSP of the promised goods or services included in the options. Therefore, the Company concluded that such options did not give rise to material rights, were not performance obligations in the Original Agreement and, if and when exercised, would be accounted for as separate arrangements under ASC 606.

Additionally, if a separate arrangement were created by the exercise of such an option, such amounts would be contingent on events outside of either party's control, such as products proving to be commercially viable and governmental agencies granting regulatory approval. Such contingencies and uncertainties resulted in the amounts being constrained and withheld from inclusion in the estimated transaction price of a separate arrangement. Consequently, the estimated transaction price related to the Original Agreement was comprised of the upfront cash licensing fee of $94.0 million and ongoing research and development reimbursements.

Any fees associated with such options, including upfront fees, funding fees and milestones, were not included in the transaction price related to the Original Agreement as they were associated with options that were not material rights and, thus, were not performance obligations within the Original Agreement. For example, in November 2018, Merck exercised its option for a license to further research and develop MK-3655, an agonistic antibody discovered by the Company that selectively activates fibroblast growth factor receptor 1c-beta-klotho, or

FGFR1c/KLB, and other FGFR1c/KLB agonists and paid the Company $20.0 million. The $20.0 million license fee for MK-3655 was not included in the transaction price related to the Original Agreement and was instead recognized in the period of exercise in the fourth quarter of 2018 as the Company had no further obligation related to that license. The Phase 3 clinical study for MK-3655 has not begun, and the Company has therefore not made an election as to whether it will participate in the cost and profit share or receive milestone and royalty payments with respect to MK-3655.

The transaction price associated with the initial five-year term of the Original Agreement consisted of the $94.0 million upfront fee and the funding amounts of up to $75.0 million per year for each of the first five years of the Original Agreement. No milestones or other forms of consideration were included in the transaction price related to the Original Agreement as those amounts were contingent upon Merck exercising an option for licenses on collaboration compounds and would, therefore, be pursuant to separate arrangements and not part of the Original Agreement estimated transaction price. As there was only one performance obligation in the Original Agreement, the transaction price was allocated entirely to that performance obligation.

At the end of the initial five-year term of the Original Agreement, the remaining contract liability amount of $4.9 million related to the upfront license fee included within the transaction price as of December 31, 2019 was fully earned and recognized during the three months ended March 31, 2020. The Company has fully recognized revenue of approximately $388.1 million related to the single performance obligation associated with the initial five-year term of the Original Agreement.

Upon Merck exercising its option to extend the research phase of the collaboration through March 16, 2022, the Company deemed that a separate arrangement containing a two-year performance obligation to provide distinct research and development services was created on March 17, 2020. The transaction price of $170.0 million for this two-year performance obligation under the Original Agreement consisted of the potential funding of amounts of up to $75.0 million per year plus the additional funding amount of $20.0 million to be made during 2021 through to the first quarter of 2022 if the Company exceeded the $75.0 million funding cap. The Company used a cost-based input method to calculate the corresponding amount of revenue to recognize. In applying the cost-based input measure of revenue recognition, the Company measured actual costs incurred relative to budgeted costs to fulfill this distinct two-year performance obligation. These costs consisted of Company employee full-time equivalent hours plus allowable external (third-party) costs incurred. Revenue was recognized based on actual costs incurred as a percentage of total budgeted costs as the Company completed its performance obligation applied to the transaction price. The Company re-evaluated the estimate of expected costs to satisfy the performance obligation each reporting period and made adjustments for any significant changes. In addition, the Company also considered any necessary adjustments in an effort to ensure that the transaction price was within the range of potential funding amounts as described above. As such, management applied considerable judgment in estimating expected costs as such costs were key inputs when applying the cost-based input method. As the Company's estimated measure of progress was updated at each reporting period and revenue was recognized on a cumulative catch-up basis, a significant change in the estimate of expected costs for the remainder of the contract term could have had a material impact on revenue recognized (including the possible reversal of previously recognized revenue) at each reporting period, as well as the related impact on contract assets and liabilities.

Since the transaction price under the Original Agreement included an additional funding amount of $20.0 million to be made during 2021 and in the first quarter of 2022, the timing of when the revenue was recognized for this additional funding amount for performance of the services and when this additional funding amount can be billed resulted in the recognition of a related party contract asset of $4.6 million at March 31, 2021.

The Amended Collaboration Agreement.

Under the Original Agreement, Merck was required to notify the Company no later than March 17, 2021 of its unilateral decision whether to exercise its option to extend the research phase of the collaboration for an additional two-year term through March 16, 2024. In March 2021, Merck initiated discussions with the Company with respect to elements of the ongoing collaboration that might be optimized to better address the evolving interests and priorities of both the Company and Merck. On June 30, 2021, the Company and Merck entered into the Amended Collaboration Agreement. Pursuant to the Amended Collaboration Agreement, the prior two-year extension of the research phase under the Original Agreement was deemed to end on March 31, 2021, while a new three-year research phase commenced on April 1, 2021. Under the Original Agreement, all of the Company's research and development programs, both those existing at the time the Company entered into the Original Agreement and those the Company worked on during the research phase of the collaboration, other than aldafermin, were included within the scope of the collaboration. Under the Amended Collaboration Agreement, the scope of the collaboration and the resulting programs for which Merck has the Merck license option was narrowed. The collaboration as conducted

under the Amended Collaboration Agreement, or the continuing collaboration, is focused primarily on the identification, research and development of collaboration compounds directed to targets of interest to Merck in the fields of ophthalmology and cardiovascular or metabolic, or CVM, disease, including heart failure, as well as certain laboratory testing and other activities on molecules that are directed to one of up to two undisclosed targets outside of the fields of ophthalmology and CVM disease, referred to as the lab programs. The ophthalmology compounds in the continuing collaboration include NGM621, an ophthalmology compound in a Phase 2 clinical trial, and its related molecules, and compounds directed against two other undisclosed ophthalmology targets and their related molecules. Collaboration compounds that remain within the scope of the continuing collaboration under the Amended Collaboration Agreement are referred to as continuing collaboration compounds. Given the narrowed research scope under the Amended Collaboration Agreement, the Company now has the sole right, in its sole discretion, to independently research, develop and commercialize the collaboration compounds known as NGM120, NGM707 and NGM438, their related molecules and all other preclinical and research assets that the Company researched or developed under the Original Agreement but that are not included within the research and development scope of the continuing collaboration, which are referred to as the released NGM compounds. Merck retained the right to receive royalties at low single digit rates on the sales of any released NGM compounds that receive regulatory approval and, if the Company decides during a certain time period to engage in a formal partnering process for a released NGM compound or negotiations regarding a license or asset sale of a released NGM compound, the Company is obligated to notify Merck, provide Merck with certain information and engage in good faith, non-exclusive negotiations with respect to such released NGM compound with Merck at Merck's request.

Under the Amended Collaboration Agreement, Merck continues to have a Merck license option, as it did under the Original Agreement, to each continuing collaboration compound that is identified, researched and developed under the Amended Collaboration Agreement and reaches the specified option exercise point for such continuing collaboration compound as described below, and to its related molecules (each such continuing collaboration compound and its related molecules are referred to generally as a continuing program). In addition, under the terms of the Amended Collaboration Agreement, new CVM-related programs may be added to the continuing collaboration if recommended by the Company and selected by Merck, and Merck would have a Merck license option to such CVM-related continuing program. Merck has a one-time right to exercise its Merck license option, during the research phase or a tail period following such research phase, as applicable, for any continuing collaboration compound on a continuing program-by-continuing program basis when the Company or Merck achieves the specified Merck license option exercise point. The Merck license option exercise point for collaboration compounds under the Original Agreement was the completion of a human proof-of-concept trial. This generally continues to be the Merck license option exercise point under the Amended Collaboration Agreement for continuing collaboration compounds that are directed to ophthalmology targets, including NGM621 and its related molecules and all of the continuing collaboration compounds from two other ophthalmology continuing programs directed against undisclosed ophthalmology targets and their related molecules (collectively, including NGM621 and its related molecules, referred to as the continuing ophthalmology collaboration compounds). Upon the completion of the ongoing Phase 2 NGM621 CATALINA clinical trial, Merck will have an additional one-time option to obtain an exclusive, worldwide license to all of the continuing ophthalmology collaboration compounds together, referred to as the ophthalmology bundle option. If Merck does not exercise this one-time ophthalmology bundle option for all continuing ophthalmology collaboration compounds, it may nevertheless exercise its regular Merck license option with respect to NGM621 and its related molecules at such time, and it may also exercise its regular Merck license option for the continuing ophthalmology collaboration compounds from each of the other two programs if a continuing ophthalmology collaboration compound from such continuing program completes a human proof-of-concept trial. Unlike the Original Agreement, the Merck license option exercise point for a continuing collaboration compound from the CVM-related continuing programs or the lab programs will be the designation by Merck of such continuing collaboration compound as a research program development candidate that Merck intends to progress into preclinical development.

As was the case under the Original Agreement, if Merck exercises a Merck license option and obtains the relevant exclusive, worldwide license for a continuing collaboration compound and its related molecules, Merck will pay an option exercise fee to the Company and will be responsible, at its own cost, for any further development and commercialization activities for continuing collaboration compounds within that licensed continuing program. In such case, the Company will have the option to receive milestones and royalty payments or, in certain cases, to co-fund development and participate in a global cost and profit share arrangement of up to 50%, with an additional option to co-detail any such licensed continuing collaboration compound in the United States under the same terms as set forth in the Original Agreement. Except for the bundle option, the amount of the option exercise fees for continuing ophthalmology collaboration compounds upon completion of a human proof-of-concept trial remains the same as under the Original Agreement. If Merck exercises the ophthalmology bundle option, it will pay the Company either $40.0 million or $45.0 million as the Merck license option exercise fee, depending upon the stage of development of

one of the two earlier stage ophthalmology programs that is included in the ophthalmology bundle option. Under the Amended Collaboration Agreement, if Merck exercises the Merck license option for a continuing collaboration compound from a CVM-related continuing program or a lab program, Merck will pay the Company a $6.0 million option exercise fee at the time of selection to progress such licensed continuing collaboration compound or any of its related molecules into preclinical development and an additional $10.0 million milestone payment if such continuing collaboration compounds or one of its related molecules subsequently completes a human proof-of-concept trial.

Under the Amended Collaboration Agreement, the parties' rights and obligations with respect to MK-3655 and related FGFR1c/KLB agonists for which Merck exercised its Merck license option in November 2018 did not change as compared to the Original Agreement.

Under the Amended Collaboration Agreement, Merck will provide up to $86.0 million in research funding for the four calendar quarters ending March 31, 2022, which includes the remaining $16.0 million of the up to $20.0 million in additional payments Merck agreed to pay as part of exercising its first option to extend the research phase of the collaboration under the Original Agreement for two years through March 16, 2022. The Company is obligated to use commercially reasonable efforts to expend $35.0 million of such funding during the same time frame on the ophthalmology- and CVM-related continuing programs and the lab programs. The Company is permitted to use the remaining research funding provided by Merck during such time frame to advance the released NGM compounds. During the remaining two years of the research phase after March 2022, Merck will provide up to a total of $20.0 million in research funding for the ophthalmology- and CVM-related continuing programs. Merck will also fund the research and development costs related to NGM621 during the earlier of the remaining two years of the research phase after March 2022 or until Merck exercises, or decides not to exercise, its license option with respect to NGM621, subject to certain limitations. After March 2022, the Company will use its own funding to complete the work needed to be ready to submit an investigational new drug application, or IND, for a specific continuing collaboration compound included in one of the two earlier stage ophthalmology-related continuing programs and it will use commercially reasonable efforts to complete such work by March 31, 2023. If Merck exercises its regular Merck license option with respect to NGM621 or the ophthalmology bundle option for all of the continuing ophthalmology collaboration compounds upon completion of the ongoing Phase 2 CATALINA clinical trial of NGM621 and pays the applicable option exercise fee to the Company, then the Company will be obligated to reinvest $5.0 million or up to $15.0 million, respectively, of such option fee to fund research on the ophthalmology- and CVM-related continuing programs.

The research phase for the ophthalmology-related continuing programs will end no later than March 31, 2024. The research phase for the CVM-related continuing programs will also continue until March 31, 2024, unless the parties mutually agree to extend the research phase to March 31, 2026, in which case Merck will provide up to a total of $20.0 million in research funding during those additional two years. The research phase for the lab programs will end no later than December 31, 2022.

As under the Original Agreement, Merck has the right under the Amended Collaboration Agreement to review the then-ongoing continuing programs in the three-month period before the end of applicable research phase and to elect to designate one or more continuing programs for which research and development would continue to be conducted, until the applicable Merck license option exercise point is reached, for up to three years after the end of such research phase, with the possibility of extension if NGM is conducting ongoing ophthalmology clinical trials, if Merck is using commercially reasonable efforts to progress one or more ophthalmology-related continuing programs, or if Merck determines to continue progressing a CVM-related continuing program or lab program toward the nomination of a research program development candidate, and any such extension is referred to as an Amended Collaboration Agreement tail period. Under the Amended Collaboration Agreement, the Amended Collaboration Agreement tail period, if any, for the ophthalmology-related continuing programs would be separate from the Amended Collaboration Agreement tail period, if any, for the CVM-related continuing programs or any lab program, and Merck would be primarily responsible for performing all research and development activities, itself or through third party contractors, during the Amended Collaboration Agreement tail period, if any, for the CVM-related continuing programs or any lab program.

The Company concluded that the Amended Collaboration Agreement is a separate arrangement containing a three-year performance obligation to provide distinct research and development services in accordance with ASC 606. The total transaction price under the Amended Collaboration Agreement is $121.3 million and represents the sum of potential funding amounts, including $86.0 million in research funding for the four calendar quarters ending March 31, 2022, $20.0 million in research funding for the ophthalmology- and CVM-related continuing programs during the remaining two years of the research phase after March 2022 and $15.3 million in estimated NGM621 reimbursable expenses also during the remaining two years of the research phase after March 2022. The Company

will re-evaluate the transaction price as uncertain events are resolved or other changes in circumstances occur. The Company continues performing a series of research and development services in the area of both the continuing collaboration compounds and the released NGM compounds and has one performance obligation across all continuing programs. The Company will continue to use the cost-based input method to calculate the amount of revenue to recognize as services are being rendered from April 1, 2021 through March 31, 2024.

The Company considered whether the Merck license option and the ophthalmology bundle option created material rights in the contract and concluded that the fee attached to the exercise of such options approximated the SSP of the promised goods or services included in the options. Therefore, the Company concluded that such options did not give rise to material rights, were not performance obligations in the Amended Collaboration Agreement and, if and when exercised, would be accounted for as separate arrangements under ASC 606.

If Merck exercises its regular Merck license option for NGM621 or the ophthalmology bundle option for all of the continuing ophthalmology collaboration compounds upon completion of the Phase 2 CATALINA clinical trial and pays the applicable Merck license option exercise fee to the Company, this would not result in a modification of the contract as total contract consideration and the Company's performance obligation under the Amended Collaboration Agreement will not change.

As of March 31, 2021, the Company had a contract asset of $4.6 million under the prior two-year extension of the research phase under the Original Agreement which, under the Amended Collaboration Agreement, was no longer billable to Merck at any point and therefore was recorded as a reduction in both the transaction price under the Original Agreement and revenue on June 30, 2021.

A breakout of the milestone payments in connection with the potential achievement of certain clinical development events is as follows (in thousands):

	First Indication	Second Indication	Third Indication
Upon administration of an applicable product to the first patient in the first Phase 3 clinical trial for such product for the given indication	$ 35,000	$ 25,250	$ 17,500
Upon first completion of a proof-of-concept trial for a CVM-related research program development candidate	$ 10,000	$ —	$ —
Upon first completion of a proof-of-concept trial for a certain research development candidate for a lab program	$ 10,000	$ —	$ —

A breakout of the milestone payments in connection with the potential achievement of various regulatory events for each of the three geographic areas is as follows (in thousands):

	First Indication	Second Indication	Third Indication	Total
United States	$ 75,000	$ 56,250	$ 37,500	$ 168,750
European Union	60,000	45,000	30,000	135,000
Japan	30,000	22,500	15,000	67,500
	$ 165,000	$ 123,750	$ 82,500	$ 371,250

Summary of Related Party Revenue

The Company recognized revenue from its collaboration and license agreements as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Related party revenue	$ 16,773	$ 19,755	$ 38,348	$ 44,119

For the three and six months ended June 30, 2021, the Company recognized collaboration and license revenue of $16.8 million and $38.3 million, respectively, primarily related to reimbursable research and development activities associated with the performance obligation for the two-year extension period through March 31, 2021 under the Original Agreement and from April 1, 2021 through June 30, 2021 under the Amended Collaboration Agreement, all of which were recognized using the cost-based input model. For the six months ended June 30,

2020, collaboration and license revenue under the Original Agreement included $4.9 million related to the upfront license fee under the initial five-year term that ended in March 2020.

Related Party Contract Assets and Liabilities

Amounts recognized as revenue prior to the Company having an unconditional right (or a right that is conditioned only on the passage of time) to receipt are recorded as contract assets in the Company's condensed consolidated balance sheets. If the Company expects to have an unconditional right to receive the consideration in the next twelve months, the contract asset will be classified in current assets. The Company did not record a related party contract asset as of June 30, 2021. As of December 31, 2020, the Company recorded a related party contract asset of $6.1 million.

Amounts received prior to satisfying the revenue recognition criteria are recorded as contract liabilities in the Company's condensed consolidated balance sheets. If the related performance obligation is expected to be satisfied within the next twelve months, the contract liability will be classified in current liabilities. As of June 30, 2021, the Company recorded a contract liability of $5.0 million. The Company did not record a contract liability as of December 31, 2020.

6. Commitments and Contingencies

Operating Lease and Lease Guarantee

In December 2015, the Company entered into an operating lease for its corporate office space and laboratory facility at 333 Oyster Point Blvd, South San Francisco, California for approximately 122,000 square feet that expires in December 2023. The lease provided a tenant improvement allowance of $15.2 million that the Company used in 2016 towards $22.3 million in total leasehold improvements that are amortized over the lease term of seven years. The 333 Oyster Point lease agreement required a letter of credit in the amount of $2.3 million as a security deposit to the lease, which the Company has recorded as non-current restricted cash on the condensed consolidated balance sheets. The Company has the right to reduce the letter of credit amount by $0.4 million on each of the third anniversary and fourth anniversary of the rent commencement date. In 2020, the Company reduced its letter of credit by $0.4 million and reclassified that amount from restricted cash to cash and cash equivalents on the condensed consolidated balance sheets.

In September 2009, the Company entered into an operating lease for a corporate office space and laboratory facility at 630 Gateway Blvd, in South San Francisco, California for approximately 50,000 square feet, as amended in June 2014. In July 2016, the Company assigned the operating lease of 630 Gateway to Merck, as part of the Company's relocation to 333 Oyster Point. The operating lease expired in November 2020. Following expiration of the operating lease, the Company retains the obligation to indemnify the landlord and Merck under certain limited circumstances, but has no further payment obligations.

The Company recognizes rent expense on a straight-line basis over the lease period with the difference recorded as deferred rent. In addition, tenant improvement allowances recorded are amortized as a reduction to rent expense on a straight-line basis over the lease term. Rent expense under these facility operating leases was approximately $0.5 million for the three-month periods ended June 30, 2021 and 2020 and approximately $1.1 million for the six-month periods ended June 30, 2021 and 2020.

Future minimum payments under the unassigned lease obligations described above are as follows as of June 30, 2021 (in thousands):

Year Ending December 31,		
2021	$	2,607
2022		5,294
2023		5,455
Total	$	13,356

Indemnification

In the normal course of business, the Company enters into contracts and agreements that contain a variety of representations and warranties and may provide for indemnification of the counterparty. The Company's exposure under these agreements is unknown because it involves claims that may be made against it in the future but have not yet been made.

In accordance with the Company's amended and restated certificate of incorporation and its amended and restated bylaws, the Company has indemnification obligations to its officers and directors, subject to some limits, with respect to their service in such capacities. The Company has also entered into indemnification agreements with its directors and certain of its officers. To date, the Company has not been subject to any claims, and it maintains director and officer insurance that may enable it to recover a portion of any amounts paid for future potential claims.

The Company's exposure under these agreements is unknown because it involves claims that may be made against it in the future but have not yet been made. The Company believes that the fair value of these indemnification obligations is minimal and, accordingly, it has not recognized any liabilities relating to these obligations for any period presented.

7. Stockholders' Equity

Preferred Stock

The Company has 10,000,000 shares of preferred stock authorized, which may be issued at the discretion of the Company's board of directors. The board of directors may issue shares of preferred stock in one or more series and fix the number, rights, preferences, privileges and restrictions for such series. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences and sinking fund terms. As of June 30, 2021, the Company did not have any shares of preferred stock issued or outstanding.

Common Stock

Public Offering of Common Stock

In January 2021, the Company sold 5,324,074 shares of its common stock through an underwritten public offering at a price to the public of $27.00 per share for aggregate net proceeds to the Company of $134.6 million, after deducting underwriting discounts and commissions and other offering expenses paid by the Company. The offering closed on January 8, 2021.

As of June 30, 2021 and December 31, 2020, the Company had 77,307,156 and 70,585,364 shares of common stock outstanding, respectively, which included shares subject to repurchase of 657 and 6,508, respectively, as a result of early exercise of stock options not yet vested.

As of June 30, 2021 and December 31, 2020, the Company had reserved shares of common stock for issuance as follows:

	June 30, 2021	December 31, 2020
Reserve balance for Sales Agreement	14,190,300	14,190,300
Common stock options outstanding	11,124,234	10,017,918
Common stock options available for grant	6,623,782	6,186,497
ESPP shares available for purchase	590,219	700,074
401(k) Matching Plan	17,813	21,930
Total	32,546,348	31,116,719

Open Market Sale Agreement

In June 2020, the Company entered into the Sales Agreement with Jefferies relating to the sale of shares of its common stock. In accordance with the terms of the Sales Agreement, the Company may offer and sell shares of its common stock having an aggregate offering price of up to $150.0 million from time to time through Jefferies acting as its sales agent.

During the six months ended June 30, 2021, no shares of the Company's common stock were sold pursuant to the Sales Agreement. As of June 30, 2021, $127.4 million of the Company's common stock remained available to be sold under the Sales Agreement, subject to conditions specified in the Sales Agreement.

Equity Incentive Plan

In 2018, the Company adopted the 2018 Equity Incentive Plan, or the 2018 Plan, for eligible employees, officers, directors, advisors and consultants, which provides for the grant of incentive and non-statutory stock options, restricted stock awards and stock appreciation rights. The terms of the stock option agreements, including vesting requirements, are determined by the board of directors, subject to the provisions of the 2018 Plan. Options granted by the Company generally vest within four years and are exercisable from the grant date until ten years after the date of grant. Vesting of certain employee options may be accelerated in the event of a change in control of the Company.

Early Exercise of Stock Options

The 2018 Plan allows for the granting of options that may be exercised before the options have vested. Shares issued as a result of early exercise that have not vested are subject to repurchase by the Company upon termination of the purchaser's employment or services, at the price paid by the purchaser, and are not deemed to be issued for accounting purposes until those related shares vest. The amounts received in exchange for these shares have been recorded as a liability on the condensed consolidated balance sheets and will be reclassified into common stock and additional paid-in-capital as the shares vest. The Company's right to repurchase these shares generally lapses in equal installments over four years beginning from the original vesting commencement date. Since the beginning of March 2021, the Company has not granted any options under the 2018 Plan that can be early exercised prior to vesting.

Stock Option Activity

A summary of the activity under the 2008 Plan and the 2018 Plan is as follows:

	Outstanding Options		Weighted Average Remaining Contractual Life (In Years)	Aggregate Intrinsic Value (In Thousands)
	Number of Options	Weighted Average Exercise Price		
Balances at December 31, 2020	10,017,918	$ 10.52	6.45	$ 198,097
Options granted	2,604,583	30.56		
Options exercised	(1,280,194)	6.10		
Options cancelled	(218,073)	19.46		
Balances at June 30, 2021	11,124,234	$ 15.55	7.00	$ 74,692
Vested and expected to vest at June 30, 2021	10,903,901	$ 15.36	6.95	$ 74,384
Exercisable at June 30, 2021	8,994,528	$ 11.97	6.42	$ 74,290

The aggregate intrinsic values of options outstanding, vested and expected to vest, and exercisable were calculated as the difference between the exercise price of the options and the estimated fair value of the Company's common stock.

The weighted-average grant date fair value of stock options granted during the six months ended June 30, 2021 and 2020 was $19.23 and $10.05 per share, respectively. The intrinsic value of stock options exercised during the six months ended June 30, 2021 and 2020 was $26.7 million and $24.6 million, respectively. Due to the Company's net operating losses, the Company did not realize any tax benefits from stock-based payment arrangements for the three and six months ended June 30, 2021 and 2020.

Employee Stock-Based Compensation Expense

Employee and director stock-based compensation expense for the three and six months ended June 30, 2021 and 2020 was calculated based on awards previously granted to employees and directors that are ultimately expected to vest and has been reduced for estimated forfeitures.

Employee and director stock-based compensation expense was allocated as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2019
Research and development	$ 3,662	$ 2,049	$ 7,166	$ 3,922
General and administrative	2,978	1,639	5,989	3,433
Total stock-based compensation expense	$ 6,640	$ 3,688	$ 13,155	$ 7,355

Stock-based compensation expense related to stock-based payment awards to non-employees was $76,000 and $143,000 for the three and six months ended June 30, 2021, respectively, and $35,000 and $63,000 for the three and six months ended June 30, 2020, respectively.

Employee Stock Purchase Plan

Under the ESPP, eligible employees are granted the right to purchase shares of the Company's common stock through payroll deductions that cannot exceed 15% of each employee's salary. The ESPP provides for a 24-month offering period, which includes four six-month purchase periods. At the end of each purchase period, eligible employees are permitted to purchase shares of common stock at the lower of 85% of fair market value at the beginning of the offering period or fair market value at the end of the purchase period. As of June 30, 2021, 409,781 shares of common stock had been purchased under the ESPP.

8. Income Taxes

Since inception, the Company has incurred net losses and expects to record a net loss for the year ending December 31, 2021. Additionally, the Company's net deferred tax assets have been fully offset by a valuation allowance. Therefore, the Company did not record a tax provision for income taxes for the three and six months ended June 30, 2021 and 2020.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the condensed consolidated financial statements and notes to the condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q. This discussion and analysis contains forward-looking statements based upon current beliefs, plans and expectations that involve risks, uncertainties and assumptions, such as statements regarding our plans, objectives, expectations, intentions and projections. Our actual results and the timing of events could differ materially from those anticipated in these forward-looking statements as a result of several factors that could impact our business, including those set forth in the section titled "Risk Factors" under Part II, Item 1A in this Quarterly Report on Form 10-Q. In some cases, you can identify forward-looking statements by terminology such as "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potentially," "predict," "should," "will" or the negative of these terms or other similar expressions.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Quarterly Report on Form 10-Q, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate we have conducted exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

Overview of Our Business

We are a biopharmaceutical company focused on discovering and developing novel therapeutics based on scientific understanding of key biological pathways underlying retinal diseases, cancer, and liver and metabolic diseases. These diseases represent a significant burden for patients and healthcare systems and, in some cases, are leading causes of morbidity and mortality. Our strategy is to leverage a combination of interrogating human biology and engineering powerful biologics to discover and develop promising product candidates and seek to move them rapidly into proof-of-concept studies and late-stage development, with the goal of delivering impactful first-in-class or best-in-class treatments to underserved patients suffering from grievous diseases. Since the commencement of our operations in 2008, we have generated a robust portfolio of product candidates ranging from early discovery to late-stage development. We aspire to operate one of the most productive research and development engines in the biopharmaceutical industry.

Merck Collaboration Update

On June 30, 2021, we and Merck Sharp & Dohme Corp., or Merck, entered into an amended and restated research collaboration, product development and license agreement, or the Amended Collaboration Agreement, that amends and restates the research collaboration, product development and license agreement that we originally entered into with Merck in February 2015, which, together with amendments made prior to entering into the Amended Collaboration Agreement, we refer to as the Original Agreement. The Original Agreement contemplated an initial five-year research term and, in March 2019, Merck exercised its option to extend the research phase of the collaboration through March 16, 2022. As part of that extension, Merck agreed to continue to fund up to $75.0 million of our research and development efforts each year consistent with the initial five-year research term and, in lieu of a $20.0 million extension fee payable to us, Merck agreed to make additional payments totaling up to $20.0 million in support of our research and development activities during 2021 through the first quarter of 2022. Under the terms of the Amended Collaboration Agreement, we and Merck agreed to extend the research phase of the collaboration with a narrower scope than contemplated in the Original Agreement. The research phase will now continue generally through March 31, 2024, with possible extensions for each of the various programs to allow us or Merck to complete ongoing development.

Under the Original Agreement, all of our research and development programs, both those existing at the time we entered into the Original Agreement and those we worked on during the research phase of the collaboration, other than aldafermin, were included within the scope of the collaboration. Under the Amended Collaboration Agreement, the scope of the collaboration and the resulting programs for which Merck has a license option was narrowed. The collaboration as now being conducted under the Amended Collaboration Agreement, or the continuing collaboration, focuses primarily on the identification, research and development of collaboration compounds directed to targets of interest to Merck in the fields of ophthalmology and cardiovascular or metabolic, or CVM, disease, including heart failure, as well as certain laboratory testing and other activities on molecules that are directed to one of up to two undisclosed targets outside of the fields of ophthalmology and CVM disease, referred to

as the lab programs. The ophthalmology compounds in the continuing collaboration include NGM621 and its related molecules and compounds directed against two other undisclosed ophthalmology targets and their related molecules. Collaboration compounds that remain within the scope of the continuing collaboration under the Amended Collaboration Agreement are referred to as continuing collaboration compounds. Our and Merck's rights and obligations with respect to MK-3655 and related FGFR1c/KLB agonists for which Merck exercised its license option in November 2018 under the Original Agreement did not change under the Amended Collaboration Agreement as compared to the Original Agreement. Merck retains the one-time option to obtain an exclusive, worldwide license, on specified terms, to continuing collaboration compounds, as well as to other molecules that are directed against the same target and that result in the same effect on such target, or the related molecules, upon completion of a human proof-of-concept trial for a particular collaboration compound, regardless of the results of such trial, or at earlier points as specified in the Amended Collaboration Agreement, including the option to license NGM621 upon completion of a human proof-of-concept trial in humans, as well as the additional one-time option at that time to license NGM621 together with all of the ophthalmology continuing collaboration compounds included within the scope of the Amended Collaboration Agreement. All such options to license are referred to as Merck license options.

Under the Amended Collaboration Agreement, we now have the sole right, in our sole discretion to independently research, develop and commercialize our oncology product candidates NGM120, NGM707 and NGM438 and their related molecules and all other preclinical and research assets that we researched or developed under the Original Agreement but that are not included within the research and development scope of the continuing collaboration, which we refer to as the released NGM compounds, subject to Merck’s right to receive royalties at low single digit rates on any released NGM compounds that receive regulatory approval and, if we decide during a certain time period to engage in a formal partnering process or negotiations regarding a license or asset sale for a released NGM compound, to a requirement to notify Merck, provide Merck with certain information and engage in good faith, non-exclusive negotiations with respect to such released NGM compound with Merck at Merck’s request. We are generally responsible for funding released NGM compounds going forward, although we may use Merck funding for research and development activities that we perform on these compounds prior to April 1, 2022. We also have full rights to all future programs we pursue that fall outside of the scope of the Amended Collaboration Agreement. Aldafermin remains wholly owned and funded by us.

Under the terms of the Amended Collaboration Agreement, Merck will provide an aggregate of approximately $120.0 million in research and development funding through March 31, 2024, including $86.0 million for the period from April 1, 2021 through March 31, 2022 (although we are obligated to use commercially reasonable efforts to expend $35.0 million of such funding during such time frame on programs within the scope of the continuing collaboration other than the released NGM compounds), plus additional potential option payments if Merck exercises any Merck license option. We are committed to advancing an undisclosed ophthalmology program to a potential investigational new drug application, or IND, submission, utilizing our own funding after March 2022. After Merck has exercised the Merck license option for a continuing collaboration program and paid the applicable option fee, the economics for such program are unchanged from the Original Agreement. Following exercise of a Merck license option, Merck is responsible, at its own cost, for any further development and any commercialization activities for compounds within the applicable program that it licensed, or the licensed compounds, subject to our option on a licensed compound-by-licensed compound basis, prior to Merck initiating any Phase 3 clinical trial of such licensed compound, to enter into a worldwide cost and profit share with Merck. If we do not elect to exercise our cost and profit share option for a particular licensed compound, we are eligible to receive milestone and royalty payments.

Similar to the Original Agreement, during the research phase and any applicable tail period of the continuing collaboration, we may not directly or indirectly research, develop, manufacture or commercialize, outside of the continuing collaboration, any product with specified activity against any target that is being researched or developed under the continuing collaboration and, if Merck exercises its Merck license option for a program, we may not directly or indirectly research, develop, manufacture or commercialize any product with specified activity against the target that is the subject of that program for so long as Merck’s license to it remains in effect. In addition, under the Amended Collaboration Agreement, we are prohibited from directly or indirectly researching, developing or commercializing any product for the treatment of heart failure with preserved ejection fraction (HFpEF) during the research phase for the CVM-related programs.

For more information on the terms of the Amended Collaboration Agreement, see Note 5, “Research Collaboration and License Agreements,” of the notes to unaudited condensed consolidated financial statements included in Part 1 Item 1 of this Quarterly Report on Form 10-Q.

Pipeline Programs and Operations Updates

We currently have five product candidates in the clinic, including four Phase 2 and Phase 2b programs, two wholly owned by us (NGM120 and aldafermin), one being progressed by Merck (MK-3655) and one optionable by Merck (NGM621), and one in the Phase 1 component of a Phase 1/2 trial (NGM707). In addition, we have one wholly owned product candidate expected to enter the clinic in the first half of 2022.

- **Retinal diseases**.
  - **NGM621**. NGM621 is a humanized Immunoglobulin 1, or IgG1, monoclonal antibody administered via intravitreal, or IVT, injection. NGM621 was engineered to potently inhibit the activity of complement C3 with the treatment goal of reducing disease progression in patients with geographic atrophy, or GA, secondary to age-related macular degeneration. NGM621 remains within the scope of the Amended Collaboration Agreement with Merck, and Merck has a one-time option to license NGM621 and its related molecules upon completion of the Phase 2 CATALINA clinical trial of NGM621 in patients with GA, as well as the additional one-time option at that time to license NGM621 together with all of the ophthalmology continuing collaboration compounds and their respective related molecules included within the scope of the Amended Collaboration Agreement.
    - To date in 2021, we completed enrollment of 320 patients into the Phase 2 CATALINA clinical trial of NGM621 in patients with GA, more than the originally planned 240 patients. The CATALINA trial was designed to be a Phase 3-supportive or -enabling clinical trial and is evaluating NGM621's safety and effects on disease progression when given every four weeks or every eight weeks compared to matched sham injection control groups.
    - ***Looking forward***: We anticipate a readout of the CATALINA trial topline data in the second half of 2022.
- **Oncology**.
  - **NGM120**. NGM120 is an antagonist antibody that binds glial cell-derived neurotrophic factor receptor alpha-like, or GFRAL, and inhibits growth differentiation factor 15, or GDF15, signaling, for the potential treatment of cancer and cancer-related cachexia. We are currently conducting a clinical trial to assess NGM120's effect on cancer-related cachexia and on cancer in patients with select advanced solid tumors and metastatic pancreatic cancer.
    - To date in 2021, we initiated a Phase 2 placebo-controlled component of the ongoing Phase 1/2 PINNACLES clinical trial of NGM120 and are continuing enrollment into that trial. This Phase 2 portion of the trial is testing NGM120 in combination with gemcitabine and Abraxane® (paclitaxel protein bound) as first-line treatment in patients with metastatic pancreatic cancer to assess NGM120's effect on both cancer and cancer-related cachexia.
    - ***Looking forward***: In the third quarter of 2021, we expect to report interim data from two Phase 1 dose-finding cohorts of the ongoing Phase 1/2 trial of NGM120: a Phase 1a cohort evaluating NGM120 as a monotherapy in patients with select advanced solid tumors and a Phase 1b cohort evaluating NGM120 in combination with gemcitabine and Abraxane in patients with metastatic pancreatic cancer.
  - **NGM707**. NGM707 is a dual antagonist antibody that is designed to inhibit Immunoglobulin-like transcript 2, or ILT2 (also known as LILRB1), and Immunoglobulin-like transcript 4, or ILT4 (also known as LILRB2). ILT2 and ILT4 are key myeloid and lymphoid checkpoints that may restrict anti-tumor immunity, enable tumors to evade immune detection and contribute to resistance to T-cell checkpoint inhibitors. Designed to inhibit these key checkpoints, NGM707 has the potential to reverse myeloid suppression and further stimulate effector function activity. In June 2021, we initiated the Phase 1 component of a first-in-human Phase 1/2 clinical trial of NGM707, as a monotherapy and in combination with KEYTRUDA® (pembrolizumab), for the treatment of patients with advanced solid tumors and are continuing enrollment into that trial.
  - **NGM438**. NGM438 is an antagonist antibody that is designed to inhibit leukocyte-associated immunoglobulin-like receptor 1, or LAIR1. LAIR1, through interactions with tumor-associated collagens, may form a stromal checkpoint that imposes signaling-based immune suppression and impedes antitumor immunity. Designed to inhibit this stromal checkpoint, NGM438 has the potential to treat cancer by promoting the remodeling of the tumor architecture that restricts T cell infiltration of the tumor cell mass and reversing immune suppression in the tumor microenvironment.

- To date in 2021, we have advanced the preparation of an IND for a planned submission later in 2021 or in early 2022.
- ***Looking forward:*** We expect to commence a first-in-human Phase 1 clinical trial of NGM438 in patients with advanced solid tumors in the first half of 2022.

- **Liver and metabolic diseases.**
  - **Aldafermin.** Aldafermin is an engineered analog of human hormone fibroblast growth factor 19, or FGF19, that is administered through a once-daily subcutaneous injection. Aldafermin is wholly owned by us. In May 2021, we announced topline results from our ALPINE 2/3 trial evaluating aldafermin in 171 patients with non-alcoholic steatohepatitis, or NASH, and liver fibrosis stage 2 or 3, or F2 or F3. The trial did not meet its primary endpoint evaluating a dose response at week 24 on liver fibrosis improvement by >1 stage with no worsening of NASH. The lack of statistically significant fibrosis improvement was unexpected given the consistency of histology findings seen with aldafermin in the fourth cohort of a previously completed Phase 2 trial. Although the trial did achieve statistical significance versus placebo on certain secondary endpoints, we have decided to shift resources that had previously been reserved for a Phase 3 F2/F3 NASH development program toward advancing our other programs. Aldafermin remains in Phase 2b development for the treatment of patients with compensated NASH cirrhosis (liver fibrosis stage 4, or F4). To date in 2021, in addition to completing treatment of patients in and announcing topline results from our ALPINE 2/3 trial, we have continued enrollment into our Phase 2b ALPINE 4 clinical trial of aldafermin, with a goal of enrolling approximately 150 patients across 80 sites in the United States, Europe, the UK, Hong Kong and Australia.
  - **MK-3655** (formerly NGM313). MK-3655 is an agonistic antibody discovered by us that selectively activates fibroblast growth factor receptor 1c-beta-klotho, or FGFR1c/KLB, which regulates insulin sensitivity, blood glucose and liver fat and is administered every four weeks through a subcutaneous injection. MK-3655, in Phase 2b development for the treatment of NASH, was optioned by Merck under the Original Agreement. In 2021, Merck is continuing enrollment into the worldwide 52-week randomized, double-blind Phase 2b trial of MK-3655 in patients with NASH and F2 or F3 liver fibrosis that it initiated in the fourth quarter of 2020.

We have additional undisclosed programs that are in various stages of development ranging from functional validation to preclinical development.

The success of each of our product candidates may be affected by numerous factors, including preclinical data, clinical data, competition, manufacturing capability, sales capability, collaboration partners, the sufficiency of our cash resources, regulatory matters, third-party payor matters and commercial viability. We do not have any products approved for sale and do not anticipate generating revenue from product sales for the foreseeable future, if ever.

Partnering has been and is expected to continue to be a component of our strategy as we plan to develop a broad portfolio of product candidates and, if approved, to commercialize the resulting products. Our collaboration with Merck under the Original Agreement has provided us with substantial financial support; however, under the narrower scope of the Amended Collaboration Agreement, after March 2022 the level of research funding from Merck will be substantially lower on an annual and overall basis than the research funding provided by Merck prior to that date. As a result, our funding requirements for the development of our current and potential future product candidates will increase substantially after March 2022, particularly with respect to our wholly owned programs, and, to a lesser extent, with respect to our programs that are within the scope of the continuing collaboration under the Amended Collaboration Agreement that we are required to fund. In addition, our funding requirements would increase for any programs that are within the scope of the continuing collaboration in the event Merck does not elect to license these programs, in the event Merck elects to terminate its license to any program it licenses or in the event we opt to co-develop any Merck-licensed programs. Accordingly, we will require significant additional capital in order to proceed with the development through to regulatory approval and commercialization of our current and potential future product candidates, or we will need to enter into additional collaboration or license agreements in order to fund such development and commercialization. Neither may be possible and, as a result, we may be required to delay, scale back or discontinue development of such product candidates, which could have a material adverse effect on our business, operating results and prospects. For any programs wholly owned by us and not within the scope of the continuing collaboration, we may decide to pursue a strategic partner to progress, in whole or in part, the program or commercialize any resulting approved product.

In addition, all of our manufacturing activities are outsourced to third-party contract development and manufacturing organizations or third-party contract manufacturing organizations, which we refer to collectively as CMOs, who are generally single source suppliers of the drug product or drug substance they are manufacturing for us. We also utilize third-party contract research organizations, or CROs, to carry out many of our clinical development activities. We expect to be reliant on CMOs and CROs for these activities for the foreseeable future. Significant portions of our research and development resources are focused, and will continue to be focused, on the manufacture of clinical trial materials. If our CROs and CMOs fail to satisfy their contractual duties to us or meet expected deadlines or if our CMOs experience difficulties in scaling production or procuring raw materials or components or experience product loss due to contamination, equipment failure, improper installation or operation of equipment, vendor or operator error, turnover of qualified staff or improper storage conditions, our ongoing and planned trials may be delayed, perhaps substantially, which could materially and adversely affect our business.

We seek to allocate our capital efficiently and strategically and fund our portfolio based on each program's scientific and other merits. Our discipline has been demonstrated by our decision not to proceed with development activities on multiple potentially viable product candidates for portfolio management reasons, in order to concentrate our resources on what we consider our most promising product candidates. However, given the narrower scope of the Amended Collaboration Agreement and our associated increased funding requirements with respect to our development programs, particularly after March 2022, we may need to delay or suspend development activities on product candidates that we consider promising unless and until we are able to raise sufficient additional capital in order to proceed with such development through to regulatory approval.

Financial Highlights

Since inception, we have funded our operations primarily through:

- fees received from collaboration partners, which since inception through June 30, 2021 includes reimbursement of research and development expenses of $446.8 million and upfront cash licensing fees of $123.0 million, primarily from Merck, and a payment of $20.0 million from Merck to license MK-3655 and related compounds;
- proceeds from private placements of convertible preferred stock prior to our initial public offering, or IPO, including approximately $106.0 million of our Series E convertible preferred stock purchased by Merck;
- net proceeds from our IPO in 2019 of approximately $107.8 million, together with proceeds from the concurrent private placement of shares of common stock to Merck of $65.9 million;
- net proceeds of $21.9 million from sales of 809,700 shares of our common stock at an average price of $27.94 per share in December 2020 under an Open Market Sale Agreement℠, or the Sales Agreement, we entered into with Jefferies LLC, or Jefferies, in June 2020; and
- net proceeds of $134.6 million from the sale of 5,324,074 shares of our common stock in January 2021 upon completion of an underwritten public offering of our common stock, or the follow-on offering, which included the full exercise by the underwriters of their option to purchase additional shares.

At June 30, 2021, we had $390.6 million in cash, cash equivalents and short-term marketable securities.

We have incurred net losses each year since our inception. As of June 30, 2021, we had an accumulated deficit of $362.9 million. Substantially all of our net losses have resulted from costs incurred in connection with our research and development, or R&D, programs and general and administrative costs associated with our operations. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our clinical trials and our expenses on other R&D activities, and the amount of R&D funding we receive from Merck or other collaboration partners, particularly after March 2022. For further discussion of our financial position and future sources of funding, see "Liquidity and Capital Resources" below.

COVID-19 Business Update

We continue to closely monitor the impact of the global COVID-19 pandemic on our business and have taken and continue to take proactive efforts designed to protect the health and safety of our patients, study investigators, clinical research staff and employees, while maintaining business continuity. Following guidance from federal, state and local authorities, we continue to operate with a primarily remote work model. Employees working on site continue to be mostly those individuals conducting essential in-person laboratory work and other business functions considered essential under COVID-19 regulations and guidance. We are still allowing other individuals to work remotely. There have been relatively minor impacts on productivity overall, but future developments could more materially and adversely impact our productivity. In addition, in 2020 and to date in 2021, we have experienced higher-than-normal employee turnover and an increased rate of hiring new employees. We cannot predict whether these trends will continue or be exacerbated, when we will be permitted to, and whether we will,

return to a fully office-based working model or a hybrid model, and the impacts of that decision, or whether we will be required to adopt a more restrictive work model as the pandemic evolves.

For patients enrolled in our clinical trials, we continue to work closely with clinical trial investigators and site staff with the goal of continuing treatment in a manner designed to uphold trial integrity, while allowing some flexibility in the manner and timing of patient visits, and to observe government and institutional guidelines designed to safeguard the health and safety of patients, clinical trial investigators and site staff. We have experienced, from time to time, a slower pace of clinical trial site initiation and clinical trial enrollment than originally anticipated in certain of our clinical trials, including the ALPINE 4, CATALINA and NGM120 trials, and we experienced a higher dropout rate in our ALPINE 2/3 trial than we had anticipated based on our previous trials in patients with NASH. We believe this may be due to factors such as the vulnerability of our studied patient populations, clinical trial site suspensions, reallocation of medical resources and the challenges of working remotely due to shelter-in-place and similar government orders.

We have been proactively working to mitigate these and other effects of the COVID-19 pandemic by monitoring site initiations, patient enrollment and patient study adherence to provide support to patients and trial staff, often on a case-by-case and/or patient-by-patient basis. For example, we have implemented additional study policies and procedures designed to help protect trial participants from exposure to COVID-19 as a result of their trial participation, which include the use of telemedicine visits, remote monitoring of patients and clinical trial sites and other measures, as appropriate, designed to ensure that data from clinical trials that may be disrupted as result of the pandemic are collected pursuant to the study protocol and consistent with current Good Clinical Practices, with any material protocol deviation reviewed and approved by the clinical trial site institutional review board, or IRB. Most of our clinical trial sites, both within and outside of the United States, continue to screen patients in our clinical trials, and new patients are being enrolled when appropriate. While the COVID-19 pandemic has not yet resulted in a significant impact to our disclosed clinical development timelines, as the pandemic continues, there may be additional negative impacts on our ability to initiate new clinical trial sites, maintain enrollment of existing patients and enroll new patients, which may result in increased clinical trial costs and negatively impact our timelines and our ability to obtain regulatory approvals of our product candidates in a timely fashion, if at all.

We also could see an adverse impact on our ability to report clinical trial results, or interact with regulators, IRBs and ethics committees or other important agencies due to limitations in health authority employee resources or otherwise. Moreover, we rely on CROs and other third parties to assist us with clinical development activities, and we cannot guarantee that they will continue to perform their contractual duties in a timely and satisfactory manner as a result of the COVID-19 pandemic.

In addition, while we have not experienced significant disruption to drug or related component supply for our ongoing clinical trials, we could experience disruptions to our supply chain and operations due to the evolving effects of the continuing pandemic, including if our CMOs' manufacturing facilities and operations are adversely affected by labor and raw material shortages, turnover of qualified staff or financial difficulties of their owners or operators. Any associated delays in the manufacturing and supply of drug substance and drug product for our clinical trials could adversely affect our ability to conduct ongoing and future clinical trials of our product candidates. Our aldafermin drug product CMO has advised us that it could be required under orders of the U.S. government to allocate manufacturing capacity to the manufacture or distribution of COVID-19 vaccines. If any of our CMOs become subject to acts or orders of U.S. or foreign government entities to allocate manufacturing capacity to the manufacture or distribution of COVID-19 vaccines or medical supplies needed to treat COVID-19 patients, this could also delay our clinical trials, perhaps substantially, which could materially and adversely affect our business.

Finally, we cannot predict how the evolving effects of the COVID-19 pandemic may influence the future decisions of Merck to license any programs available to it under the Amended Collaboration Agreement. For additional information about risks and uncertainties related to the COVID-19 pandemic that may impact our business, financial condition and results of operations, see the section titled “Risk Factors” in Part II, Item 1A of this Quarterly Report on Form 10-Q.

Financial Operations Overview

Related Party Revenue

Our revenue to date has been generated primarily from recognition of license fees and R&D service funding pursuant to our collaboration with Merck. Merck is also a significant stockholder and, as such, collaboration revenue from Merck is referred to as related party revenue.

Since inception through June 30, 2021, Merck had paid us $541.6 million under the collaboration. Due to the nature of our collaboration with Merck and the timing of related revenue recognition, our revenue has fluctuated

from period to period in the past and we expect that it will continue to fluctuate in future periods, particularly given the amendment and restatement of the collaboration on June 30, 2021. As a result, we believe that period-to-period comparisons of our revenue may not be meaningful and should not be relied upon as being indicative of future performance.

We use the cost-based input method in accordance with Accounting Standards Codification 606, or ASC 606, to calculate the corresponding amount of revenue to recognize at each reporting period. In applying the cost-based input measure of revenue recognition, we measure actual costs incurred relative to budgeted costs to fulfill our performance obligation. We apply considerable judgment when we re-evaluate the estimate of expected costs to satisfy the performance obligation each reporting period and make adjustments for any significant changes. A significant change in the estimate of expected costs under the Amended Collaboration Agreement could have a material impact on revenue recognized (including the possible reversal of previously recognized revenue) at each reporting period.

Our related party revenue was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Related party revenue	$ 16,773	$ 19,755	$ 38,348	$ 44,119

Research and Development Expenses

R&D efforts include drug discovery research activities and development activities relating to our product candidates, such as manufacturing drug substance, drug product and other clinical trial materials, conducting preclinical studies and clinical trials and providing support for these operations. Our R&D expenses consist of both internal and external costs. Our internal costs include employee, consultant, facility and other R&D operating expenses. Our external costs include fees paid to CROs and other service providers in connection with our clinical trials and preclinical studies, third-party license fees and CMO costs related to manufacturing drug substance, drug product and other clinical trial materials.

Our R&D expenses related to the development of aldafermin, MK-3655, NGM621, NGM120, NGM707 and NGM438 (and prior to suspending these programs, NGM386, NGM395 and NGM217) consist primarily of:

- fees paid to our CROs in connection with our clinical trials and other related clinical trial fees, when applicable;
- costs related to acquiring and manufacturing drug substance, drug product and clinical trial materials, including continued testing, such as process validation and stability, of drug substance and drug product;
- costs related to toxicology testing and other research and preclinical related studies;
- salaries and related overhead expenses, which include stock-based compensation and benefits, for personnel in R&D functions;
- fees paid to consultants for R&D activities;
- R&D operating expenses, including facility costs and depreciation expenses; and
- costs related to compliance with regulatory requirements.

Our clinical development efforts are spread across multiple programs, only some of which remain within the scope of our collaboration with Merck. For the foreseeable future, we anticipate the majority of our financial resources, other than those received from Merck and dedicated to continuing collaboration activities under the Amended Collaboration Agreement, will be directed to activities required to advance our Phase 2b ALPINE 4 clinical trial of aldafermin and our trials of NGM120 and NGM707 and to initiate a clinical trial of NGM438.

Our R&D efforts are extensive and costly. While Merck has committed under the Amended Collaboration Agreement to provide up to $86.0 million in research funding for the four calendar quarters ending March 31, 2022 (with up to $51.0 million of such amount that may be used by us to advance certain of our wholly owned programs), after March 2022 and through the remaining two years of the research phase of the collaboration, Merck is committed to provide only up to $20.0 million in research funding for the ophthalmology- and CVM-related programs (other than NGM621) and to fund certain R&D costs related to NGM621, expected to be approximately $15.0 million, during the earlier of the remaining two years of the research phase after March 2022 or until Merck exercises, or decides not to exercise, its Merck license option with respect to NGM621. As a result, after March 2022, we will need to devote a substantial amount of our own financial resources to our development programs,

particularly with respect to our wholly owned programs and, to a lesser extent, with respect to our programs that are within the scope of the Amended Collaboration Agreement that we are required to fund. In addition, our funding requirements would increase for any programs that are within the scope of the continuing collaboration in the event Merck does not elect to license these programs, in the event Merck elects to terminate its license to any program it licenses or in the event we opt to co-develop any Merck-licensed programs. Accordingly, we will require significant additional capital in order to proceed with the development through to regulatory approval and commercialization of our current and potential future product candidates or we will need to enter into additional collaboration or license agreements in order to fund such development and commercialization. Neither may be possible and, as a result, we may be required to delay, scale back or discontinue development of such product candidates, which could have a material adverse effect on our business, operating results and prospects. In addition, our R&D expenses may exceed the funding caps set forth under the Amended Collaboration Agreement, as happened in the fiscal year ended December 31, 2020 under the Original Agreement, and is expected to occur in the fiscal year ending December 31, 2021, in which case our funding requirements will increase.

The successful development of our product candidates is highly uncertain. At this time, we cannot reasonably estimate the nature, timing or costs of the efforts that will be necessary to complete the remainder of the development of our product candidates. This is due to the numerous risks and uncertainties associated with developing medicines, including the uncertainty of:

- our ability to hire and retain key R&D personnel;
- manufacturing scale-up challenges, production shortages or other supply disruptions for clinical trial materials;
- the evolving effects of the COVID-19 pandemic on our employees, patients, clinical trial sites and our CROs, CMOs and other service providers;
- the timely and quality performance of our CROs, CMOs and other service providers;
- whether Merck will elect to license, or to terminate its license, to any of our programs within the scope of the continuing collaboration and the timing of such election or termination;
- prior to March 2022, the extent to which we exceed the funding caps provided in the Amended Collaboration Agreement;
- after March 2022, the amount of our financial resources that we will need to devote to our development programs and our obligations under the Amended Collaboration Agreement, and our ability to raise adequate additional capital to meet our requirements;
- the effect of products that may compete with our product candidates or other market developments;
- our ability to expand and enforce our intellectual property portfolio;
- the scope, rate of progress, results and expense of our ongoing, as well as any future, clinical trials and other R&D-related activities; and
- the impact and timing of any interactions with regulatory authorities.

A change in the outcome of any of the risks and uncertainties associated with the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the FDA or another health authority were to require us to conduct clinical trials beyond those that we currently anticipate will be required for the completion of clinical development of a product candidate, or if we experience significant delays in enrollment in any of our clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development. For additional discussion of the risks and uncertainties associated with our R&D efforts, see “Risk Factors—Risks Related to Our Business and Industry,” “—Risks Related to Our Dependence on Merck and Other Third Parties” and “—Risks Related to Regulatory Approvals” in Part II, Item 1A of this Quarterly Report on Form 10-Q.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation and benefits. Other significant costs include legal fees relating to patent and corporate matters, facility costs not otherwise included in R&D expenses and fees for accounting and other consulting services.

We anticipate that our general and administrative expenses will increase in the future to support our continued R&D activities. These increases will likely include increased costs related to the hiring of additional personnel, as well as fees paid to outside consultants, lawyers and accountants, among other expenses. Additionally, we anticipate continued increased costs associated with being a public company, including expenses

related to services associated with maintaining compliance with Nasdaq listing rules and related Securities and Exchange Commission, or SEC, requirements and costs related to insurance, investor relations and SOX 404 compliance. In addition, we may incur expenses associated with building a commercial organization in connection with, and prior to, potential future regulatory approval of our product candidates.

Results of Operations

Our results of operations were as follows (in thousands):

	Three Months Ended June 30,			Six Months Ended June 30,		
	2021	2020	Change	2021	2020	Change
Related party revenue	$ 16,773	$ 19,755	$ (2,982)	$ 38,348	$ 44,119	$ (5,771)
Operating expenses:						
Research and development	43,570	38,494	5,076	84,269	76,933	7,336
General and administrative	9,823	6,794	3,029	18,544	13,389	5,155
Total operating expenses	53,393	45,288	8,105	102,813	90,322	12,491
Loss from operations	(36,620)	(25,533)	(11,087)	(64,465)	(46,203)	(18,262)
Interest income, net	115	388	(273)	229	1,563	(1,334)
Other expense, net	(187)	(471)	284	—	(91)	91
Net loss	$ (36,692)	$ (25,616)	$ (11,076)	$ (64,236)	$ (44,731)	$ (19,505)

Related Party Revenue from Merck

Revenue decreased $3.0 million and $5.8 million in the three and six months ended June 30, 2021 compared to the same periods in 2020, respectively. As of March 31, 2021, the Company had a contract asset of $4.6 million under the prior two-year extension of the research phase which, under the Amended Collaboration Agreement, was no longer billable to Merck at any point and therefore was recorded as a reduction in revenue on June 30, 2021.

Research and Development Expenses

Our R&D expenses by program were as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
External R&D expenses:				
Aldafermin (FGF19 analog)	$ 9,474	$ 11,286	$ 19,072	$ 25,437
NGM621 (C3 inhibitor)	5,491	2,597	9,177	3,895
NGM120 (GFRAL antagonist)	2,235	1,529	3,596	2,894
NGM707 (Anti-ILT2/ILT4 dual antagonist)	1,056	1,843	2,221	2,603
NGM438 (LAIR1 antagonist)	956	345	2,471	387
MK-3655 (FGFR1c/KLB agonist)	574	403	609	532
NGM395 (GDF15 analog)	302	1,131	537	1,607
Other external R&D expenses	688	1,975	1,396	3,910
Total external R&D expenses	20,776	21,109	39,079	41,265
Personnel-related expenses	14,192	10,775	28,461	21,593
Internal and unallocated R&D expenses(1)	8,602	6,610	16,729	14,075
Total R&D expenses	$ 43,570	$ 38,494	$ 84,269	$ 76,933

(1) Internal and unallocated research and development expenses consist primarily of research supplies and consulting fees, which we deploy across multiple research and development programs.

R&D expenses increased $5.1 million and $7.3 million in the three and six months ended June 30, 2021 compared to the same periods in 2020, respectively, primarily due to increases in external expenses driven by our ongoing clinical trials of NGM621 and NGM120 and our preclinical studies of NGM438, and increases in personnel-related and internal and unallocated R&D expenses. These increases were partially offset by decreases in expenses for our manufacturing activities and our clinical trials of aldafermin and in external expenses related to our other development programs.

We expect R&D expenses for the remainder of 2021 to increase compared to 2020 due to our ongoing activities, particularly as we advance our clinical development of NGM621 and our oncology programs. We are continuing to advance Phase 2b development of aldafermin for the treatment of patients with compensated NASH cirrhosis (F4 liver fibrosis). Resources previously intended for a Phase 3 F2/F3 NASH development program have been shifted toward advancing our other programs. In addition, we may be required to develop and implement additional clinical study policies and procedures to mitigate the evolving effects of the COVID-19 pandemic, which could significantly increase our R&D expenses.

General and Administrative Expenses

General and administrative expenses increased $3.0 million and $5.2 million in the three and six months ended June 30, 2021 compared to the same periods in 2020, respectively, primarily due to an increase in personnel-related expenses due to increased headcount and an increase in stock-based compensation expense primarily due to an increase in the average grant date fair value of stock options granted in the six months ended June 30, 2021.

We anticipate general and administrative expenses for the remainder of 2021 to increase compared to 2020 due to an increase in compensation-related expenses driven by higher headcount and other expenses related to the expansion and support of our business including expenses related to SOX 404 compliance.

Interest Income

Interest income decreased in the three and six months ended June 30, 2021 compared to the same periods in 2020 primarily due to the decrease in market interest rates.

Liquidity and Capital Resources

Funding Requirements

We have incurred net losses every year since inception. We have spent, and expect to continue to spend, significant resources to fund R&D of, and seek regulatory approvals for, our product candidates. These activities require us to incur substantial costs related to research, development, manufacturing, preclinical studies, clinical trial and related activities, as well as to cover other expenses related to our ongoing operations. Our collaboration with Merck under the Original Agreement has provided us with substantial financial support; however, under the narrower scope of the Amended Collaboration Agreement, after March 2022 the level of research funding from Merck will be substantially lower on an annual and overall basis than the research funding provided by Merck prior to that date, as described below. In this regard, after March 2022, we will need to devote a substantial amount of our own financial resources to our development programs, particularly with respect to our wholly owned programs and, to a lesser extent, with respect to our programs that are within the scope of the continuing collaboration under the Amended Collaboration Agreement that we are required to fund, and our failure to allocate funding to meet such requirements may be deemed a breach of the Amended Collaboration Agreement. In addition, our funding requirements would increase for any programs that are within the scope of the continuing collaboration in the event Merck does not elect to license these programs, in the event Merck elects to terminate its license to any program it licenses or in the event we opt to co-develop any Merck-licensed programs. Accordingly, we will require significant additional capital in order to proceed with the development through to regulatory approval and commercialization of our current and potential future product candidates or we will need to enter into additional collaboration or license agreements in order to fund such development and commercialization. Neither may be possible and, as a result, we may be required to delay, scale back or discontinue development of such product candidates, which could have a material adverse effect on our business, operating results and prospects. In addition, our R&D expenses may exceed the funding caps set forth under the Amended Collaboration Agreement, as happened in the fiscal year ended December 31, 2020 under the Original Agreement, and is expected to occur in the fiscal year ending December 31, 2021, in which case, our funding requirements will increase. See “Overview of Our Business – Merck Collaboration Update” above. As a result, we expect to incur significant and increasing operating losses. We have no products approved for commercial sale, have not generated any revenue from product sales to date and we are not and may never be profitable. We have incurred losses in each year since commencing operations. As of

June 30, 2021, we had an accumulated deficit of $362.9 million and we expect our accumulated deficit will increase significantly over time. The size of our future net losses will depend, in part, on the rate of future growth of our expenses, the amount of revenue generated from Merck under the Amended Collaboration Agreement and our ability to generate revenue outside of the Merck collaboration, particularly after March 2022.

Sources of Liquidity

Merck Collaboration

The revenue we receive under the Amended Collaboration Agreement with Merck is our only source of revenue. As described in greater detail above, including under "Overview of Our Business – Merck Collaboration Update," under the Amended Collaboration Agreement, Merck has committed to provide us with up to $86.0 million in research funding for the four calendar quarters ending March 31, 2022 (with up to $51.0 million of such amount that may be used by us to advance certain of our wholly owned programs). However, after March 2022 and through the remaining two years of the research phase of the collaboration, Merck is committed to provide only up to $20.0 million in research funding for the ophthalmology- and CVM-related programs and to fund the R&D costs related to NGM621, including our CATALINA clinical trial, subject to certain limitations.

Other Sources of Liquidity

In June 2020, we entered into the Sales Agreement with Jefferies relating to the sale of shares of our common stock. In accordance with the terms of the Sales Agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to $150.0 million from time to time through Jefferies, acting as our sales agent. During the six months ended June 30, 2021, no shares of our common stock were sold pursuant to the Sales Agreement. As of June 30, 2021, $127.4 million of our common stock remained available to be sold under the Sales Agreement, subject to conditions specified in the Sales Agreement.

In January 2021, we sold 5,324,074 shares of common stock (inclusive of shares sold pursuant to the full exercise of the option to purchase additional shares granted to the underwriters in connection with the offering) through an underwritten public offering at a price to the public of $27.00 per share for aggregate net proceeds to the Company of $134.6 million, or the follow-on offering.

As of June 30, 2021, we had cash and cash equivalents of $99.4 million, short-term marketable securities of $291.1 million, working capital of $358.1 million and an accumulated deficit of $362.9 million.

We believe that our existing cash, cash equivalents and short-term marketable securities will be sufficient to fund our operations for at least the next twelve months from the date our interim condensed financial statements are filed. We have based this estimate on assumptions that may prove to be wrong and we could utilize our available capital resources sooner than we currently expect. In addition, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially as a result of a number of factors, including the factors discussed under "Risk Factors" in Part II, Item 1A of this Quarterly Report on Form 10-Q.

We plan to finance our future cash needs through public or private equity or debt offerings, including under the Sales Agreement, government or other third-party funding, product collaborations, strategic alliances, licensing arrangements or a combination of these. Additional capital may not be available in sufficient amounts, on reasonable terms or when we need it, if at all, and our ability to raise additional capital may be adversely impacted by worsening global economic conditions and the disruptions to, and volatility in, the credit and financial markets in the United States and worldwide resulting from, among other things, the evolving effects of the COVID-19 pandemic. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Debt financing, if available, may involve restrictive covenants. Any debt financing or additional equity that we raise may contain terms that are not favorable to us or our stockholders. Furthermore, any securities that we may issue may have rights senior to those of our common stock and could contain covenants or protective rights that would lead to restrictions on our operations and potentially impair our competitiveness, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. If we are unable to raise adequate additional capital, we may be prevented from pursuing development and commercialization efforts, which will have a material adverse effect on our business, operating results and prospects.

Cash Flow Activity

The following table summarizes our cash flow activity for the periods indicated (in thousands):

	Six Months Ended June 30,	
	2021	2020
Net cash provided by (used in):		
Operating activities	(45,535)	(38,291)
Investing activities	(145,880)	34,992
Financing activities	143,801	7,018
Net (decrease) increase in cash and cash equivalents	$ (47,614)	$ 3,719

Operating Activities

In the six months ended June 30, 2021 net cash used in operating activities was $45.5 million, which consisted of a net loss of $64.2 million, adjusted for non-cash charges of $22.6 million and a change in operating assets and liabilities of $3.9 million. The non-cash charges consisted primarily of stock-based compensation expense of $13.3 million, a decrease in related party contract assets due to the Amended Collaboration Agreement with Merck of $4.6 million and depreciation expense of $3.1 million. The change in operating assets and liabilities was mainly driven by increases in contract liabilities of $5.0 million, increases in prepaid expenses and other current assets of $3.2 million and the related party receivable of $3.3 million, partially offset by decreases in related party contract assets of $1.5 million and accounts payable of $4.5 million.

In the six months ended June 30, 2020 cash used in operating activities was $38.3 million, which consisted of a net loss of $44.7 million, adjusted for non-cash charges of $10.8 million and cash used through changes in operating assets and liabilities of $4.4 million. The non-cash charges consisted primarily of stock-based compensation expense of $7.4 million and depreciation expense of $3.4 million. The change in operating assets and liabilities was mainly driven by an increase in prepaid expenses and other assets of $3.1 million and an increase in accrued expenses of $7.6 million. These increases were partially offset by a decrease in related party receivable from our Merck collaboration of $2.1 million, a decrease in accounts payable of $6.9 million, a decrease in deferred rent of $1.4 million and a decrease in deferred revenue of $2.7 million primarily attributable to the timing of advance payments from Merck related to the reimbursement of costs associated with R&D activities.

Investing Activities

In the six months ended June 30, 2021 cash used in investing activities was $145.9 million, which consisted of purchases of marketable securities of $194.5 million primarily from the net proceeds of the follow-on offering, partially offset by $50.0 million in net proceeds on maturity of marketable securities. In the six months ended June 30, 2020 cash provided by investing activities was $35.0 million, which consisted of $65.8 million in net proceeds on maturity of marketable securities, partially offset by purchases of marketable securities of $29.4 million and purchases of property and equipment of $1.4 million.

Financing Activities

In the six months ended June 30, 2021 cash provided by financing activities was $143.8 million, which consisted of net proceeds from the follow-on offering of $134.6 million and proceeds from employee equity incentive plans of $7.8 million. In the six months ended June 30, 2020 cash provided by financing activities was $7.0 million, which primarily consisted of proceeds from employee equity incentive plans.

Off-Balance Sheet Arrangements

We currently have not entered into and do not have any relationships with unconsolidated entities or financial collaborations, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purpose.

Contractual Obligations

During the six months ended June 30, 2021, there were no material changes to our contractual obligations as set forth in Part II, Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the year ended December 31, 2020.

Critical Accounting Policies and Estimates

Our management’s discussion and analysis of our financial condition and results of operations is based on our condensed consolidated financial statements, which we have prepared in accordance with U.S. generally accepted accounting principles. The preparation of our condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of our condensed consolidated financial statements, as well as revenue and expenses during the reported periods. We evaluate these estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from these estimates under different assumptions or conditions. We believe that there have been no significant changes in our critical accounting policies and estimates disclosed in our Annual Report on Form 10-K for the year ended December 31, 2020.

Newly Issued Accounting Pronouncements

Except as described in Note 2 to the condensed consolidated financial statements under the headings “Recently Adopted Accounting Pronouncements” and “Recent Accounting Pronouncements Not Yet Adopted,” there have been no new accounting pronouncements or changes to accounting pronouncements during the six months ended June 30, 2021, as compared to the recent accounting pronouncements described in our audited consolidated financial statements and notes for the year ended December 31, 2020, included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2020, that are of significance or potential significance to us.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

During the six months ended June 30, 2021, there were no material changes to our market risk disclosures as set forth in Part II, Item 7A “Quantitative and Qualitative Disclosures About Market Risk” in our Annual Report on Form 10-K for the year ended December 31, 2020.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

As of June 30, 2021, management, with the participation of our Chief Executive Officer and Chief Financial Officer, performed an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to our management, including the Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosures.

Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objective and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of June 30, 2021, the design and operation of our disclosure controls and procedures were effective at a reasonable assurance level.

Changes in Internal Control over Financial Reporting

During the quarter ended June 30, 2021, there have been no changes to our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

We are not currently a party to any material litigation or other material legal proceedings.

Item 1A. Risk Factors.

Our business involves significant risks, some of which are described below. You should carefully consider the following risks, as well as the other information in this Quarterly Report on Form 10-Q, including our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The occurrence of any of the events or developments described below could have a material adverse effect on our business, results of operations, financial condition, prospects and stock price. In such an event, the market price of our common stock could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations and the market price of our common stock.

Summary Risk Factors

Below is a summary of material factors that make an investment in our common stock speculative or risky. Importantly, this summary does not address all of the risks and uncertainties that we face. Additional discussion of the risks and uncertainties summarized in this risk factor summary, as well as other risks and uncertainties that we face, can be found immediately following this risk factor summary. The below summary is qualified in its entirety by that more complete discussion of such risks and uncertainties. You should carefully consider the risks and uncertainties described below as part of your evaluation of an investment in our common stock:

- our most advanced product candidates, including NGM621, a humanized Immunoglobulin 1 monoclonal antibody inhibiting complement C3 administered via intravitreal, or IVT, injection in patients with geographic atrophy, or GA, NGM120, our antagonist antibody that binds glial cell-derived neurotrophic factor receptor alpha-like, or GFRAL, and inhibits growth differentiation factor 15, or GDF15, signaling, for the potential treatment of cancer and cancer-related cachexia and aldafermin, our engineered analog of human hormone fibroblast growth factor 19, or FGF19, that is administered through a once-daily subcutaneous injection in patients with compensated non-alcoholic steatohepatitis, or NASH, cirrhosis (liver fibrosis stage 4, or F4), are still only in Phase 2 development, may fail to demonstrate safety and efficacy in ongoing and future clinical trials, may never achieve regulatory approval and may not be able to be successfully commercialized due to competition or other factors;
- similarly, clinical trials of our other product candidates, including the ongoing trial of NGM707, our dual antagonist antibody that is designed to inhibit Immunoglobulin-like transcript 2, or ILT2, and Immunoglobulin-like transcript 4, or ILT4, for the potential treatment of patients with advanced solid tumors, may fail to produce positive results or to demonstrate safety and efficacy to the satisfaction of health authorities;
- aldafermin and MK-3655, an agonistic antibody discovered by us that selectively activates fibroblast growth factor receptor 1c-beta-klotho, or FGFR1c/KLB, which regulates insulin sensitivity, blood glucose and liver fat and is administered every four weeks through a subcutaneous injection, are being developed for the treatment of NASH, an indication for which there are no approved products, which makes it difficult to predict the timing, cost and potential success of their clinical development and regulatory approval for the treatment of NASH;
- we have incurred net losses every year since our inception, we have no source of product revenue, we expect to continue to incur significant and increasing operating losses and we may never become profitable;
- we currently depend on our collaboration with Merck Sharp & Dohme Corp., or Merck, for revenue and that collaboration, the terms of which were recently modified, involves numerous risks, any of which could materially and adversely affect our business and financial condition, and in the future we may depend both on our collaboration with Merck and collaborations with additional third parties for the development and commercialization of our product candidates;
- after March 2022, we will need to devote a substantial amount of our own financial resources to our development programs and in order to complete the development and commercialization of our current and potential future product candidates, we will require substantial additional capital which may not be available

to us on acceptable terms, or at all, and as a result, we may be required to delay, scale back or discontinue development of such product candidates;

- we will need to successfully complete rigorous preclinical and clinical testing of our product candidates before we can seek regulatory approval, which could delay or prevent commercialization of our product candidates;
- we may not successfully identify new product candidates to expand our development pipeline;
- the process of manufacturing our biologic product candidates is complex, highly regulated and subject to many manufacturing risks, including difficulties in supply chain, including procuring raw materials and components and in production, particularly in scaling up and validating initial production and ensuring the avoidance of contamination, any of which could substantially increase our costs and limit supply of our product candidates and any future products needed for clinical trials and commercialization;
- the regulatory approval processes of the U.S. Food and Drug Administration, or FDA, and comparable foreign health authorities are lengthy, time-consuming and inherently unpredictable;
- our future success depends in part on our ability to attract and retain highly skilled employees, including members of our current senior management team, especially Dr. Jin-Long Chen;
- the COVID-19 pandemic continues to adversely impact our business and could materially and adversely affect our operations, as well as the businesses or operations of our manufacturers, clinical research organizations or other third parties with whom we conduct business;
- we face substantial competition, which may result in others discovering, developing or commercializing products before, or more successfully than, us;
- our success depends in significant part upon our ability to obtain and maintain intellectual property protection for our products and technologies;
- our principal stockholders, including entities affiliated with The Column Group, Merck and our management, own a substantial percentage of our stock and will be able to exert significant control over matters subject to stockholder approval;
- we may not be able to obtain and maintain the relationships with third parties that are necessary to develop, manufacture and commercialize some or all of our product candidates;
- we or third parties we rely on could experience a cybersecurity incident that could harm our business; and
- the market price of our common stock has been and may continue to be volatile, and you could lose all or part of your investment.

Risks Related to Our Financial Condition and Capital Needs

We have incurred net losses every year since our inception and have no source of product revenue. We expect to continue to incur significant and increasing operating losses and may never become profitable.

We have no products approved for commercial sale and have not generated any revenue from product sales to date, and we expect to continue to incur significant research and development and other expenses related to our ongoing operations. As a result, we are not profitable and have incurred losses in each year since commencing operations. Our net losses were $102.5 million, $42.8 million and $0.5 million for the years ended December 31, 2020, 2019 and 2018, respectively. As of June 30, 2021, we had an accumulated deficit of $362.9 million.

We have spent, and expect to continue to spend, significant resources to fund research and development of, and seek regulatory approvals for, our product candidates. We expect to incur substantial and increasing operating losses over the next several years as our research, development, manufacturing, preclinical studies, clinical trial and related activities increase. Our collaboration with Merck has to date provided us with substantial financial support; however, after March 2022, the funding we receive from Merck under our continuing collaboration will be substantially lower on an annual and overall basis than the research funding provided by Merck prior to that date due to the narrower scope of our amended and restated research collaboration, product development and license agreement we entered into with Merck on June 30, 2021, or the Amended Collaboration Agreement, which amends and restates the research collaboration, product development and license agreement that we originally entered into with Merck in February 2015, which, together with amendments made prior to entering in the Amended Collaboration Agreement, we refer to as the Original Agreement. In this regard, after March 2022, and through the

remaining two years of the research phase of the continuing collaboration, Merck is committed to provide only up to $20.0 million in research funding for the ophthalmology- and cardiovascular or metabolic, or CVM,-related programs subject to the continuing collaboration (other than NGM621) and to fund the research and development, or R&D, costs related to NGM621 during the earlier of the remaining two years of the research phase after March 2022 or until Merck exercises, or decides not to exercise, its license option with respect to NGM621, subject to certain limitations. As a result, after March 2022, we will need to devote a substantial amount of our own financial resources to our development programs, particularly with respect to our wholly owned programs and, to a lesser extent, with respect to our programs that are within the scope of the continuing collaboration under the Amended Collaboration Agreement that we are required to fund (and our failure to allocate funding to meet such requirements may be deemed a breach of the Amended Collaboration Agreement). In addition, our funding requirements would increase for any programs that are within the scope of the continuing collaboration in the event Merck does not elect to license these programs, in the event Merck elects to terminate its license to any program it licenses or in the event we opt to co-develop any Merck-licensed programs. Moreover, our R&D expenses may exceed the funding caps set forth under the Amended Collaboration Agreement, as happened in the fiscal year ended December 31, 2020 under the Original Agreement, and is expected to occur in the fiscal year ending December 31, 2021, in which case, our funding requirements will increase. As a result of the foregoing, our expenses and accumulated deficit will also increase significantly in future periods. We may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business, including those resulting from the evolving effects of the COVID-19 pandemic. The size of our future net losses will depend, in part, on the rate of future growth of our expenses, the amount of revenue generated from Merck under the Amended Collaboration Agreement and our ability to generate revenue outside of the Merck collaboration, particularly after March 2022. Our prior losses and expected future losses have had and will continue to have an adverse effect on our stockholders' equity and working capital.

In addition, we will not be able to generate product revenue unless and until one of our product candidates successfully completes clinical trials, receives regulatory approval and is successfully commercialized. As our product candidates are in Phase 2 trials or in earlier stages of development, we do not expect to receive product revenue from our product candidates for a number of years, if ever. For example, in May 2021, we announced topline results from our Phase 2b ALPINE 2/3 trial evaluating aldafermin in patients with NASH and liver fibrosis stage 2 or 3, or F2 or F3. The study did not meet its primary endpoint, and we decided to shift resources that had previously been intended for a Phase 3 F2/F3 NASH development program toward advancing our other programs. Our ability to generate future product revenue from our current or future product candidates also depends on a number of additional factors, including our or our current collaborator's and potential future collaborators' ability to:

- successfully complete research and clinical development of current and future product candidates;
- establish and maintain supply and manufacturing relationships with third parties, and ensure adequate, scaled up and legally compliant manufacturing of bulk drug substances and drug products to maintain sufficient supply;
- launch and commercialize any product candidates for which we obtain marketing approval, if any, and, if launched independently by us without a collaborator, successfully establish a sales force and marketing and distribution infrastructure;
- demonstrate the necessary safety data (and, if accelerated approval is obtained, verify the clinical benefit) post-approval to ensure continued regulatory approval;
- obtain coverage and adequate product reimbursement from third-party payors, including government payors, for any approved products;
- achieve market acceptance for any approved products;
- establish, maintain, protect and enforce our intellectual property rights; and
- attract, hire and retain qualified personnel.

Because of the numerous risks and uncertainties associated with pharmaceutical product development, including that our product candidates may not advance through development or be approved for commercial sale, we are unable to predict if or when we will generate product revenue or achieve or maintain profitability. Even if we successfully complete development and regulatory processes, we anticipate incurring significant costs associated with launching and commercializing any products. If we fail to become profitable or do not sustain profitability on a continuing basis, we may be unable to continue our operations at planned levels and be forced to reduce or cease our operations.

All of our revenue for recent periods has been received from a single collaboration partner.

In recent years, all of our revenue has been from our collaboration partner, Merck. Other than our Amended Collaboration Agreement with Merck, we currently have no agreements that could provide us with material, ongoing future revenue and we may never enter into any such agreements. As described under "Overview of Our Business –Merck Collaboration Update" in Part I, Item 2 of this Quarterly Report on Form 10-Q and elsewhere in this "Risk Factors" section, after March 2022, the funding we receive from Merck under the Amended Collaboration Agreement will be substantially lower on an annual and overall basis than the research funding provided by Merck prior to that date. As a result, after March 2022, we will need to devote a substantial amount of our own financial resources to our development programs, particularly with respect to our wholly owned programs, and, to a lesser extent, with respect to our programs that are within the scope of the continuing collaboration under the Amended Collaboration Agreement and that we are required to fund and our failure to allocate funding to meet such requirements may be deemed a breach of the Amended Collaboration Agreement. In addition, our funding requirements would increase for any programs that are within the scope of the continuing collaboration in the event Merck does not elect to license these programs, in the event Merck elects to terminate its license to any program it licenses or in the event we opt to co-develop any Merck-licensed programs. Accordingly, we will require significant additional capital in order to proceed with development through regulatory approval and commercialization of our current and potential future product candidates or we will need to enter into additional collaboration or license agreements in order to fund such development and commercialization. Neither may be possible and as a result, we may be required to delay, scale back or discontinue development of such product candidates, which could have a material adverse effect on our business, operating results and prospects. In addition, our R&D expenses may exceed the funding caps set forth under the Amended Collaboration Agreement, as happened in the fiscal year ended December 31, 2020 under the Original Agreement, and is expected to occur in the fiscal year ending December 31, 2021, in which case, our funding requirements will increase. For more information, see "Risks Related to Our Dependence on Merck and Other Third Parties" below.

After March 2022, we will need to devote a substantial amount of our own financial resources to our development programs and, in order to complete the development and commercialization of our current and potential future product candidates, we will require substantial additional capital which may not be available to us on acceptable terms, or at all, and as a result, we may be required to delay, scale back or discontinue development of such product candidates.

As a research and development company, our operations have consumed substantial amounts of cash since inception and we will require substantial additional capital to finance our operations and pursue our strategy. In this regard, we do not have any committed external source of funds, other than pursuant to the current terms of our collaboration with Merck, which is limited in scope and duration, and may be unilaterally terminated by Merck under certain circumstances. In addition, as described in more detail under "Risks Related to Our Dependence on Merck and Other Third Parties" below, under the terms of the Amended Collaboration Agreement, the funding we receive from Merck under our continuing collaboration after March 2022 will be substantially lower on an annual and overall basis than the research funding provided by Merck prior to that date. As a result, after March 2022, we will need to devote a substantial amount of our own financial resources to our development programs, particularly with respect to our wholly owned programs and, to a lesser extent, with respect to our programs that are within the scope of the continuing collaboration under the Amended Collaboration Agreement that we are required to fund (and our failure to allocate funding to meet such requirements may be deemed a breach of the Amended Collaboration Agreement). In addition, our funding requirements would increase for any programs that are within the scope of the continuing collaboration in the event Merck does not elect to license these programs, in the event Merck elects to terminate its license to any program it licenses or in the event we opt to co-develop any Merck-licensed programs. Moreover, we may be required to develop and implement additional clinical study policies and procedures to mitigate the evolving effects of the COVID-19 pandemic, which could significantly increase our research and development expenses.

We believe that our existing cash, cash equivalents and short-term marketable securities will be sufficient to fund our operations for at least the next twelve months. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. In addition, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially as a result of a number of factors, including the factors discussed elsewhere in this "Risk Factors" section. Our future funding requirements, both short- and long-term, will depend on many factors, including:

- the initiation, progress, timing, delays, costs and results of preclinical studies and clinical trials for our current and future product candidates;

- whether Merck exercises its option to license product candidates upon completion of human proof-of-concept studies or at the earlier license option point as specified in the Amended Collaboration Agreement for each such candidate;
- whether Merck terminates the research phase of the collaboration under pre-specified circumstances set forth in the Amended Collaboration Agreement or terminates a program that it has licensed (such as Merck's termination of its license for our growth differentiation factor 15, GDF15, agonist program, including the NGM395 and NGM386 product candidates);
- prior to March 2022, the extent to which we exceed the funding caps provided in the Amended Collaboration Agreement;
- after March 2022, the amount of our financial resources that we will need to devote to our development programs and our obligations under the Amended Collaboration Agreement, and our ability to raise adequate additional capital to meet our requirements;
- the outcome, timing and cost of seeking and obtaining regulatory approvals from the FDA and comparable foreign health authorities, including the potential for such authorities to require that we perform more studies than those that we currently expect or to change their requirements on studies that had previously been agreed to;
- the cost to establish, maintain, expand, enforce and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make, or that we may receive, in connection with licensing, preparing, filing, prosecuting, defending and enforcing any patents or other intellectual property rights;
- the effect of products that may compete with our product candidates or other market developments;
- market acceptance of any approved product candidates, including product pricing and product reimbursement by third-party payors;
- the cost of acquiring, licensing or investing in additional businesses, products, product candidates and technologies;
- the cost and timing of selecting, auditing and potentially validating a manufacturing site for commercial-scale manufacturing;
- the cost of establishing sales, marketing and distribution capabilities for our product candidates for which we may receive regulatory approval and that we determine to commercialize ourselves or in collaboration with partners; and
- the extent to which any of the foregoing costs are the responsibility of Merck.

We plan to finance our future cash needs through public or private equity or debt offerings, including under the Open Market Sale Agreement℠, or the Sales Agreement, we entered into with Jefferies LLC in June 2020, government or other third-party funding, product collaborations, strategic alliances, licensing arrangements or a combination of these. Additional capital may not be available in sufficient amounts, on reasonable terms or when we need it, if at all, and our ability to raise additional capital may be adversely impacted by worsening global economic conditions and the disruptions to, and volatility in, the credit and financial markets in the United States and worldwide resulting from, among other things, the evolving effects of the COVID-19 pandemic. If we are unable to raise adequate additional capital, we may be prevented from pursuing development and commercialization efforts, which will have a material adverse effect on our business, operating results and prospects.

Raising additional capital may cause dilution to our existing stockholders, lead to restrictions on our operations or require us to relinquish rights to our product candidates or intellectual property.

If we raise additional funds by issuing equity securities, as we did most recently in January 2021, our stockholders may experience dilution. Debt financing, if available, may involve restrictive covenants. Any debt financing or additional equity that we raise may contain terms that are not favorable to us or our stockholders. Furthermore, any securities that we may issue may have rights senior to those of our common stock and could contain covenants or protective rights that would lead to restrictions on our operations and potentially impair our competitiveness, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. If adequate funds are not available when we need them, we may need to:

- significantly delay, scale back or discontinue research and discovery efforts and the development or commercialization of any product candidates, or cease all operations;

- seek strategic alliances for research and development programs when we otherwise would not, at an earlier stage than we would otherwise desire or on terms less favorable than might otherwise be available; or
- enter into product collaborations that would generally require us to relinquish, or license on potentially unfavorable terms, our rights to intellectual property, product candidates or products that we otherwise would develop or seek to commercialize ourselves, and we may not be able to enter into such agreements on acceptable terms, if at all.

Our ability to use net operating loss carryforwards to offset taxable income could be limited.

We plan to use our current year operating losses to offset taxable income from any revenue generated from operations, including corporate collaborations. To the extent that our taxable income exceeds any current year operating losses, we plan to use our net operating loss carryforwards to offset income that would otherwise be taxable. Our net operating loss carryforwards generated in tax years ending on or prior to December 31, 2017 are only permitted to be carried forward for 20 years under applicable U.S. tax law. Under the Tax Cuts and JOBS Act, or the 2017 Tax Act, as modified by the Coronavirus Aid, Relief and Economic Security Act, or the CARES Act, our federal net operating losses generated in tax years beginning after December 31, 2017 may be carried forward indefinitely, but the ability to deduct such federal net operating losses generated in tax years beginning after December 31, 2020 is limited to 80% of taxable income. It is uncertain if and to what extent various states will conform to the 2017 Tax Act or the CARES Act.

In addition, under Section 382 of the U.S. Internal Revenue Code of 1986, as amended, or the Code, and corresponding provisions of state law, if we experience an “ownership change,” generally defined as a greater than 50% change, by value, in equity ownership over a three-year period, our ability to use our pre-change net operating loss carryforwards to offset our post-change income may be limited. Due to our initial public offering, or IPO, and other shifts in our stock ownership, we have experienced ownership changes in the past and may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which are outside our control. As a result, our use of federal net operating loss carryforwards could be limited. State net operating loss carryforwards may be similarly limited. In addition, at the state level, there may be periods during which the use of net operating losses is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For example, California recently imposed limits on the usability of California net operating loss carryforwards and certain tax credits to offset California taxable income or California tax liabilities in tax years beginning after 2019 and before 2023. Any such limitations may result in greater tax liabilities than we would incur in the absence of such limitations and any increased liabilities could adversely affect our business, results of operations, financial position and cash flows.

Risks Related to Our Dependence on Merck and Other Third Parties

We depend on our collaboration with Merck and may depend in the future on collaborations with additional third parties for the development and commercialization of our product candidates. If those collaborations are not successful, we may not be able to capitalize on the market potential of our product candidates.

As described in more detail under “Overview of Our Business – Merck Collaboration Update” in Part I, Item 2 of this Quarterly Report on Form 10-Q and elsewhere in this “Risk Factors” section, our continuing Merck collaboration involves a complex allocation of rights, provides for certain research and development funding and, for products for which Merck exercises its license option, if any, provides us with either milestone payments based on the achievement of specified clinical development, regulatory and commercial milestones and royalty-based revenue if certain product candidates are successfully commercialized or a cost and profit sharing arrangement with the possibility that we would provide sales representatives to co-detail the product candidates that Merck elects to advance in the United States. Under the Amended Collaboration Agreement, the research phase of the collaboration continues generally through March 2024, with possible extensions for each of the various programs to allow us or Merck to complete ongoing development. In addition, the level of research funding we expect to receive from Merck after March 2022 will be substantially lower on an annual and overall basis than the research funding provided by Merck prior to that date. In addition, we do not know whether Merck will exercise its option to license additional product candidates or whether Merck will terminate its license to a licensed program under the terms of the Amended Collaboration Agreement or otherwise. See also the risk factor titled “Our collaboration with Merck involves numerous risks, any of which could materially and adversely affect our business and financial condition” below.

We may seek other third-party collaborators for the development and commercialization of any product candidates that are not within the scope of the continuing collaboration with Merck. If we enter into any such arrangements with any third parties, we will likely have limited control over the amount and timing of resources that

our collaborators dedicate to the development or commercialization of our product candidates. Our ability to generate revenue from these arrangements will depend on each of our collaborators' abilities to successfully perform the functions assigned to them in such arrangement.

- Collaborations involving our product candidates, including our collaboration with Merck, pose risks to us, including the following:
- Collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations. For example, under the terms of the continuing collaboration with Merck, if Merck exercises its option to acquire an exclusive license for a product candidate that is within the scope of the continuing collaboration, our ability to influence the resources Merck devotes to such product candidate are substantially reduced until such time, if any, that we exercise our right to participate in a cost and profit-sharing arrangement. Even after we exercise that right to participate in a cost and profit-sharing arrangement, our ability to influence Merck will be limited.
- Collaborators might opt not to pursue development and commercialization of our product candidates or not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborator's strategic focus or available funding or external factors, such as an acquisition that diverts resources or creates competing priorities. For example, in June 2021, we and Merck entered into the Amended Collaboration Agreement that covers a narrower scope than contemplated in the Original Agreement, which scope is focused primarily on ophthalmology- and CVM-related therapeutic areas. In addition, under the terms of the Amended Collaboration Agreement, it is possible for Merck to unilaterally terminate the MK-3655 program and any other program (whether or not we have exercised our cost and profit sharing option) upon prior written notice, such as it did for NGM386 and NGM395, without triggering a termination of the remainder of the Amended Collaboration Agreement. Moreover, Merck might also opt not to designate any collaboration product candidates for further development during the tail period following the end of the research phase or exercise any of its options to acquire a license to a product candidate.
- Collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing.
- Collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our medicines or product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours.
- A collaborator with marketing and distribution rights might not commit sufficient resources to the marketing and distribution of our product candidates.
- Collaborators might not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our proprietary information or expose us to potential litigation.
- Disputes may arise between the collaborators and us that result in the delay or termination of the research, development or commercialization of our medicines or product candidates or that result in costly litigation or arbitration that diverts management attention and resources.
- We may lose certain valuable rights under circumstances identified in our collaborations, including, in the case of our collaboration with Merck, if we undergo a change in control.
- Collaborations might be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates.
- Collaboration agreements might not lead to development or commercialization of product candidates in the most efficient manner, or at all. If a present or future collaborator of ours were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program under such collaboration could be delayed, diminished or terminated.

Our collaboration with Merck involves numerous risks, any of which could materially and adversely affect our business and financial condition.

In addition to those risks related to our continuing collaboration with Merck under the Amended Collaboration Agreement described elsewhere in this ''Risk Factors'' section, in the event that Merck decides to take over any designated product candidates for development during any tail period, we could be subject to disputes with Merck with respect to their obligation to use commercially reasonable efforts with respect to such development, which could delay or preclude the further development of the affected product candidate, and we could otherwise be

subject to disputes with Merck over the scope of the parties' respective rights under the Amended Collaboration Agreement.

In addition, under the Amended Collaboration Agreement, Merck has the unilateral right to terminate all or part of the agreement at certain times and under certain circumstances. Merck also may unilaterally terminate its research funding for programs within the scope of the continuing collaboration if we are acquired by a third party or in the event of an uncured material breach by us.

Subject to certain limitations, Merck may partially terminate the Amended Collaboration Agreement for convenience as it relates to MK-3655 or any future licensed program. For example, under the Original Agreement, Merck terminated its license to our GDF15 agonist program, including NGM395 and NGM386, in May 2019. Merck may also unilaterally terminate the agreement as it relates to its rights to research and develop small molecule compounds. It may also unilaterally terminate the agreement with respect to a specific licensed program in the event of an uncured material breach by us. If Merck terminates a program as a result of our uncured material breach, then we would lose our option to participate in global cost and profit sharing if not yet exercised as of the time of termination and lose our co-detailing option (whether or not exercised as of that time) for the relevant licensed program.

If Merck terminates funding or terminates the Amended Collaboration Agreement, it could delay or preclude our ability to complete certain of our research and development programs, which would materially and adversely affect our business and our stock price would likely decline.

We may not be able to obtain and maintain the relationships with third parties that are necessary to develop, commercialize and manufacture some or all of our product candidates.

In addition to our dependence on our collaboration with Merck, we expect to depend on other collaborators, partners, licensees, contract research organizations, or CROs, clinical data management organizations, clinical investigators, contract manufacturing organizations/contract development and manufacturing organizations, or CMOs, and other third parties to support our discovery efforts, to formulate product candidates, to conduct our clinical trials and certain aspects of our research and preclinical studies, to manufacture clinical and commercial scale quantities of our drug substances and drug products and to market, sell and distribute any products we successfully develop and for which we obtain regulatory approval. Any problems we experience with any of these third parties could delay our research efforts or the development, commercialization and manufacturing of our products or product candidates, which could harm our results of operations.

We cannot guarantee that we or, as applicable, our collaborator will be able to successfully negotiate agreements for, or maintain relationships with, collaborators, partners, licensees, CROs, clinical data management organizations, clinical investigators, CMOs and other third parties on favorable terms, if at all. If we or our collaborator are unable to obtain or maintain these agreements, we may not be able to clinically develop, formulate, manufacture, obtain regulatory approvals for or commercialize our product candidates, which will, in turn, adversely affect our business. If we or our collaborator need to enter into alternative arrangements, it would delay our product development activities and such alternative arrangements may not be available on terms acceptable to us.

We expect to continue to expend substantial management time and effort to enter into relationships with third parties and, if we successfully enter into such relationships, to manage these relationships. In addition, our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibilities. For example, we will remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. However, we cannot control the amount or timing of resources our contract partners will devote to our research and development programs, product candidates or potential product candidates, and we cannot guarantee that these parties will fulfill their obligations to us under these arrangements in a timely fashion, if at all. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our medicines. In addition, we base our expense accruals related to clinical trials on our estimates of the services received and efforts expended pursuant to contracts with multiple research institutions and CROs that conduct and manage clinical trials on our behalf and, if their estimates are not accurate, it could negatively affect the accuracy of our financial statements.

Any agreements we have or may enter into with these third parties may give rise to disputes regarding the rights and obligations of the parties. Disagreements could develop over contract interpretation, rights to ownership or use of intellectual property, the scope and direction of research and development, the approach for regulatory approvals or commercialization strategy. We are conducting research programs in a range of therapeutic areas, and

our pursuit of these opportunities could result in conflicts with the other parties to these agreements that may be developing or selling pharmaceuticals or conducting other activities in these same therapeutic areas. Any disputes or commercial conflicts could lead to the termination of our agreements, delay progress of our product development programs, compromise our ability to renew agreements or obtain future agreements, lead to the loss of intellectual property rights, result in increased financial obligations for us or result in costly litigation.

In addition, we are less knowledgeable about the reputation and quality of third-party contractors in countries outside of the United States where we conduct discovery research or preclinical and clinical development and manufacturing of our product candidates and, therefore, we may not choose the best parties for these relationships.

We may seek to establish additional collaborations, and, if we are not able to establish them on commercially reasonable terms, we may have to alter our development and commercialization plans.

Our drug development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. For product candidates outside of the scope of the continuing collaboration with Merck, we may decide to collaborate with other pharmaceutical and biotechnology companies for their development and potential commercialization. We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors, including the potential market for the subject product candidate.

We also may be restricted under existing collaboration agreements from entering into future agreements on certain terms with potential collaborators. For example, under the current terms of our Amended Collaboration Agreement with Merck, we may not directly or indirectly research, develop, manufacture or commercialize, except pursuant to the Amended Collaboration Agreement, any medicine or product candidate that modulates a target then subject to the collaboration with specified activity, including, if Merck exercises its option to license a program, we may not directly or indirectly research, develop, manufacture or commercialize any product with specified activity against the target that is the subject of that program for so long as Merck's license to it remains in effect. The FGF19 program, including aldafermin, is excluded from this provision, notwithstanding that both aldafermin and MK-3655 signal, in part, through the FGFR1c pathway. In addition, under the Amended Collaboration Agreement, we are prohibited from, directly or indirectly, researching, developing or commercializing any product for the treatment of heart failure with preserved ejection fraction (HFpEF) during the research phase for the CVM-related programs.

We may not be able to negotiate potential future collaborations on a timely basis, on acceptable terms or at all. If we are unable to do so, we may have to delay, scale back or discontinue the development of any product candidate for which we are seeking a collaboration, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities or increase our expenditures and undertake development or commercialization activities at our own expense.

Risks Related to Our Business and Industry

Our product candidates must undergo rigorous clinical trials before seeking regulatory approvals, which could delay or prevent commercialization of our product candidates.

All of our product candidates will be subject to rigorous and extensive clinical trials before we can seek regulatory approval from the FDA and comparable foreign health authorities. Clinical trials may be delayed, suspended or terminated at any time for reasons including:

- ongoing discussions with the FDA or comparable foreign health authorities regarding the scope or design of our clinical trials;
- delays in obtaining, or the inability to obtain, required approvals from institutional review boards, or IRBs, or other governing entities at clinical trial sites selected for participation in our clinical trials;
- delays in key trial activities and patient enrollment, including as a result of the evolving effects of the COVID-19 pandemic;
- delays in reaching agreement on acceptable terms with prospective CROs;
- deviations from the trial protocol by clinical trial sites and investigators, or failures to conduct the trial in accordance with regulatory requirements;

- lower than anticipated retention rates of participants in clinical trials, including patients dropping out due to side effects, disease progression or concerns about the COVID-19 pandemic;
- delays in patients completing a trial or returning for post-treatment follow-up;
- failure of third parties, such as CROs, to satisfy their contractual duties to us or meet expected deadlines;
- for clinical trials in selected patient populations, delays in identification and auditing of central or other laboratories and the transfer and validation of assays or tests to be used to identify selected patients and test any patient samples;
- implementation of new, or changes to, guidance or interpretations from the FDA or comparable foreign health authorities with respect to approval pathways for product candidates we are pursuing;
- the need to repeat clinical trials as a result of inconclusive or negative results, poorly executed testing or changes in required endpoints;
- insufficient supply or deficient quality of drug substance, drug product or other clinical trial material necessary to conduct our clinical trials, as well as delays in the testing, validation, manufacturing and delivery to clinical trial sites of such material;
- withdrawal of clinical trial sites or investigators from our clinical trials for any reason, including as a result of changing standards of care or the ineligibility of a site to participate in our clinical trials;
- unfavorable FDA or comparable foreign health authority inspection or review of a clinical trial site or records of any clinical or preclinical investigation;
- drug-related adverse effects or tolerability issues experienced by participants in our clinical trials;
- changes in government regulations or administrative actions or lack of adequate funding to continue the clinical trials;
- our ability to hire and retain key research and development personnel; or
- the placement of a clinical hold on a trial by the FDA or comparable foreign health authorities.

In particular, we or our partners may be unable to enroll the patients we need to complete clinical trials on a timely basis, or at all. For example, there is significant competition for recruiting patients with NASH in clinical trials. In the first quarter of 2020, we announced that enrollment in our ALPINE 2/3 clinical trial of aldafermin had been delayed beyond our initial projections. In addition, clinical trial enrollment generally continues to be negatively affected by the effects of the COVID-19 pandemic as a result of delays in additional clinical trial site initiation, suspension of enrollment at clinical trial sites or patient reluctance to participate in a clinical trial during quarantines or shelter-in-place orders or otherwise, particularly in medically vulnerable patient populations. This has impacted site initiation and enrollment in our ongoing Phase 2b ALPINE 4 clinical trial of aldafermin in patients with compensated NASH cirrhosis (F4 liver fibrosis), and in our trial of NGM120, including the Phase 2 portion of our ongoing Phase 1/2 trial of NGM120 which is studying NGM120 in combination with gemcitabine and Abraxane® (paclitaxel protein bound) as first-line treatment in patients with metastatic pancreatic cancer to assess NGM120's effect on both cancer and cancer-related cachexia. If the evolving effects of the COVID-19 pandemic persist or become more severe, we could experience significant disruptions to our clinical development timelines, which would adversely affect our business, financial condition, results of operations and growth prospects.

We cannot guarantee that we will be able to successfully accomplish required regulatory and/or manufacturing activities or all of the other activities necessary to initiate and complete clinical trials. As a result, our preclinical studies and clinical trials may be extended, delayed or terminated, and we may be unable to obtain regulatory approvals or successfully commercialize our products. We also have only limited experience in conducting late-stage clinical trials required to obtain regulatory approval. In any event, we do not know whether any of our clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all.

Our product development costs will increase if we continue to experience delays in clinical testing. Significant clinical trial delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do, which would impair our ability to successfully commercialize our product candidates and may harm our business, results of operations and prospects. Our or our collaborators' inability to timely complete clinical development could result in additional costs to us or impair our ability to generate product revenue or development, regulatory, commercialization and sales milestone payments and royalties on product sales.

If clinical trials of our product candidates fail to produce positive results or to demonstrate safety and efficacy to the satisfaction of health authorities, we may incur additional costs or experience delays in

completing, or ultimately be unable to complete, the development and commercialization of our product candidates.

Our product candidates are in various stages of development and our most advanced product candidates are still only in Phase 2 development. Before obtaining marketing approval from health authorities for the sale of our product candidates, we or our collaborators must conduct extensive preclinical studies and clinical trials to demonstrate the safety and efficacy of the product candidates in humans. Preclinical studies and clinical trials are expensive, take several years to complete and may not yield results that support further clinical development or product approvals. In addition, there is a high failure rate for drugs and biologic products proceeding through clinical trials and failure can occur at any stage of testing. For example, in May 2021, we announced that our Phase 2b ALPINE 2/3 trial evaluating aldafermin in patients with NASH and F2 or F3 liver fibrosis did not meet its primary endpoint and that we decided to shift resources that had previously been reserved for a Phase 3 F2/F3 NASH development program toward advancing our other programs. While we are continuing enrollment in the Phase 2b ALPINE 4 clinical trial of aldafermin in patients with compensated NASH cirrhosis (F4 liver fibrosis), we may determine to discontinue any development of aldafermin, in which case, we will not receive any return on our investment in aldafermin. In addition, data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. In any event, it is impossible to predict when or if any of our product candidates will prove safe and effective in humans or will receive regulatory approval. Owing in part to the complexity of biological pathways, our product candidates might not demonstrate in patients the biochemical and pharmacological properties we anticipate based on laboratory studies or earlier-stage clinical trials, and they may interact with human biological systems or other drugs in unforeseen, ineffective or harmful ways.

In addition, the design of a clinical trial can determine whether its results will support approval of a product, and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. Because we have limited experience designing clinical trials, we may be unable to design and execute a clinical trial to support regulatory approval.

Further, we expect that certain of our current product candidates will, and future product candidates may, require chronic administration. The need for chronic administration increases the risk that participants in our clinical trials will fail to comply with our dosing regimens. If participants fail to comply, we may not be able to generate clinical data in our trials acceptable to the FDA or foreign health authorities. The need for chronic administration also increases the risk that our clinical drug development programs may not uncover all possible adverse events that patients who take our products may eventually experience. The number of patients exposed to treatment with, and the average exposure time to, our product candidates in clinical development programs may be inadequate to detect rare adverse events or chance findings that may only be detected once our products are administered to more patients and for longer periods of time.

If we are unable to successfully discover, develop or enable our collaborators to develop drugs that are effective and safe in humans, we will not have a viable business.

Aldafermin, which is wholly owned by us, as well as MK-3655, which is being developed by our collaborator, Merck, are being developed for the treatment of NASH, an indication for which there are no approved products. This makes it difficult to predict the timing, cost and potential success of their clinical development and regulatory approval for the treatment of NASH.

We are developing aldafermin, and Merck is developing MK-3655, for the treatment of NASH, an indication for which there are no approved products. Implementation of new, or changes to, guidance or interpretations from the FDA or comparable foreign authorities with respect to approval pathways, such as draft guidance documents from the FDA for the development of products for the treatment of NASH that issued in 2018 and 2019 and from the European Medicines Agency, or EMA, that issued in 2018, may impact the path for regulatory approval for NASH therapies. Further, as we and other companies advance clinical trials for potential NASH therapies, we expect that the path for regulatory approval for NASH therapies may continue to evolve as companies refine their regulatory approval strategies and interact with health authorities. Such evolution may impact our future clinical trial designs, including trial size and endpoints, in ways that we cannot currently predict. In addition, certain of our competitors have recently experienced regulatory setbacks for NASH therapies following communications from the FDA. We currently do not know the impact, if any, that these setbacks could have on the path for regulatory approval for NASH therapies generally or for aldafermin and MK-3655 in particular. If the clinical trials for aldafermin and MK-3655 are not designed in a manner that, even if successful, support regulatory approval due to shifting approval pathways or for other reasons, those product candidates may be delayed in obtaining approval or may never be approved, which could have a material adverse effect on our business, operating results and prospects.

Success in preclinical studies or earlier-stage clinical trials may not be indicative of results in future clinical trials.

To date, the data supporting our drug discovery and development programs are derived from laboratory and preclinical studies and earlier-stage clinical trials. Success in preclinical studies and earlier-stage clinical trials does not ensure that later clinical trials will generate the same results or otherwise provide adequate data to demonstrate the effectiveness and safety of our product candidates. In this regard, despite the results reported in our Phase 1 and 2 clinical trials for aldafermin, in Phase 1 clinical trials for MK-3655, NGM621 and NGM120 and in preclinical studies for our other product candidates, including our oncology product candidates, NGM707 and NGM438, future clinical trials in humans may show that one or more of our product candidates are not safe and effective, in which event we may need to abandon development of such product candidates. In fact, many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical trials even after achieving promising results in preclinical studies and earlier-stage clinical trials. Similarly, preliminary data and interim results from clinical trials may not be predictive of final results. For example, in spite of the results we had obtained in our Phase 1 trials of aldafermin and in our completed Phase 2 trial, including the data from the fourth and final 24-week expansion cohort of that trial in patients with NASH with fibrosis stage F2 or F3, in May 2021, we announced that our Phase 2b ALPINE 2/3 trial evaluating aldafermin in patients with NASH and F2 or F3 liver fibrosis did not meet its primary endpoint. In addition, some of our clinical trials involve small patient populations, sometimes at single sites, and the results of these clinical trials may be subject to substantial variability and may not be indicative of either future interim results or final results.

We may not successfully identify new product candidates to expand our development pipeline.

The success of our business depends primarily upon our ability to identify and validate new therapeutic candidates, and to identify, develop and commercialize protein and antibody therapeutics. Research programs to identify new product candidates require substantial technical, financial and human resources, and our research methodology may not successfully identify medically-relevant protein or antibody therapeutics or new product candidates. In addition, our drug discovery efforts tend to identify and select novel, untested proteins in the particular disease indication we are pursuing, which we may fail to validate after further research work. Moreover, our research efforts may initially show promise in discovering potential new protein and antibody therapeutics, yet fail to yield product candidates for clinical development for multiple reasons. For example, potential product candidates may, on further study, be shown to have inadequate efficacy, harmful side effects, suboptimal drug profiles or other characteristics suggesting that they are unlikely to be commercially viable products. Our inability to successfully identify new product candidates to advance into clinical trials could have a material adverse effect on our business, operating results and prospects.

We are subject to many manufacturing risks, any of which could substantially increase our costs and limit supply of our product candidates and any future products.

We have limited process development capabilities and only have access to external CMOs to provide manufacturing capabilities. We do not have, and we do not currently plan to acquire or develop, the facilities or capabilities to manufacture bulk drug substance or filled drug product for use in clinical trials or commercialization. As a result, we rely completely on CMOs, which entails risks to which we would not be subject if we manufactured product candidates or products ourselves, including risks related to reliance on third parties for regulatory compliance and quality assurance, the possibility of breach of the manufacturing agreement by third parties because of factors beyond our control (including a failure to manufacture our product candidates or any products we may eventually commercialize in accordance with our specifications) and the possibility of termination or nonrenewal of agreements by third parties, based on their own business priorities, at a time that is costly or damaging to us.

Our product candidates are biologics, and the manufacture of biologic products is complex, highly regulated and requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. As a result, the manufacture of our product candidates is subject to many risks, including:

- product loss or other negative consequences due to contamination, equipment failure, improper installation or operation of equipment, vendor or operator error, shortages of qualified personnel or improper storage conditions;
- difficulties with production costs and yields, quality control, product stability and quality assurance testing;
- the negative consequences of failure to comply with strictly enforced federal, state and foreign regulations;

- even minor deviations from normal manufacturing processes have in the past and may in the future result in reduced production yields, product defects and other supply disruptions;
- the presence of microbial, viral or other contaminants discovered in our product candidates or in the manufacturing facilities in which they are made, may necessitate closure of facilities for an extended period of time to investigate and eliminate the contamination;
- the negative consequences of our CMOs' failure to qualify upon an audit by regulatory authorities, by us or, in the case of product candidates subject to our collaboration with Merck, by Merck; and
- our CMOs' manufacturing facilities being adversely affected by labor and raw material shortages, turnover of qualified staff or financial difficulties of their owners or operators, including as a result of the evolving effects of the COVID-19 pandemic, or by natural disasters, power failures, local political unrest or other factors.

We cannot ensure that any stability or other issues relating to the manufacture of our product candidates, such as those described above, will not occur in the future.

In addition, to date our product candidates have been manufactured by CMOs solely for preclinical studies and relatively small clinical trials. We intend to continue to use CMOs for these purposes, and also for the supply of larger quantities that may be required to conduct larger, later clinical trials and for commercialization if we advance any of our product candidates through regulatory approval and to commercialization. In addition, for MK-3655 and any other product candidates licensed by Merck, we will rely on Merck's internal manufacturing capacity or a third-party manufacturer engaged by Merck. These manufacturers may not have sufficient manufacturing capacity and may not be able to scale up the production of drug substance or drug product in the quantities we need and at the level of quality required in a timely or effective manner, or at all.

The transfer of our small scale manufacturing processes to CMOs for scale up and validation, and any later scale up and validation of the manufacturing process in the CMOs' facilities to manufacture larger quantities, involve difficult and complex processes. We may not be successful in transferring our production system to a CMO, either because they are unable to implement the process successfully in their facilities or for other reasons. Later scale up activities are also difficult and costly and entail risks such as process reproducibility, stability, consistency and other technical challenges. If we are unable to adequately validate or scale up the manufacturing processes for our product candidates, we would need to undertake a transfer to another third party and repeat the manufacturing validation process, which can be expensive and time-consuming and could delay the initiation or completion of our clinical trials.

Similarly, at various points in development we or our CMOs may make changes to our manufacturing processes for many reasons, including scaling up, facility fit, decreasing costs or timing of production, improving processing robustness and reliability, decreasing processing times or other reasons. Such changes require further validation and may have unintended consequences, which could include causing our product candidates to perform differently when administered in clinical trials and affecting clinical trial results. In some circumstances, we may be required to perform comparability or other studies to demonstrate that the product used in earlier clinical trials or at earlier stages of a trial are comparable to the product we intend to us in later trials or later stages of an ongoing trial. These efforts are expensive and there is no assurance that they will be successful, which could impact our ability to continue or initiate clinical trials in a timely manner, or at all.

Any future adverse developments affecting manufacturing operations or the scale up or validation of manufacturing processes for our product candidates may result in shipment delays, lot failures, clinical trial delays or discontinuations, or, if we are commercializing products, inventory shortages, product withdrawals or recalls or other interruptions in supply. We may also have to record inventory write-offs and incur other charges and expenses for product candidates or drug substances that fail to meet specifications or cannot be used before their expiration dates. In addition, for out of specification materials, we may need to undertake costly remediation efforts or manufacture new batches at considerable cost and time delays or, in the longer run, seek more expensive manufacturing alternatives.

We also have a single source of supply for most of our product candidates, including the drug substances used in manufacturing them. Single sourcing minimizes our leverage with our CMOs, who may take advantage of our reliance on them to increase the pricing of their manufacturing services. Single sourcing also imposes a risk of interruption in supply in the event of manufacturing, quality or compliance difficulties. In addition, we do not currently have arrangements in place for redundant supply for bulk drug substances or drug product. If one of our suppliers fails or refuses to supply us for any reason, it would take a significant amount of time and cost to implement and execute the necessary technology transfer to, and to qualify, a new supplier. The FDA or comparable foreign health

authority must approve manufacturers of drug substance and drug product. If there are any delays in qualifying new suppliers or facilities or a new supplier is unable to meet the requirements of the FDA or comparable foreign health authority for approval, there could be a shortage of drug substance or drug product for use in clinical trials with respect to the affected product candidates.

Our product candidates use certain raw materials for their manufacture, such as reagents that support cell growth, purification materials and testing supplies. Some of these materials only have a single supplier and are purchased as necessary without a long-term supply agreement in place. In addition, our drug products may require the use of syringe components, some of which have been the subject of shortages amplified by the COVID-19 pandemic due to their use in, among other things, COVID-19 vaccine production. Any significant delay in the acquisition or decrease in the availability of these materials, syringe components or other items could considerably delay the manufacture of our product candidates or the conduct of our clinical trials, which could adversely impact the timing or completion of any ongoing and planned trials or the timing of regulatory approvals, if any, of our product candidates.

In addition, the operations of our CMOs may be requisitioned, diverted or allocated by U.S. or foreign government orders such as under emergency, disaster and civil defense declarations in connection with the COVID-19 pandemic or otherwise. As an example, in 2020, the Defense Production Act was invoked pursuant to which the U.S. government may, among other things, require domestic industries to provide essential goods and services needed for the national defense, such as drug material or other supplies needed to treat COVID-19 patients or to produce or distribute vaccines, which could require our third-party manufacturers to allocate manufacturing capacity in a way that delays or interrupts our supply of clinical trial material. Our aldafermin drug product CMO advised us that it could be required under orders of the U.S. government to allocate manufacturing capacity to the manufacture or distribution of COVID-19 vaccines. If any of our CMOs become subject to acts or orders of U.S. or foreign government entities to allocate manufacturing capacity to the manufacture or distribution of COVID-19 vaccines or medical supplies needed to treat COVID-19 patients, this could also delay our clinical trials, perhaps substantially, which could materially and adversely affect our business.

Any delay or interruption in the supply of clinical trial material could delay the completion of clinical trials, increase the costs associated with maintaining clinical trial programs and, depending upon the period of delay, require us to commence new clinical trials at additional expense or terminate clinical trials completely.

Our product candidates may cause undesirable side effects or adverse events or have other properties or safety risks, which could delay or prevent continued clinical development or their regulatory approval or limit the commercial profile of any approved label.

Adverse events, undesirable side effects or similar safety issues caused by our product candidates could cause us or health authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign health authorities. Additional clinical trials may be required to evaluate the safety profile of our product candidates. Patients in certain of our ongoing or planned clinical trials, particularly those with NASH with more advanced fibrosis and patients with cancer, also often commonly enter our trials with significant comorbidities or advanced life-threatening illness and/or are treated in the trial with our product candidate in combination with other medications, including chemotherapy or other approved cancer treatments. As a result, patients in our clinical trials can be expected to experience some adverse events, including death, or side effects that are not or may not be related to treatment with our product candidates. Nonetheless, the occurrence of adverse events or side effects, whether or not related to our product candidates, could impact the success of our clinical trials.

In clinical trials of aldafermin to date, a number of serious adverse events, or SAEs, most of which have been classified as mild to moderate, have been reported in the treatment arms of our completed Phase 1 and Phase 2 clinical trials, including one patient in Cohort 1 of our Phase 2 clinical trial who experienced an SAE, acute pancreatitis, that was assessed as possibly related to aldafermin. Patients have also experienced, and we have reported, SAEs in our completed trials of MK-3655, NGM621 and NGM120. Ocular SAEs reported in our ongoing Phase 2 CATALINA trial of NGM621, which remains masked to treatment assignment, include worsening of vision due to GA worsening and retinal detachment in the non-study eye, development of choroidal neovascularization in the study and non-study eye and worsening of vision due to GA worsening in the study eye. We expect that patients in our clinical trials, including those that are sham- or placebo-controlled with some patients not receiving study drug, will continue to experience adverse events and SAEs and we will continue to monitor those SAEs for any signals of concern regarding the safety and tolerability of our product candidates. If patients in any of our clinical trials experience a high or unacceptable severity and prevalence of side effects, including particularly SAEs, it could

affect patient recruitment or the ability of enrolled patients to complete their treatment in a clinical trial or result in failure to obtain regulatory approval for our product candidates or product liability claims.

In addition, significant increases in serum levels of low-density lipoprotein cholesterol, or LDL-C, were observed in clinical trials of aldafermin in patients with NASH and type 2 diabetes. Serum levels of LDL-C were brought back to baseline levels with concomitant statin use in patients with NASH; however, the impact of these drug-induced changes in LDL-C are unknown. Generally, sustained and prolonged LDL-C elevations in untreated patients are associated with cardiovascular disease through atherosclerotic plaque development. While data from our completed Phase 2b ALPINE 2/3 clinical trial and earlier trials of aldafermin demonstrated the ability of concomitant statin use to mitigate the serum LDL-C elevations driven by aldafermin activity, aldafermin's impact on LDL-C may negatively impact market acceptance of an approved aldafermin product.

Our product candidates, including aldafermin, which is an engineered variant of the FGF19 protein, are protein or antibody therapeutics. Protein and antibody therapeutics can sometimes induce host immune responses that can cause the production of anti-drug antibodies, or ADAs. In some cases, ADAs have no effect. In other cases, ADAs may neutralize the effectiveness of the product candidate, can require that higher doses be used to obtain a therapeutic effect or can cross react with substances naturally occurring in a subject's body, which can cause unintended effects, including potential impacts on efficacy and adverse events. Some patients treated with aldafermin in our completed clinical trials have developed ADAs against aldafermin and, in some cases, those antibodies were neutralizing or appeared to cross react with the patient's naturally occurring FGF19. We have developed an assay to measure the presence of ADAs against aldafermin for our ongoing NASH program, which we are using to test patient samples and which will need to be evaluated by regulatory agencies. The presence of ADAs was also observed in our Phase 1 MK-3655 trial. If we or Merck, as appropriate, are required to undertake substantial additional testing as a result of the detection of ADAs in subjects using aldafermin, MK-3655 or any other product candidate, the costs of our clinical trials may increase. If we or Merck determine that ADAs are causing safety or efficacy concerns when using any of our product candidates, we or Merck may need to delay or halt clinical trials of our product candidates and the affected product candidates may never obtain regulatory approval. We cannot provide assurance that the detection of ADAs will not be higher than we have observed historically or that observed rates will not later be found to limit drug exposure or cause adverse safety events, or that the detection of ADAs will not otherwise result in the non-approvability of any of our product candidates.

In clinical trials to date, NGM621 has been delivered to clinical sites in vials and then administered to patients using commercially available single-use syringes. The manufacturer of a commercially available single-use syringe widely used by ophthalmologists for IVT injections, including investigators in the Phase 2 CATALINA trial, has issued a notice that such single-use syringes should not be used for ocular medications due to an increased potential for adverse eye conditions. We have not experienced any safety concerns in our ongoing or completed NGM621 clinical trials relating to syringe use; however, we have communicated with the FDA and our study investigators regarding this issue and are evaluating alternative syringes that may be suitable for intraocular use. However, if any patient in our clinical trials experiences a safety event due to the use of these commercially available single-use syringes, we could be required to delay or halt our clinical trials or may be subject to product liability claims.

Future results of our trials could reveal a high and unacceptable severity and prevalence of side effects, SAEs, ADAs, safety issues or other negative or otherwise unexpected characteristics. The occurrence of those issues could affect patient recruitment or the ability of enrolled patients to complete their treatment in a clinical trial, result in failure to obtain regulatory approval for our product candidates or product liability claims or impact market acceptance of our products. Any of these occurrences could materially and adversely affect our business, financial condition and prospects.

Aldafermin is a modified version of a human hormone that has been associated with liver cancer in rodent testing.

The investigational new drug, or IND, application we filed for aldafermin in February 2014 for type 2 diabetes was placed on clinical hold by the FDA Division of Metabolism and Endocrinology Products pending receipt of additional information relating to the potential risk of proliferative effects of aldafermin in the livers of non-human primates and mice based on concerns relating to the observation that human FGF19 can induce hepatocellular proliferation in rodents. We withdrew this IND in January 2015, as we determined that we would not further study aldafermin in type 2 diabetes after we analyzed the results of the Phase 2 clinical trial of aldafermin in type 2 diabetes and made the determination to pursue NASH and other liver indications. To date, the FDA Division of Hepatology and Nutrition, which is responsible for the NASH indication, has not requested any additional information regarding the potential for aldafermin to induce hepatocellular proliferation. We have received feedback

from the FDA Carcinogenicity Assessment Committee that our preclinical data through six-month chronic toxicology studies in mice and monkeys support a single species, two-year carcinogenicity assessment in rats. The human hormone and the rodent ortholog for FGF19 share a sequence identity of approximately 50%, which means that the results of these studies of aldafermin in rats are not necessarily predictive of the potential risk of carcinogenicity in humans. To our knowledge, neither FGF19 nor any variant thereof other than aldafermin has ever been tested in humans. Aldafermin is a modified version of FGF19 that we believe does not exhibit the cancer-causing effects of native human FGF19 in rodents. We believe that aldafermin will have a superior therapeutic profile to FGF19 based on preclinical data showing reduced fasting blood glucose levels, fed insulin levels and bile acid suppression in animals. However, we may be incorrect in these beliefs, and we cannot be sure that regulators will view our product candidate as safe or that physicians will view our product candidates as safe and superior to alternative treatments. Concerns about the association between FGF19 and liver cancer could have an adverse effect on our ability to develop and commercialize aldafermin.

We have no experience in sales, marketing and distribution and may have to enter into agreements with third parties to perform these functions, which could prevent us from successfully commercializing our product candidates.

We currently have no sales, marketing or distribution capabilities. To commercialize our product candidates outside of the Merck collaboration, or to commercialize products subject to the Merck collaboration for which we may in the future exercise our co-detailing rights in the United States, we must either develop our own sales, marketing and distribution capabilities or make arrangements with third parties to perform these services for us. If we exercise our co-detailing rights in the United States with respect to the Merck collaboration, we will be responsible for the costs of fielding such a sales force, subject to partial offset pursuant to the formula by which profits are allocated, and the risks of attracting, retaining, motivating and ensuring the compliance of such a sales force with the various requirements of the Merck collaboration and applicable law. If we decide to market any of our products on our own, we will have to commit significant resources to developing a marketing and sales force and supporting distribution capabilities. If we decide to enter into arrangements with third parties for performance of these services, we may find that they are not available on terms acceptable to us, or at all. If we are not able to establish and maintain successful arrangements with third parties or build our own sales and marketing infrastructure, we may not be able to commercialize our product candidates, which would adversely affect our business, operating results and prospects.

We may fail to select or capitalize on the most scientifically, clinically and commercially promising or profitable product candidates.

We have limited technical, managerial and financial resources to determine which of our product candidates should proceed to initial clinical trials, later-stage clinical development and potential commercialization. We may make incorrect determinations in allocating resources among these product candidates. Our decisions to allocate our research and development, management and financial resources toward particular product candidates or therapeutic areas may not lead to the development of viable commercial products and may divert resources from better opportunities. Similarly, our decisions to delay or terminate drug development programs, such as our decision to suspend development activities related to multiple metabolic disease product candidates to concentrate our resources elsewhere, also may be incorrect and could cause us to miss valuable opportunities.

Under the terms of our Amended Collaboration Agreement with Merck, we have the right, exercisable during a specified period prior to the commencement of Phase 3 clinical testing of the applicable product candidate, to convert our economic participation from a milestones and net sales royalty arrangement into a cost and profit share arrangement. If we exercise the cost and profit share right, we have the ability to participate in a co-detailing relationship in the United States. Due to the limited exercise period, we may have to choose whether a product candidate will be subject to a cost and profit share arrangement before we have as much information as we would like, including whether and when such program may receive FDA approval of the applicable biologics license application, or BLA. As a result of such incomplete information or due to incorrect analysis by us, we may select a cost and profit share program that later proves to have less commercial potential than an alternative, or none at all, or may pass on a cost and profit-sharing program that proves commercially successful.

We must attract and retain highly skilled employees in order to succeed. If we are not able to retain our current senior management team, especially Dr. Jin-Long Chen, or continue to attract and retain qualified scientific, technical and business personnel, our business will suffer.

To succeed, we must recruit, retain, manage and motivate qualified clinical, scientific, technical and management personnel and we face significant competition for experienced personnel. If we do not succeed in

attracting and retaining qualified personnel, particularly at the management level, it could adversely affect our ability to execute our business plan and harm our operating results. An important element of our strategy is to take advantage of the research and development expertise of our current management. The loss of any one of our executive officers, including, in particular, Dr. Jin-Long Chen, our Chief Scientific Officer, could result in a significant loss in the knowledge and experience that we, as an organization, possess and could cause significant delays, or outright failure, in the development and further commercialization of our product candidates.

There is intense competition for qualified personnel, including management, in the technical fields in which we operate, and we may not be able to attract and retain qualified personnel necessary for the successful research, development and future commercialization, if any, of our product candidates. In particular, the hiring environment in the San Francisco Bay Area, where we are headquartered, is extremely competitive. Many of the other pharmaceutical companies that we compete against for qualified personnel have greater financial and other resources, different risk profiles and a longer history in the industry than we do. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high-quality candidates than what we have to offer. If we are unable to continue to attract and retain high-quality personnel, the rate and success with which we can discover and develop product candidates and our business will be limited.

We may encounter difficulties in managing our growth, which could adversely affect our operations.

Over the past few years, we have significantly increased our headcount and advanced our pipeline and the complexity of our operations, which has placed a strain on our administrative and operational infrastructure. We expect this strain to continue as we seek to maintain our growth and seek to obtain and manage relationships with third parties. Our ability to manage our operations and growth effectively depends upon the continual improvement of our procedures, remote work policies, reporting systems and operational, financial and management controls, particularly in light of the evolving effects of the COVID-19 pandemic. We may not be able to expand or identify sufficiently-sized facilities to accommodate our growth, particularly given our location in South San Francisco, California and the current high demand for, and restricted supply of, research and development facilities in this market. We may not be able to implement administrative and operational improvements in an efficient or timely manner and may discover deficiencies in existing systems and controls. If we do not meet these challenges, we may be unable to take advantage of market opportunities, execute our business strategies or respond to competitive pressures, which in turn may slow our growth or give rise to inefficiencies that would increase our losses.

We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than us.

The biopharmaceutical industry is intensely competitive and subject to rapid and significant technological change. Our competitors include multinational pharmaceutical companies, specialized biotechnology companies and universities and other research institutions. A number of pharmaceutical and biotechnology companies are pursuing the development or marketing of pharmaceuticals that target the same diseases that are targeted by our most advanced product candidates. It is probable that the number of companies seeking to develop products and therapies for the treatment of liver and metabolic diseases, retinal diseases and cancer will increase. Many of our competitors have substantially greater financial, technical, human and other resources than we do and may be better equipped to develop, manufacture and market technologically superior products. In addition, many of these competitors have significantly greater experience than we have in undertaking preclinical studies and human clinical trials of new pharmaceutical products and in obtaining regulatory approvals of human therapeutic products. Accordingly, our competitors may succeed in obtaining FDA approval for superior products or for other products that would compete with our product candidates. Many of our competitors have established distribution channels and commercial infrastructure to support the commercialization of their products, whereas we have no such channel or capabilities. In addition, many competitors have greater name recognition and more extensive collaborative relationships. Smaller and earlier-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies.

Our competitors may obtain regulatory approval of their products more rapidly than us or may obtain patent protection or other intellectual property rights that limit our ability to develop or commercialize our product candidates. Our competitors may also develop drugs that are more effective, more convenient, more widely used and less costly or have a better safety profile than our products and these competitors may also be more successful than us in manufacturing and marketing their products. If we are unable to compete effectively against these companies, then we may not be able to commercialize our product candidates or achieve a competitive position in the market. These companies also compete with us in recruiting and retaining qualified scientific, management and

commercial personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Although we believe there are no FDA-approved therapies that specifically target the signaling pathways that our current product candidates are designed to modulate or inhibit, there are numerous currently approved therapies for treating the same diseases or indications (other than NASH) for which our product candidates may be useful and many of these currently approved therapies act through mechanisms similar to our product candidates. Many of these approved drugs are well-established therapies or products and are widely accepted by physicians, patients and third-party payors. Some of these drugs are branded and subject to patent protection, and others are available on a generic basis. Insurers and other third-party payors may also encourage the use of generic products or specific branded products. We expect that if our product candidates are approved, they will be priced at a significant premium over competitive generic products, including branded generic products. This may make it difficult for us to differentiate our products from currently approved therapies, which may adversely impact our business strategy. In addition, many companies are developing new therapeutics, and we cannot predict what the standard of care will be as our product candidates progress through clinical development. For more information regarding the competition that our most advanced product candidates face, or may face, see the discussion of specific competition for each product candidate in "Business—Key Therapeutic Areas and Pipeline Programs" in Part I, Item 1 of our Annual Report on Form 10-K for the year ended December 31, 2020.

Our product candidates may not achieve adequate market acceptance among physicians, patients, healthcare payors and others in the medical community necessary for commercial success.

Even if our product candidates receive regulatory approval, they may not gain adequate market acceptance among physicians, patients, healthcare payors and others in the medical community. Demonstrating the safety and efficacy of our product candidates and obtaining regulatory approvals will not guarantee future revenue. The degree of market acceptance of any of our approved product candidates will depend on a number of factors, including:

- the efficacy and safety profile of the product candidate as demonstrated in clinical trials;
- the timing of market introduction of the product candidate, as well as competitive products;
- the clinical indications for which the product candidate is approved;
- acceptance of the product candidate as a safe and effective treatment by clinics and patients;
- the potential and perceived advantages of the product candidate over alternative treatments, including any similar generic treatments;
- the inclusion or exclusion of the product candidate from treatment guidelines established by various physician groups and the viewpoints of influential physicians with respect to the product candidate;
- the cost of treatment relative to alternative treatments;
- our pricing and the availability of coverage and adequate reimbursement by third parties and government authorities as described below;
- the relative convenience and ease of administration;
- the frequency and severity of adverse events;
- the effectiveness of sales and marketing efforts; and
- any unfavorable publicity relating to the product candidate.

For example, aldafermin is currently administered via a once-daily subcutaneous injection. While we are undertaking efforts to develop formulations and presentations of aldafermin that allow for more convenient or less frequent dosing, there is no assurance that these efforts will be successful, which may negatively impact market acceptance of an approved aldafermin product, if any. In addition, see the risk factor titled "Our product candidates may cause undesirable side effects or adverse events or have other properties or safety risks, which could delay or prevent continued clinical development or their regulatory approval or limit the commercial profile of any approved label" above. If any product candidate is approved but does not achieve an adequate level of acceptance by such parties, we may not generate or derive sufficient revenue from that product candidate and may not become or remain profitable.

Even if we commercialize any of our product candidates, alone or with our partners, these products may become subject to unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives, which could harm our business.

The regulations that govern marketing approvals, pricing and reimbursement for new drug products vary widely from country to country. Current and future legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. In many regions, including Europe, Japan and Canada, the pricing of prescription drugs is controlled by the government. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. Regulatory agencies in those countries could determine that the pricing for our products should be based on prices of other commercially available drugs for the same disease, rather than allowing us to market our products at a premium as new drugs. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay or limit our commercial launch of the product, possibly for lengthy time periods, which could negatively impact the revenue we generate from the sale of the product in that particular country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain marketing approval.

Our commercial success also depends on coverage and adequate reimbursement of our product candidates by third-party payors, including government payors, private health insurers, health maintenance organizations and other organizations, which may be difficult or time-consuming to obtain, may be limited in scope and may not be obtained in all jurisdictions in which we may seek to market our products. Governments and private insurers closely examine medical products to determine whether they should be covered by reimbursement and, if so, the level of reimbursement that will apply. Government authorities and other third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We cannot be sure that coverage and reimbursement will be available for any product that we or our partners commercialize and, if reimbursement is available, what the level of reimbursement will be. Coverage and reimbursement may impact the demand for, or the price of, any product candidate for which we or our partners obtain marketing approval. If coverage and reimbursement are not available or reimbursement is available only to limited levels, we and our partners may not be able to successfully commercialize any product candidate for which marketing approval is obtained.

There may be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or comparable foreign health authorities. Moreover, eligibility for coverage and reimbursement does not imply that a drug will be paid for in all cases or at a rate that covers our costs, including costs of research, development, manufacture, sale and distribution. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover our costs and may only be temporary. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Our inability to promptly obtain coverage and profitable reimbursement rates from both government-funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

The advancement of healthcare reform may negatively impact our ability to profitably sell our product candidates, if approved.

Third-party payors, whether domestic or foreign, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. The United States and many foreign jurisdictions have enacted or proposed legislative and regulatory changes affecting the healthcare system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product for which we obtain marketing approval.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively referred to as the ACA, was enacted, which includes measures that have significantly changed the way health care is financed by both governmental and private insurers. There have been executive, judicial and congressional challenges to certain aspects of the ACA.

In addition, while Congress has not passed comprehensive legislation repealing the ACA, it has introduced legislation to modify certain provisions. Congress likely will consider other legislation to modify or replace additional

elements of the ACA. It is unclear how these efforts to repeal and replace the ACA, or other appeals, will impact the ACA and our business. For example, the 2017 Tax Act repealed the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage that is commonly referred to as the "individual mandate." In December 2019, a U.S. District Court upheld a ruling that the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. On June 17, 2021, the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Thus, the ACA will remain in effect in its current form. It is possible that the ACA will be subject to judicial or Congressional challenges in the future. It is unclear how any such challenges and the healthcare reform measures of the Biden administration will impact the ACA or our business.

Recently, there has also been increasing executive, legislative and enforcement interest in the United States with respect to drug pricing practices. There have been U.S. congressional inquiries, presidential executive orders and proposed and enacted legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs and reform government program reimbursement methodologies for drugs. For example, based on a recent executive order, the administration of President Biden, or the Biden administration, expressed its intent to pursue certain policy initiatives to reduce drug prices. We expect that the healthcare reform measures that have been adopted and may be adopted in the future may result in more rigorous coverage criteria and additional downward pressure on the price that we receive for any approved product and could seriously harm our future revenues. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our products.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. It is also possible that additional governmental action is taken in response to the COVID-19 pandemic. Such reforms could have an adverse effect on anticipated revenue from product candidates that we may successfully develop and for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop product candidates.

We cannot predict the likelihood, nature or extent of healthcare reform initiatives that may arise from future legislation or administrative action. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or such third parties are not able to maintain regulatory compliance, our product candidates may lose any regulatory approval that may have been obtained and we may not achieve or sustain profitability.

Our international operations may expose us to business, regulatory, political, operational, financial, pricing and reimbursement risks associated with doing business outside of the United States.

Our business is subject to risks associated with conducting business internationally. Some of our suppliers and clinical trial sites are located outside of the United States. Furthermore, if we, Merck or any future collaborator succeeds in developing any of our product candidates, we intend to market them in the European Union, or the EU, and other jurisdictions in addition to the United States. If approved, we, Merck or any future collaborator may hire sales representatives and conduct physician and patient association outreach activities outside of the United States. Doing business internationally involves a number of challenges and risks, including but not limited to:

- multiple, conflicting and changing laws and regulations, such as privacy regulations, tax laws, export and import restrictions, employment laws, regulatory requirements and other governmental approvals, permits and licenses;
- failure by us to obtain and maintain regulatory approvals for the use of our products in various countries;
- rejection or qualification of foreign clinical trial data by the competent authorities of other countries;
- delays or interruptions in the supply of clinical trial material resulting from any events affecting raw material supply or manufacturing capabilities abroad, including those that may result from the ongoing COVID-19 pandemic;
- additional potentially relevant third-party patent rights;
- complexities and difficulties in obtaining, maintaining, protecting and enforcing our intellectual property;
- difficulties in staffing and managing foreign operations;

- complexities associated with managing multiple payor reimbursement regimes, government payors or patient self-pay systems;
- limits on our ability to penetrate international markets;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products and exposure to foreign currency exchange rate fluctuations;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, including COVID-19 and related shelter-in-place orders, travel, social distancing and quarantine policies, boycotts, curtailment of trade and other business restrictions; and
- regulatory and compliance risks that relate to anti-corruption compliance and record-keeping that may fall within the purview of the U.S. Foreign Corrupt Practices Act, its accounting provisions or its anti-bribery provisions or provisions of anti-corruption or anti-bribery laws in other countries.

Any of these factors could harm our ongoing international clinical operations and supply chain, as well as any future international expansion and operations and, consequently, our business, financial condition, prospects and results of operations.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we may develop.

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we or our collaborator commercializes any resulting products. Product liability claims may be brought against us by subjects enrolled in our clinical trials, patients, healthcare providers or others using, administering or selling our products. If we cannot successfully defend ourselves against claims that our product candidates or products that we may develop caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that we may develop;
- termination of clinical trial sites or entire trial programs;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial subjects or patients;
- loss of revenue;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize any products that we may develop.

Our clinical trial liability insurance coverage may not adequately cover all liabilities that we may incur. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise. Our inability to obtain product liability insurance at an acceptable cost or to otherwise protect against potential product liability claims could prevent or delay the commercialization of any products or product candidates that we develop. We intend to expand our insurance coverage for products to include the sale of commercial products if we obtain marketing approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products approved for marketing. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. If we are sued for any injury caused by our products, product candidates or processes, our liability could exceed our product liability insurance coverage and our total assets. Claims against us, regardless of their merit or potential outcome, may also generate negative publicity or hurt our ability to obtain physician endorsement of our products or expand our business.

Our relationships with healthcare providers, customers and third-party payors will be subject to applicable anti-kickback, fraud and abuse, transparency and other healthcare laws and regulations, which, if violated, could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens and diminished profits and future earnings.

Healthcare providers, including physicians, and third-party payors will play a primary role in the recommendation and prescription of any product candidates for which we or our collaborator obtains marketing approval. Our arrangements with healthcare providers, third-party payors and customers may expose us to broadly

applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we research, market, sell and distribute our products for which we or our collaborator obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations, include the following:

- the federal Anti-Kickback Statute prohibits persons from, among other things, knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, the referral of an individual for the furnishing or arranging for the furnishing, or the purchase, lease or order, or arranging for or recommending purchase, lease or order, of any good or service for which payment may be made under a federal healthcare program, such as Medicare and Medicaid;
- the federal False Claims Act, or FCA, imposes criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- the federal Health Insurance Portability and Accountability Act, or HIPAA, imposes criminal liability for knowingly and willfully executing a scheme to defraud any healthcare benefit program, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense or knowingly and willfully making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 and its implementing regulations, also imposes obligations on certain covered entity healthcare providers, health plans and healthcare clearinghouses, and their business associates that perform certain services involving the use or disclosure of individually identifiable health information as well as their covered subcontractors, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal Open Payments program, created under Section 6002 of the ACA and its implementing regulations, requires manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the United States Department of Health and Human Services, or HHS, information related to "payments or other transfers of value" made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals and applicable manufacturers and applicable group purchasing organizations to report annually to the HHS ownership and investment interests held by physicians (as defined above) and their immediate family members. Beginning in 2022, applicable manufacturers also will be required to report such information regarding its payments and transfers of value to physician assistants, nurse practitioners, anesthesiologist assistants, clinical nurse specialists, certified registered nurse anesthetists and certified nurse midwives during the previous year; and
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; state and foreign laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers; state and local laws requiring the registration of pharmaceutical sales representatives; state and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers, marketing expenditures or pricing; and state and foreign laws that govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, additional regulatory oversight, imprisonment, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business

is found not to be in compliance with applicable laws, that person or entity may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

Our operations are vulnerable to interruption by fire, earthquake, power loss, telecommunications failure, terrorist activity and other events beyond our control, which could harm our business.

Our facilities have experienced electrical blackouts as a result of a shortage of available electrical power. Future blackouts, which may be implemented by the local electricity provider in the face of high winds and dry conditions, could disrupt our operations. Our facility is located in a seismically active region. We have not undertaken a systematic analysis of the potential consequences to our business and financial results from a major earthquake, fire, power loss, terrorist activity or other disasters and do not have a comprehensive recovery plan for such disasters. In addition, we do not carry sufficient insurance to compensate us for actual losses from interruption of our business that may occur, and any losses or damages incurred by us could harm our business. In addition, the sole supplier of clinical drug substance for NGM120, NGM621, NGM707 and NGM438 is located in a region that has experienced political unrest. If our operations or the operations of third parties providing services to us experiences are disrupted by any such occurrences, our business and future prospects may be negatively affected.

Our business is currently adversely affected and could be materially and adversely affected in the future by the effects of disease outbreaks, epidemics and pandemics, including by the evolving effects of the COVID-19 pandemic. The COVID-19 pandemic continues to adversely impact our business and could materially and adversely affect our operations, as well as the businesses or operations of our manufacturers, CROs or other third parties with whom we conduct business.

Disease outbreaks and epidemics in regions where we have concentrations of clinical trial sites or other business operations or pandemics, such as the COVID-19 pandemic, could adversely affect our business, including by causing significant disruptions in our operations and/or in the operations of third-party manufacturers and CROs upon whom we rely. For example, the COVID-19 pandemic has presented a substantial public health and economic challenge around the world and is affecting employees, patients, communities and business operations, as well as the United States and international economy and financial markets. In this regard, the COVID-19 pandemic and government measures taken in response have had a significant impact, both direct and indirect, on businesses and commerce, as significant reductions in business-related activities have occurred, supply chains have been disrupted and manufacturing and clinical development activities have been curtailed or suspended.

Remote work policies, quarantines, shelter-in-place and similar government orders, shutdowns or other restrictions on the conduct of business operations related to the COVID-19 pandemic could materially and adversely affect our operations. Following guidance from federal, state and local authorities, we continue to operate with a primarily remote work model. Employees working on site continue to be mostly those individuals conducting essential in-person laboratory work that cannot be conducted remotely, with heightened safety measures designed to minimize occupational exposure and reduce transmission of COVID-19 within our workplace. Although we have re-opened our facilities under these heightened safety measures, we may be forced to, or determine that we should, resume a more restrictive remote work model. In connection with these measures, we may be subject to claims based upon, arising out of or related to COVID-19 and our actions and responses thereto, including any determinations that we have made and may make in the future with respect to our onsite operations. Further, the effects of current and future governmental shelter-in-place orders and our remote work policies may materially and adversely impact productivity, disrupt our business and delay our clinical programs and timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course. For example, since we first transitioned to a remote work model in March 2020 and to date in 2021, we have experienced higher-than-normal employee turnover and an increased rate of hiring new employees. We cannot predict whether this higher turnover rate will continue and what its impact will be on productivity, whether these trends will continue or be exacerbated, when we will be permitted to, and whether we will, return to a fully office-based working model or a hybrid model, and the impacts of that decision, or whether we will be required to adopt a more restrictive work model as the pandemic evolves. Continuation of current or similar, and perhaps more severe, disruptions in our operations could materially and adversely impact our business, financial condition, results of operations and growth prospects.

As the pandemic continues, there may be additional negative impacts on our ability to initiate new clinical trial sites, maintain enrollment of existing patients and enroll new patients, which may affect timelines in the future. Our ability to attract additional clinical trial sites and principal investigators to conduct our clinical trials and to conduct the necessary clinical trial site initiation procedures has been and may continue to be impacted by quarantines, shelter-in-place and similar restrictions imposed by federal, state and local governments. These restrictions may also continue to prohibit or discourage patients from enrolling in, or continuing to participate in, our

clinical trials. Principal investigators and clinical trial site staff, as healthcare providers, may have heightened exposure to COVID-19 and if their health is impacted by COVID-19 it could adversely impact the conduct of our clinical trials at their sites. Similarly, potential participants in our clinical trials, many of whom are particularly vulnerable, may be unwilling to enroll in, and enrolled patients may be unwilling to continue to participate in, our clinical trials due to concerns about traveling to sites for required screening and clinical trial visits and procedures. In this regard, we have experienced, from time to time, a slower pace of clinical site initiation and clinical trial enrollment than originally anticipated in certain of our clinical trials, including the ALPINE 4, CATALINA and NGM120 trials, and we experienced a higher dropout rate in our ALPINE 2/3 trial than we had anticipated based on our previous trials in patients with NASH. We believe this may be due to factors such as the vulnerability of our studied patient populations, clinical trial site suspensions, reallocation of medical resources and the challenges of working remotely due to shelter-in-place and similar government orders, among other factors.

Enrolled patients may also be unable to comply with clinical trial protocols if quarantines, shelter-in-place and similar restrictions continue to impede patient movement or interrupt healthcare services. Accordingly, we have developed and implemented additional clinical study policies and procedures designed to help protect patients from COVID-19 exposure as a result of their trial participation, which include the use of telemedicine visits, remote monitoring of patients and clinical trial sites and other measures designed to ensure that data from clinical trials that may be disrupted as result of the pandemic are collected pursuant to the study protocol and consistent with current Good Clinical Practices, or cGCPs, with any material protocol deviation reviewed and approved by the clinical trial site IRB. If any of the foregoing efforts to mitigate the impact of the COVID-19 pandemic are not successful, or if the effects of the COVID-19 pandemic persist or become more severe, it could materially and adversely affect our clinical development timelines and our ability to obtain regulatory approvals of our product candidates and could significantly increase our costs.

We also could see an adverse impact on our ability to report clinical trial results, or interact with regulators, IRBs and ethics committees or other important agencies due to limitations in health authority employee resources or otherwise. Moreover, we rely on CROs and other third parties to assist us with clinical development activities, and we cannot guarantee that they will continue to perform their contractual duties in a timely and satisfactory manner as a result of the COVID-19 pandemic.

Quarantines, shelter-in-place and similar government orders could impact personnel at third-party manufacturing facilities in the United States and other countries, or the availability or cost of materials, which would disrupt our supply chain and delay our clinical development efforts. Likewise, the operations of our third-party manufacturers may be requisitioned, diverted or allocated by U.S. or foreign government orders such as under emergency, disaster and civil defense declarations in connection with the COVID-19 pandemic or otherwise. Refer the risk factor titled “We are subject to many manufacturing risks, any of which could substantially increase our costs and limit supply of our product candidates and any future products.” In any event, if the effects of the COVID-19 pandemic persist or become more severe or more acutely impact geographies with particular relevance to our business, we could experience significant disruptions to our current and potential future clinical development timelines, impacts on our ability to obtain regulatory approvals of our product candidates and increases in our costs, all or any of which would adversely affect our business, financial condition, results of operations and growth prospects.

While the potential economic impact caused by, and the duration of, the COVID-19 pandemic may be difficult to assess or predict, the pandemic could result in significant and prolonged disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect the financial resources available to us. In addition, the current recession or additional market corrections resulting from, among other things, the spread of COVID-19 could materially affect our business and the value of our common stock. We also cannot predict how the evolving effects of the COVID-19 pandemic may influence the future decisions of Merck to license any programs available to it under the Amended Collaboration Agreement.

While we expect the COVID-19 pandemic to continue to affect our business operations, the extent of the impact on our clinical development and regulatory efforts, our ability to raise sufficient additional capital on acceptable terms, if at all, the decisions of Merck and the value of and market for our common stock will depend on future developments that are highly uncertain and cannot be predicted with confidence at this time. Such developments include the ultimate duration and severity of the pandemic, travel restrictions, quarantines, social distancing and business closure requirements in the United States and in other countries, and the effectiveness of actions taken globally to contain and treat COVID-19. To the extent the evolving effects of the COVID-19 pandemic adversely affects our business and results of operations, it also may have the effect of heightening many of the other risks and uncertainties described elsewhere in this ‘‘Risk Factors’’ section.

We, our CROs, our CMOs and other third parties we rely on could experience a cybersecurity incident that could harm our business.

We collect, store and transmit proprietary, confidential and sensitive information, including personal information in the course of our business. The information and data processed and stored in our technology systems, and those of our research collaborators, CROs, CMOs, contractors, consultants and other third parties on which we depend to operate our business, may be vulnerable to security breaches, loss, damage, corruption, unauthorized access, use or disclosure or misappropriation. Such incidents also may result from errors or malfeasance by our personnel or the personnel of the third parties we work with, malware, viruses, software vulnerabilities, hacking, denial of service attacks, social engineering (including phishing), ransomware, credential stuffing or other cyberattacks, including attacks by state-sponsored organizations or sophisticated groups of hackers.

While we have developed systems and processes designed to protect the integrity, confidentiality and security of the confidential and personal information under our control, we cannot assure you that any security measures that we or our third-party service providers have implemented will be effective in preventing cybersecurity incidents. There are many different cyber-crime and hacking techniques, and as such techniques continue to evolve, we may be unable to anticipate attempted security breaches, identify them before our information is exploited or react in a timely manner.

As a result of the ongoing COVID-19 pandemic, certain functional areas of our workforce remain in a remote work environment and outside of our corporate network security protection boundaries, which imposes additional risks to our business, including increased risk of industrial espionage, phishing and other cybersecurity attacks, and unauthorized dissemination of proprietary or confidential information, any of which could have a material adverse effect on our business.

Despite our efforts to strengthen security and authentication measures, we have experienced an overall increase in cybersecurity incidents, none of which have caused material disruption to our business, or to our knowledge, involved a material security breach. In June 2019, a vendor that conducted bioanalytical services for some of our aldafermin clinical trials experienced a ransomware attack that resulted in a significant disruption to its IT systems but did not affect the integrity of our clinical sample data for aldafermin, as verified by independent vendors. More recently, in December 2020, we detected that an attacker had gained access to a single system on our network and unsuccessfully attempted to use that access to stage a broader attack against us. We or the third parties we rely on could experience a material system failure, security breach or other cybersecurity incident in the future, which could interrupt our operations, disrupt our development programs and have a material adverse effect on our business, financial condition and results of operations. For example, the loss or corruption of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on third parties for the manufacture of our product candidates, to analyze clinical trial samples and to conduct clinical trials, and cybersecurity incidents experienced by these third parties could have a material adverse effect on our business. Security breaches and other cybersecurity incidents affecting us or the third parties we rely on could also result in substantial remediation costs and expose us to litigation, regulatory enforcement action, fines, penalties and other liabilities.

We cannot be certain that our insurance coverage will be adequate for data security liabilities actually incurred, will continue to be available to us on economically reasonable terms, or at all, or that any insurer will not deny coverage as to any future claim. The successful assertion of one or more large claims against us that exceed available insurance coverage, or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could adversely affect our reputation, business, financial condition and results of operations.

We are subject to rapidly changing and increasingly stringent foreign and domestic laws and regulations relating to privacy and data protection. The restrictions imposed by these requirements or our failure to comply with them could harm our business.

We may collect, use or transfer personal information from clinical trials participants and other individuals located in the EU. Additionally, if any of our product candidates are approved, we may seek to commercialize those products in the EU. The collection and use of personal information, including health data, in the EU and EEA are governed by the General Data Protection Regulation ((EU) 2016/679), or GDPR. Companies that violate the GDPR can face private litigation, prohibitions on data processing and fines of up to the greater of 20 million Euros or 4% of their worldwide annual revenue. The GDPR requires us to give detailed disclosures about how we collect, use and share personal information; contractually commit to data protection measures in our contracts with vendors; maintain adequate data security measures; notify regulators and affected individuals of certain data breaches; meet

extensive privacy governance and documentation requirements; and honor individuals' data protection rights, including their rights to access, correct and delete their personal information.

European data protection laws, including the GDPR, generally restrict the transfer of personal information from Europe, including the European Economic Area, United Kingdom and Switzerland, to the United States and most other countries unless the receiving country offers comparable data protection laws. Decisions by the Court of Justice of the European Union, or CJEU, indicate that the United States does not offer adequate data protection that is comparable to the GDPR; however, one of the primary safeguards allowing United States companies to continue to import personal information from the EU has been the European Commission's Standard Contractual Clauses, or SCCs. SCCs are standard contractual obligations that may be entered between a party exporting personal information from the EU and a party receiving the personal information in a third country. The CJEU adopted a decision in July 2020 validating that the SCCs can lawfully be used for personal information transfers from the EU to the United States, provided that the party exporting personal information from the EU conduct an analysis of the level of data protection available and take additional steps to guarantee adequate data protection, if needed. If adequate data protection cannot be guaranteed, EU citizens may complain to the data protection authorities, which may require data transfer under the contract to be suspended.

We continue to monitor changes in European data protection laws; however, uncertainty remains regarding any future regulations, interpretations or guidance that may be issued by the European authorities. At present, we primarily rely on individuals' explicit consent to transfer their personal information from Europe to the United States and other countries, but in certain cases we have relied or may rely on the SCCs. If we are unable to rely on explicit consent to transfer individuals' personal information from Europe, which can be revoked, or implement another valid compliance solution, we will face increased exposure to substantial fines under European data protection laws as well as injunctions against the export and processing of personal information from Europe. Our inability to import personal information from the European Economic Area, United Kingdom or Switzerland may also restrict our clinical trial activities in Europe; limit our ability to collaborate with CROs, service providers, contractors and other companies subject to European data protection laws; and require us to increase our data processing capabilities in Europe at significant expense.

The UK has incorporated an amended version of the GDPR into UK law, which is independent from but aligned with the EU's GDPR. Non-compliance with the UK data protection law may result in monetary penalties of up to £17.5 million or 4% of worldwide revenue, whichever is higher. Additionally, other countries outside of Europe have enacted or are considering enacting similar cross-border data transfer restrictions and laws requiring local data residency, which could increase the cost and complexity of delivering our services and operating our business.

Privacy and data security laws in the United States are increasingly complex and changing rapidly. Just over a month after the GDPR took effect, the California legislature passed the California Consumer Privacy Act of 2018, or CCPA, which took effect on January 1, 2020. The CCPA gives California residents certain rights similar to the individual rights given under the GDPR, including the right to access and delete their personal information, opt-out of certain personal information sharing and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations. Since the enactment of the CCPA, new privacy and data security laws have been proposed in more than half of the states and in United States Congress, reflecting a trend toward more stringent privacy legislation in the United States. The CCPA itself will expand substantially as a result of California voters approving a November 2020 ballot measure that adopted the California Privacy Rights Act of 2020, which becomes fully effective on January 1, 2023, and will, among other things, create a new administrative agency to implement and enforce California's privacy laws. While certain clinical trials activities are exempt from the CCPA's requirements, other personal information that we handle may be subject to the CCPA, which may increase our compliance costs, exposure to regulatory enforcement action and other liabilities.

We use and generate materials that may expose us to material liability.

Our research programs involve the use of hazardous materials, chemicals and radioactive and biological materials. We are subject to foreign, federal, state and local environmental and health and safety laws and regulations governing, among other matters, the use, manufacture, handling, storage and disposal of hazardous materials and waste products. We may incur significant costs to comply with these current or future environmental and health and safety laws and regulations. In addition, we cannot completely eliminate the risk of contamination or injury from hazardous materials and may incur material liability as a result of such contamination or injury. In the event of an accident, an injured party may seek to hold us liable for any damages that result. Any liability could exceed the limits or fall outside the coverage of our workers' compensation, property and business interruption insurance and we may not be able to maintain insurance on acceptable terms, if at all. We currently carry no insurance specifically covering environmental claims.

Risks Related to Regulatory Approvals

The regulatory approval processes of the FDA and comparable foreign health authorities are lengthy, time-consuming and inherently unpredictable. Our inability to obtain regulatory approval for our product candidates would substantially harm our business.

Currently, none of our product candidates has received regulatory approval and we do not expect our product candidates to be commercially available for several years, if at all. The time required to obtain approval from the FDA and comparable foreign health authorities is unpredictable but typically takes many years following the commencement of preclinical studies and clinical trials and depends upon numerous factors, including the substantial discretion of the health authorities. In addition, approval policies, regulations or the type and amount of preclinical and clinical data necessary to gain approval may change during the course of a product candidate's development and may vary among jurisdictions. It is possible that none of our existing or future product candidates will ever obtain regulatory approval.

Our product candidates could fail to receive regulatory approval from the FDA or a comparable foreign health authority for many reasons, including:

- disagreement with the design or implementation of our clinical trials;
- failure to demonstrate that a product candidate is safe and effective for its proposed indication;
- failure of results of clinical trials to meet the level of statistical significance required for approval;
- failure to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- disagreement with our interpretation of data from preclinical studies or clinical trials;
- the insufficiency of data collected from clinical trials to support the submission and filing of a BLA or other submission or to obtain regulatory approval;
- failure to obtain approval of the manufacturing processes or facilities of third-party manufacturers with whom we contract for clinical and commercial supplies;
- unfavorable quality review or audit findings; or
- changes in the approval policies or regulations that render our preclinical and clinical data insufficient for approval.

The FDA or a comparable foreign health authority may require more information, including additional preclinical or clinical data, to support approval, which may delay or prevent approval and commercialization, or we may decide to abandon the development program for other reasons. If we obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, may grant approval contingent on the performance of costly post-marketing clinical trials or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate.

The FDA has a Fast Track program that is intended to expedite or facilitate the process for reviewing new drug products that meet certain criteria. Specifically, new drugs are eligible for Fast Track designation if they are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition, and the FDA may grant accelerated approval based on a surrogate endpoint reasonably likely to predict clinical benefit. However, Fast Track designation does not guarantee, or in any way change the standards for, full product approval. Accordingly, although aldafermin has received Fast Track designation from the FDA for NASH, we may not necessarily experience faster development timelines or achieve faster review or approval compared to conventional FDA procedures.

Many agents in development for NASH have, or are expected to, opt for an accelerated approval pathway and rely on surrogate endpoints for initial approval. If we seek accelerated approval for one of our product candidates based on a surrogate endpoint, the FDA may not accept such endpoint, may require additional studies or analysis or may not approve our product candidate on an accelerated basis, or at all. For example, in June 2020, Intercept Pharmaceuticals, Inc., or Intercept, announced that it had received a complete response letter regarding its New Drug Application for obeticholic acid for the treatment of NASH, in which the FDA indicated that it had determined that the predicted benefit of obeticholic acid based on a surrogate histopathologic endpoint was uncertain and did not sufficiently outweigh the potential risks to support accelerated approval for the treatment of patients with liver fibrosis due to NASH. The FDA recommended that Intercept submit additional post-interim analysis efficacy and safety data from its ongoing Phase 3 study in support of potential accelerated approval and that the long-term outcomes phase of the study should continue.

Our failure to obtain health authority approval in international jurisdictions would prevent us from marketing our product candidates outside the United States.

If we or our collaborators succeed in developing any products, we intend to market them in the EU and other foreign jurisdictions in addition to the United States. In order to market and sell our products in other jurisdictions, we must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, we must secure product reimbursement approvals before health authorities will approve the product for sale in that country. Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. Further, clinical trials conducted in one country may not be accepted by health authorities in other countries and regulatory approval in one country does not ensure approval in any other country, while a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory approval process in others. If we fail to obtain approval of any of our product candidates by health authorities in another country, we will be unable to commercialize our product in that country, and the commercial prospects of that product candidate and our business prospects could decline.

Even if our product candidates receive regulatory approval, they may still face future development and regulatory difficulties.

Even if we obtain regulatory approval for a product candidate, it would be subject to ongoing requirements by the FDA and comparable foreign health authorities governing the manufacture, quality control, further development, labeling, packaging, storage, distribution, safety surveillance, import, export, advertising, promotion, recordkeeping and reporting of safety and other post-market information. The FDA and comparable foreign health authorities will continue to closely monitor the safety profile of any product even after approval. If the FDA or comparable foreign health authorities become aware of new safety information after approval of any of our product candidates, they may require labeling changes or establishment of a Risk Evaluation and Mitigation Strategy or similar strategy, impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies or post-market surveillance.

In addition, manufacturers of drug substance and drug products and their facilities are subject to continual review and periodic inspections by the FDA and other health authorities for compliance with cGMP regulations. If we or a regulatory agency discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions on that product, the manufacturing facility or us, including requiring recall or withdrawal of the product from the market or suspension of manufacturing. If we, our product candidates or the manufacturing facilities for our product candidates fail to comply with applicable regulatory requirements, or undesirable side effects caused by such products are identified, a regulatory agency may:

- issue safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings about such product;
- mandate modifications to promotional materials or require us to provide corrective information to healthcare practitioners;
- require that we conduct post-marketing studies;
- require us to enter into a consent decree, which can include imposition of various fines, reimbursements for inspection costs, required due dates for specific actions and penalties for noncompliance;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend marketing of, withdraw regulatory approval of or initiate a recall of such product;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to applications filed by us;
- suspend or impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products or refuse to permit the import or export of products.

The occurrence of any event or penalty described above may inhibit our ability to commercialize our products and generate revenue.

Advertising and promotion of any product candidate that obtains approval in the United States will be heavily scrutinized by the FDA, Department of Justice, HHS, Office of Inspector General, state attorneys general, members of Congress and the public. Violations, including promotion of our products for unapproved (or off-label) uses, are subject to enforcement letters, inquiries and investigations and civil and criminal sanctions by the government. Additionally, comparable foreign health authorities will heavily scrutinize advertising and promotion of any product candidate that obtains approval outside of the United States.

In the United States, engaging in the impermissible promotion of our products for off-label uses can subject us to false claims litigation under federal and state statutes, which can lead to civil and criminal penalties and fines and agreements that materially restrict the manner in which a company promotes or distributes drug products. These false claims statutes include the federal FCA, which allows any individual to bring a lawsuit against a pharmaceutical company on behalf of the federal government alleging submission of false or fraudulent claims, or causing to present such false or fraudulent claims, for payment by a federal program such as Medicare or Medicaid. If the government prevails in the lawsuit, the individual will share in any fines or settlement funds. Since 2004, these FCA lawsuits against pharmaceutical companies have increased significantly in volume and breadth, leading to several substantial civil and criminal settlements regarding certain sales practices promoting off-label drug uses involving fines in excess of $1 billion. This growth in litigation has increased the risk that a pharmaceutical company will have to defend a false claim action, pay settlement fines or restitution, agree to comply with burdensome reporting and compliance obligations and be excluded from Medicare, Medicaid and other federal and state healthcare programs. If we do not lawfully promote our approved products, we may become subject to such litigation and, if we do not successfully defend against such actions, those actions may have a material adverse effect on our business, financial condition and results of operations.

The FDA's policies may change, and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability.

Even if we are able to obtain regulatory approvals for any of our product candidates, if they exhibit harmful side effects after approval, our regulatory approvals could be revoked or otherwise negatively impacted.

Even if we receive regulatory approval for aldafermin or any of our other product candidates, we will have tested them in only a small number of patients during our clinical trials. If our applications for marketing are approved and more patients begin to use our product, new risks and side effects associated with our products may be discovered. As a result, health authorities may revoke their approvals. If aldafermin is approved by the FDA based on a surrogate endpoint pursuant to accelerated approval regulations (Subpart E regulations), we will be required to conduct additional clinical trials establishing clinical benefit on the ultimate outcome of NASH. Additionally, we may be required to conduct additional clinical trials, make changes in labeling of our product, reformulate our product or make changes and obtain new approvals for our and our suppliers' manufacturing facilities for aldafermin and our other product candidates. We might have to withdraw or recall our products from the marketplace. We may also experience a significant drop in the potential sales of our product if and when regulatory approvals for such product are obtained, experience harm to our reputation in the marketplace or become subject to lawsuits, including class actions. Any of these results could decrease or prevent any sales of our approved product or substantially increase the costs and expenses of commercializing and marketing our product.

Risks Related to Our Intellectual Property

Our success depends in significant part upon our ability to obtain and maintain intellectual property protection for our products and technologies.

Our success depends in significant part on our ability and the ability of our current or future licensors, licensees or collaborators to establish and maintain adequate intellectual property covering the product candidates that we plan to develop. In addition to taking other steps designed to protect our intellectual property, we have applied for, and intend to continue applying for, patents with claims covering our technologies, processes and product candidates when and where we deem it appropriate to do so. However, the patent prosecution process is expensive and time-consuming, and we and our current or future licensors, licensees or collaborators may not be able to prepare, file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we or our current or future licensors, licensees or collaborators will fail to identify patentable aspects of inventions made in the course of development and commercialization activities before it is too late to obtain patent protection for them. Pending and future patent applications filed by us or our current or future

licensors', licensees' or collaborators' may not result in patents being issued that protect our technology or product candidates, or products resulting therefrom, in whole or in part, or that effectively prevent others from commercializing competitive technologies and products.

We have filed numerous patent applications both in the United States and in certain foreign jurisdictions to obtain patent rights to our inventions, with claims directed to compositions-of-matter, methods of use, formulations, combination therapy and other technologies relating to our product candidates. There can be no assurance that any of these patent applications will issue as patents or, for those applications that do mature into patents, whether the claims of the patents will exclude others from making, using or selling our product or product candidates, or products or product candidates that are substantially similar to ours. In countries where we have not and do not seek patent protection, third parties may be able to manufacture and sell products that are substantially similar or identical to our products or product candidates without our permission, and we may not be able to stop them from doing so.

Similar to other biotechnology companies, our patent position is generally highly uncertain and involves complex legal and factual questions. In this regard, we cannot be certain that we or our current or future licensors, licensees or collaborators were the first to make an invention, or the first inventors to file a patent application claiming an invention in our owned or licensed patents or pending patent applications. In addition, even if patents are issued, given the amount of time required for the development, testing and regulatory review of our product candidates, any patents protecting such candidates might expire before or shortly after the resulting products are commercialized. Moreover, the laws and regulations governing patents could change in unpredictable ways that could weaken the ability of us and our current or future licensors, licensees or collaborators to obtain new patents or to enforce existing patents and patents we may obtain in the future. In any event, the issuance, scope, validity, enforceability and commercial value of our patent rights and those of our current or future licensors, licensees or collaborators are highly uncertain and may not effectively prevent others from commercializing competitive technologies and products.

In some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain or enforce the patents, covering technology that we license from or license to third parties and may be reliant on our current or future licensors, licensees or collaborators to perform these activities, which means that these patent applications may not be prosecuted, and these patents may not be enforced, in a manner consistent with the best interests of our business. If our current or future licensors, licensees or collaborators fail to establish, maintain, protect or enforce such patents and other intellectual property rights, such rights may be reduced or eliminated. If our current or future licensors, licensees or collaborators are not fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, such patent rights could be compromised.

In addition, the legal protection afforded to inventors and owners of intellectual property in countries outside of the United States may not be as broad or effective as that in the United States and we may be unable to acquire and enforce intellectual property rights outside the United States to the same extent as in the United States, if at all. Accordingly, our efforts, and those of our licensors, licensees or collaborators, to enforce intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we own or license.

We do not currently own or have a license to any issued patents that cover our NGM621 product candidate, although it is disclosed and claimed in our pending U.S. non-provisional and/or national stage applications in particular foreign countries. Likewise, we do not currently own or have a license to any issued patents that cover our NGM707 and NGM438 product candidates, although these product candidates are disclosed and claimed in our pending U.S. provisional applications. The patent landscape surrounding all of our product candidates is crowded, and there can be no assurance that we will be able to secure patent protection that would adequately cover such product candidates, nor can there be any assurance that we would obtain sufficiently broad claims to be able to prevent others from selling competing products.

Any changes we make to our product candidates to cause them to have what we view as more advantageous properties may not be covered by our existing patents and patent applications, and we may be required to file new patent applications and/or seek other forms of protection for any such altered product candidates. The patent landscape surrounding the technology underlying our product candidates is crowded, and there can be no assurance that we would be able to secure patent protection that would adequately cover an alternative to our aldafermin molecule, including half-life extending formulation enhancements or the half-life extended variants of FGF19 that we are developing, NGM621, NGM120, NGM707 and NGM438 or any of our other product candidates.

We may be unable to obtain intellectual property rights or technologies necessary to develop and commercialize our product candidates.

Several third parties are actively researching and seeking and obtaining patent protection in the fields of retinal diseases, cancer, CVM-related diseases, including heart failure, and liver and metabolic diseases, and there are issued third-party patents and published third-party patent applications in these fields. The patent landscape around our product candidates is complex, and we are aware of several third-party patents and patent applications containing claims directed to compositions-of-matter, methods of use and related subject matter, some of which pertain, at least in part, to subject matter that might be relevant to our product candidates. However, we may not be aware of all third-party intellectual property rights potentially relating to our product candidates and technologies.

Depending on what patent claims ultimately issue and how courts construe the issued patent claims, as well as the ultimate formulation and method of use of our product candidates, we may need to obtain a license to practice the technology claimed in such patents. There can be no assurance that such licenses will be available on commercially reasonable terms, or at all. If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing rights to third-party intellectual property rights we have, we might be unable to develop and commercialize one or more of our product candidates, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

We could lose the ability to continue the development and commercialization of our products or product candidates if we breach any license agreement related to those products or product candidates.

Our commercial success depends upon our ability, and the ability of our current and future licensors, licensees and collaborators, to develop, manufacture, market and sell our products and product candidates and use our proprietary technologies without infringing the proprietary rights of third parties. A third party may hold intellectual property rights, including patent rights that are important or necessary to the development of our products. As a result, we are a party to a number of technology and patent licenses that are important to our business and we expect to enter into additional licenses in the future. If we fail to comply with the obligations under these agreements, including payment and diligence obligations, our licensors may have the right to terminate these agreements. In the event of a termination of these agreements, we may not be able to develop, manufacture, market or sell any product that is covered by these agreements or to engage in any other activities necessary to our business that require the freedom-to-operate afforded by the agreements, or we may face other penalties under the agreements. For example, we are party to license agreements with multiple vendors, including our licenses with Horizon Discovery Ltd. and Lonza Sales AG, under which we license cell lines and other technology used to produce multiple product candidates, including some that are currently subject to our collaboration with Merck. We require prior consent from some of these vendors to grant sub-licenses under these agreements. Therefore, these vendors may be able to prevent us from granting sub-licenses to third parties, which could affect our ability or Merck's ability to use certain desired manufacturers in order to manufacture our product candidates. In the event of a termination of our license agreements, our ability or Merck's ability to manufacture or develop any product candidates covered by these agreements may be limited or halted unless we can develop or obtain the rights to technology necessary to produce these product candidates.

Any of the foregoing could materially adversely affect the value of the product or product candidate being developed under any such agreement. Termination of these agreements or reduction or elimination of our rights under these agreements may result in our having to negotiate new or amended agreements, which may not be available to us on equally favorable terms, or at all, or cause us to lose our rights under these agreements, including our rights to intellectual property or technology important to our development programs.

We may become involved in lawsuits or other proceedings to protect or enforce our intellectual property, which could be expensive, time-consuming and unsuccessful and have a material adverse effect on the success of our business.

Third parties may infringe patents or misappropriate or otherwise violate intellectual property rights owned or controlled by us or our current or future licensors, licensees or collaborators. In the future, it may be necessary to initiate legal proceedings to enforce or defend these intellectual property rights, to protect trade secrets or to determine the validity or scope of intellectual property rights that are owned or controlled by us or our current or future licensors, licensees or collaborators. Litigation could result in substantial costs and diversion of management resources, which could harm our business and financial results.

If we or our current or future licensors, licensees or collaborators initiated legal proceedings against a third party to enforce a patent covering a product candidate, the defendant could counterclaim that such patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or

unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the United States Patent and Trademark Office, or USPTO, or made a misleading statement, during prosecution. In an infringement or declaratory judgment proceeding, a court may decide that a patent owned by or licensed to us or our current or future licensors, licensees or collaborators is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that the patent does not cover the technology in question. An adverse result in any litigation proceeding could put one or more of the patents at risk of being invalidated, narrowed, held unenforceable or interpreted in such a manner that would not preclude third parties from entering the market with competing products.

Third parties may initiate legal proceedings against us or our current or future licensors, licensees or collaborators to challenge the validity or scope of intellectual property rights we own or control. For example, generic or biosimilar drug manufacturers or other competitors or third parties may challenge the scope, validity or enforceability of patents owned or controlled by us or our current or future licensors, licensees or collaborators. These proceedings can be expensive, lengthy and time-consuming, and many of our adversaries may have the ability to dedicate substantially greater resources to prosecuting these legal actions than us. Accordingly, despite our efforts, we or our current or future licensors, licensees or collaborators may not be able to prevent third parties from infringing upon or misappropriating intellectual property rights we own, control or have rights to, particularly in countries where the laws may not protect those rights as fully as in the United States.

There is a risk that some of our confidential information could be compromised by disclosure during litigation because of the substantial amount of discovery required. Additionally, many foreign jurisdictions have rules of discovery that are different than those in the United States and that may make defending or enforcing our patents extremely difficult. There also could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of shares of our common stock.

Third-party pre-issuance submission of prior art to the USPTO, opposition, derivation, revocation, reexamination, inter partes review or interference proceedings, or other pre-issuance or post-grant proceedings, as well as other patent office proceedings or litigation in the United States or other jurisdictions brought by third parties against patents or patent applications owned or controlled by us or our current or future licensors, licensees or collaborators, may be necessary to determine the inventorship, priority, patentability or validity of these patents or patent applications. An unfavorable outcome could leave our technology or product candidates without patent protection and allow third parties to commercialize our technology or product candidates without payment to us. Additionally, potential licensees or collaborators could be dissuaded from collaborating with us to license, develop or commercialize current or future product candidates if the breadth or strength of protection provided by our patents and patent applications is threatened. Even if we successfully defend such litigation or proceeding, we may incur substantial costs and it may distract our management and other employees.

Third parties may initiate legal proceedings against us alleging that we infringe their intellectual property rights or we may initiate legal proceedings against third parties to challenge the validity or scope of the third-party intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.

Third parties may initiate legal proceedings against us or our current or future licensors, licensees or collaborators alleging that we infringe their intellectual property rights. Alternatively, we may initiate legal proceedings to challenge the validity or scope of intellectual property rights controlled by third parties, including in oppositions, interferences, revocations, reexaminations, inter partes review or derivation proceedings before the USPTO or its counterparts in other jurisdictions. In this regard, we are aware of several third-party patents and patent applications containing claims directed to compositions-of-matter, methods of use and related subject matter, some of which pertain, at least in part, to subject matter that might be relevant to our product candidates. These proceedings can be expensive, lengthy and time-consuming, and many of our adversaries may have the ability to dedicate substantially greater resources to prosecuting these legal actions than us.

In addition, we may be subject to claims that we or our employees have used or disclosed confidential information or intellectual property, including trade secrets or other proprietary information, of any such employee's former employer, or that third parties have an interest in our patents as an inventor or co-inventor. Likewise, we and our current or future licensors, licensees or collaborators may be subject to claims that former employees, collaborators or other third parties have an interest in our owned or in-licensed patents, trade secrets or other intellectual property as an inventor or co-inventor. Litigation may be necessary to defend against these claims.

Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability or priority. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity in favor of the granted third party patent. This is a high burden, requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim.

An unfavorable outcome in any such proceeding could require us and our current or future licensors, licensees or collaborators to cease using the related technology or developing or commercializing the product or product candidate, or to attempt to license rights to it from the prevailing party, which may not be available on commercially reasonable terms, or at all. Additionally, we could be found liable for monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially harm our business.

Risks Related to Ownership of Our Common Stock

The market price of our common stock has been and may continue to be volatile, and you could lose all or part of your investment

The market price for our common stock has fluctuated significantly from time to time, for example, varying between a high of $32.12 on March 17, 2021 and a low of $8.81 on October 7, 2019. The trading price of our common stock has been and may continue to be highly volatile and subject to wide fluctuations in response to various factors, some of which we cannot control. In addition to the factors discussed in this "Risk Factors" section, these factors include:

- developments associated with our collaboration with Merck or any termination of the collaboration;
- the success of competitive products or technologies, including disclosure of interim data by our competitors;
- regulatory actions with respect to our product candidates or our competitors' product candidates or products;
- results of clinical trials of our product candidates or those of our competitors;
- timeline delays in our clinical trials, including delays resulting from the evolving effects of the global COVID-19 pandemic or otherwise;
- actual or anticipated changes in our growth rate relative to our competitors;
- announcements by us or our competitors or collaborators of significant acquisitions, strategic collaborations, joint ventures, collaborations or capital commitments;
- regulatory, legal or payor developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our product candidates or clinical development programs;
- the results of our efforts to in-license or acquire additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- announcement or expectation of additional financing efforts;
- sales of our common stock by us, our insiders or our other stockholders;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors; and
- general economic, industry and market conditions.

In addition, the stock market in general, and The Nasdaq Global Select Market and biotechnology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies, including in connection with the ongoing COVID-19 pandemic, which has resulted in decreased stock prices for many companies notwithstanding the lack of a fundamental change in their underlying business models or prospects. Broad market and industry factors,

including worsening economic conditions and other adverse effects or developments relating to the evolving effects of the COVID-19 pandemic, may negatively affect the market price of our common stock, regardless of our actual operating performance. The realization of any of the above risks or any of a broad range of other risks, including those described in this “Risk Factors” section, could have a dramatic and material adverse impact on the market price of our common stock.

Because of potential volatility in our trading price and trading volume, we may incur significant costs from class action securities litigation.

Holders of stock in companies that have a volatile stock price frequently bring securities class action litigation against the company that issued the stock. We may be the target of this type of litigation in the future. If any of our stockholders were to bring a lawsuit of this type against us, even if the lawsuit is without merit, we could incur substantial costs defending the lawsuit and the time and attention of our management could be diverted from other business concerns, either of which could seriously harm our business. Refer also to the risk factor entitled “Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.”

An active trading market for our common stock may not be sustained.

Our common stock is currently listed on The Nasdaq Global Select Market under the symbol “NGM” and trades on that market. We cannot ensure that an active trading market for our common stock will be sustained. Accordingly, we cannot ensure the liquidity of any trading market, your ability to sell your shares of our common stock when desired or the prices that you may obtain for your shares.

Our principal stockholders, including entities affiliated with The Column Group, Merck and management, own a substantial percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

Our executive officers, directors, significant stockholders, including entities affiliated with The Column Group and Merck, and their respective affiliates, beneficially own a substantial amount of our voting stock. These stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents or approval of any merger, sale of assets or other major corporate transaction. The interests of this group of stockholders may not always coincide with your interests or the interests of other stockholders. In addition, if any of our significant stockholders decide to sell a meaningful amount of their ownership position and there is not sufficient demand in the market for such stocks, our stock price could fall.

We are currently an “emerging growth company” as defined in the JOBS Act and are currently able to avail ourselves of reduced disclosure requirements applicable to emerging growth companies, which could make our common stock less attractive to investors and adversely affect the market price of our common stock.

We are currently an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, as amended, the JOBS Act, though we expect we will no longer be an emerging growth company as of December 31, 2021. While we remain an emerging growth company, we have taken and may continue to take advantage of certain exemptions from various requirements applicable to public companies that are not “emerging growth companies” including:

- the provisions of Section 404(b) of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, requiring that our independent registered public accounting firm provide an attestation report on the effectiveness of our internal control over financial reporting;
- the “say on pay” provisions (requiring a non-binding stockholder vote to approve compensation of certain executive officers) and the “say on golden parachute” provisions (requiring a non-binding stockholder vote to approve golden parachute arrangements for certain executive officers in connection with mergers and certain other business combinations) of the Dodd-Frank Wall Street Reform and Protection Act, or the Dodd-Frank Act, and some of the disclosure requirements of the Dodd-Frank Act relating to compensation of our chief executive officer; and
- the requirement to provide detailed compensation discussion and analysis in proxy statements and reports filed under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and instead provide a reduced level of disclosure concerning executive compensation.

Because our independent registered public accounting firm has not been required to provide an attestation report on the effectiveness of our internal control over financial reporting, the risk that material weaknesses or significant deficiencies in our internal control over financial reporting go undetected may have been increased. Likewise, our election not to provide certain information, including certain financial information and certain information regarding compensation of our executive officers, that we would otherwise have been required to provide in filings we make with the U.S. Securities and Exchange Commission, or SEC, may have made it or may make it more difficult for investors and securities analysts to evaluate our company.

With respect to the JOBS Act, we also took advantage of some, but not all, of the reduced regulatory and reporting requirements that were available to us as an emerging growth company. For example, we are not currently subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. As a result, changes in U.S. generally accepted accounting principles or their interpretation, the adoption of new guidance or the application of existing guidance to changes in our business could significantly affect our financial position and results of operations.

We cannot predict if investors will find our common stock less attractive because we have relied and may continue to rely on these exemptions and reduced requirements during the pendency of our emerging growth company status. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile and may decline.

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

For the trading days during the three months ended December 31, 2020, the average daily trading volume for our common stock on The Nasdaq Global Select Market was only 175,778 shares. As a result, sales of a substantial number of shares of our common stock in the public market, including pursuant to the Sales Agreement or by any of our large stockholders, or even the perception in the market that we or the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. In addition, as a result of the low trading volume of our common stock, the trading of relatively small quantities of shares by our stockholders could disproportionately influence the market price of our common stock in either direction. The price for our shares could, for example, decline significantly in the event that a large number of shares of our common stock are sold on the market without commensurate demand, as compared to an issuer with a higher trading volume that could better absorb those sales without an adverse impact on its stock price. Moreover, certain holders of our common stock have rights, subject to certain conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders.

We do not intend to pay dividends on our common stock so any returns will be limited to the value of our stock.

We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any return to stockholders will therefore be limited to the appreciation of their stock, if any.

Some provisions of our charter documents, Delaware law and our agreement with Merck may have anti-takeover effects or could otherwise discourage an acquisition of us by others, even if an acquisition would benefit our stockholders, and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders, or to remove our current management. These provisions include:

- a board of directors divided into three classes serving staggered three-year terms, such that not all members of the board will be elected at one time;
- authorizing the issuance of “blank check” preferred stock, the terms of which we may establish and shares of which we may issue without stockholder approval;
- prohibiting cumulative voting in the election of directors, which would otherwise allow for less than a majority of stockholders to elect director candidates;
- prohibiting stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of our stockholders;

- eliminating the ability of stockholders to call a special meeting of stockholders; and
- establishing advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at stockholder meetings.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, who are responsible for appointing the members of our management. Because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, or DGCL, which may discourage, delay or prevent someone from acquiring us or merging with us whether or not it is desired by or beneficial to our stockholders. In addition, Section 203 of the DGCL prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder, which is generally a person that together with its affiliates owns, or within the last three years has owned, 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner.

Certain provisions in our agreement with Merck may also deter a change of control. For example, under the current terms of our agreement with Merck, a change of control gives Merck the right to terminate the research phase of the collaboration as well as additional rights if our acquirer is a qualifying large pharmaceutical company or has a research, development or commercialization program that competes with a program licensed by Merck.

Any provision of our amended and restated certificate of incorporation, amended and restated bylaws, Delaware law or our agreement with Merck that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States will be the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: any derivative action or proceeding brought on our behalf; any action asserting a breach of a fiduciary duty; any action asserting a claim against us arising pursuant to the DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. This provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act, or any other claim for which the federal courts have exclusive jurisdiction. Furthermore, Section 22 of the Securities Act of 1933, as amended, or the Securities Act, creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation further provides that the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find either exclusive-forum provision in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could seriously harm our business.

General Risk Factors

New tax laws or regulations, changes to existing tax laws or regulations or changes in their application to us or our customers may have a material adverse effect on our business, cash flows, financial condition or results of operations.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, which could adversely affect our business and financial condition. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. For example, the 2017 Tax Act sanctioned many significant changes to the U.S. tax laws. Future guidance from the U.S. Internal Revenue Service, or IRS, and other tax authorities with respect to the 2017 Tax Act may affect us, and certain aspects of the 2017 Tax Act may be repealed or modified in future legislation. For example, the CARES Act modified certain provisions of the 2017 Tax Act. Changes in corporate tax rates, the realization of net deferred tax assets relating to our operations, the taxation of foreign earnings and the deductibility of expenses under the 2017 Tax Act or future reform legislation could have a material impact on the value of our deferred tax assets, could result in significant one-time charges and could increase our future U.S. tax expense.

Future changes in financial accounting standards or practices may cause adverse and unexpected revenue fluctuations and adversely affect our reported results of operations.

Future changes in financial accounting standards may cause adverse, unexpected revenue fluctuations and affect our reported financial position or results of operations. Financial accounting standards in the United States are constantly under review and new pronouncements and varying interpretations of pronouncements have occurred frequently in the past and are expected to occur again in the future. As a result, we may be required to make changes in our accounting policies. Those changes could affect our financial condition and results of operations or the way in which such financial condition and results of operations are reported. Compliance with new accounting standards may also result in additional expenses. As a result, we intend to invest all reasonably necessary resources to comply with evolving standards, and this investment may result in increased general and administrative expenses and a diversion of management time and attention from business activities to compliance activities.

We incur increased costs as a result of operating as a public company, and our management devotes substantial time to new compliance initiatives.

As a public company, we incur significant legal, accounting, insurance and other expenses that we did not incur as a private company, and these expenses will further increase in connection with our expected loss of “emerging growth company” status as of December 31, 2021. As a public company, we are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act and the Dodd-Frank Act, as well as rules adopted, and to be adopted, by the SEC and The Nasdaq Global Select Market. Our management and other personnel devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations increase our legal and financial compliance costs and may make some activities more time-consuming and costly. The increased costs will increase our net loss. For example, these rules and regulations make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain sufficient coverage. We cannot predict or estimate the amount or timing of additional costs we may incur in the future to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers.

Specifically, in order to comply with the requirements of being a public company, we need to undertake various actions, including maintaining effective internal controls and procedures. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are continuing to develop and refine our disclosure controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and that information required to be disclosed in reports under the Exchange Act is accumulated and communicated to our principal executive and financial officers. In addition, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act, and to allow our independent registered public accounting firm to issue an attestation report on the effectiveness of our internal control over financial reporting beginning with our annual report on Form 10-K for the fiscal year ending December 31, 2021. Our compliance with Section 404 of the Sarbanes-Oxley Act requires that we incur substantial accounting expense and

expend significant management efforts. We currently do not have an internal audit staff, and we have hired and will need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. If we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, investors may lose confidence in our operating results and the price of our common stock could decline. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on The Nasdaq Global Select Market.

Our ability to successfully implement our business plan and comply with Section 404 of the Sarbanes-Oxley Act requires us to be able to prepare timely and accurate financial statements. We expect that we will need to continue to improve existing, and implement new operational and financial systems, procedures and controls to manage our business effectively. Any delay in the implementation of, or disruption in the transition to, new or enhanced systems, procedures or controls, may cause our operations to suffer and we may be unable to conclude that our internal control over financial reporting is effective and to obtain an attestation report from our independent registered public accounting firm as required under Section 404 of the Sarbanes-Oxley Act. This, in turn, could have an adverse impact on the price for our common stock, and could adversely affect our ability to access the capital markets

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We designed our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research, about our business, our stock price and trading volume could decline.

Our stock price and trading volume is heavily influenced by the way analysts and investors interpret our clinical trial results, financial information and other disclosures. If securities or industry analysts do not publish research or reports about our business, delay publishing reports about our business or publish negative reports about our business, regardless of accuracy, our stock price and trading volume could decline.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

None.

Item 3. Defaults Upon Senior Securities.

Not applicable.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

Exhibit Number	Description	Incorporated by Reference			
		Schedule Form	File Number	Exhibit	Filing Date
3.1	Amended and Restated Certificate of Incorporation	8-K	001-38853	3.1	4/8/19
3.2	Amended and Restated Bylaws	S-1	333-227608	3.4	9/28/18
10.1+*	Amended and Restated Research Collaboration, Product Development and License Agreement, made effective as of June 30, 2021, by and between NGM Biopharmaceuticals, Inc. and Merck Sharp & Dohme Corp.				
10.2+	Forms of Stock Option Agreement and Notice of Grant of Stock Option for Non-employee Directors Under the Amended and Restated 2018 Equity Incentive Plan				
31.1+	Certification of Chief Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				
31.2+	Certification of Chief Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				
32.1+**	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				
101.INS	Inline XBRL Instance Document				
101.SCH	Inline XBRL Taxonomy Extension Schema Document				
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document				
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document				
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document				
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)				

+ Filed herewith.

* Certain confidential information contained in this exhibit has been omitted because it is both not material and is of the type that the Registrant treats as private or confidential.

** The certification attached as Exhibit 32.1 accompanies this Quarterly Report on Form 10-Q pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed “filed” by the Registrant for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

NGM Biopharmaceuticals, Inc.

Date: August 5, 2021 By: /s/ David J. Woodhouse
David J. Woodhouse, Ph.D.
Chief Executive Officer and Director

Date: August 5, 2021 By: /s/ Siobhan Nolan Mangini
Siobhan Nolan Mangini
Chief Financial Officer
(Principal Financial Officer)

CERTAIN IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS BOTH NOT MATERIAL AND IS OF THE TYPE THAT THE COMPANY TREATS AS PRIVATE OR CONFIDENTIAL

AMENDED AND RESTATED
RESEARCH COLLABORATION, PRODUCT DEVELOPMENT AND LICENSE AGREEMENT

by and between

NGM BIOPHARMACEUTICALS, INC.

and

MERCK SHARP & DOHME CORP.

AMENDED AND RESTATED RESEARCH COLLABORATION, PRODUCT DEVELOPMENT AND LICENSE AGREEMENT

This Amended and Restated Research Collaboration, Product Development and License Agreement (this "**Agreement**") is effective as of June 30, 2021 (the "**A&R Effective Date**"), and is entered into by and between NGM BIOPHARMACEUTICALS, INC., a corporation organized and existing under the laws of Delaware ("**NGM**") and MERCK SHARP & DOHME CORP., a corporation organized and existing under the laws of Delaware ("**Merck**"). Each of Merck and NGM may be referred to herein individually as a "**Party**" and collectively as "**Parties**."

RECITALS:

WHEREAS, NGM is a drug discovery company with a unique research platform for the identification of drug targets and expertise in the discovery and development of transformational biologics;

WHEREAS, as of the Original Execution Date (as hereinafter defined), NGM had a research and development program with respect to its proprietary NP201 Compounds (as hereinafter defined) and controlled certain intellectual property and technology in connection therewith;

WHEREAS, Merck and its Affiliates possess expertise in the research, development and commercialization of pharmaceutical products;

WHEREAS, the Parties executed that certain Research Collaboration, Product Development and License Agreement on February 18, 2015 (such date, the "**Original Execution Date**" and such agreement, as amended by the First Amendment to Research Collaboration, Product Development and License Agreement effective as of January 1, 2016, the letter agreement entered into by the Parties dated March 15, 2019, the letter agreement entered into by the Parties dated October 2, 2019 and the letter agreement entered into by the Parties dated March 12, 2021, the "**Original Agreement**"), pursuant to which (a) the Parties established a broad research and development collaboration across NGM's then present and future portfolio of unpartnered drug candidates, (b) Merck obtained a license to NP201 Compounds, (c) NGM pursued compelling and therapeutically-useful biology that was disease area agnostic, and further innovated in antibody and protein engineering to discover, develop and deliver especially inventive, novel therapies that could improve the lives of patients around the world and that had unambiguous, promotable advantages with respect to existing treatments, and (d) Merck (i) pursuant to the Original Agreement had the option and (ii) pursuant to this Agreement, has the option, in each case, to develop and commercialize such therapies upon reaching milestones designated therein and herein, as applicable;

WHEREAS, pursuant to a letter dated March 1, 2019, Merck terminated the NP201 Program for convenience pursuant to Section 13.2.2 of the Original Agreement, and the effective date of such termination was May 31, 2019;

WHEREAS, pursuant to an email between [***] dated [***], Merck was permitted to continue certain research activities using the NP201 Compounds;

WHEREAS, the Parties desire to amend and restate the Original Agreement to (a) focus the research and development collaboration going forward from and after the A&R Effective Date to certain drug candidates and targets specified herein in the field of ophthalmology, the field of cardiovascular and metabolic diseases and, with respect to [***] only, the field of [***], (b) specify the options granted to Merck to develop and commercialize such therapies upon reaching milestones designated herein, (c) allow NGM to continue researching and developing all Other Collaboration Compounds (as defined herein) and all Selected Oncology Collaboration Compounds (as defined herein), which are outside of this revised collaboration scope, as Non-Qualifying Compounds pursuant to the terms and conditions of this Agreement, and (d) grant Merck certain rights of negotiation over the research programs related to such Other Collaboration Compounds and Selected Oncology Collaboration Compounds, in each case (a) – (d), pursuant to the terms and conditions of this Agreement.

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants herein contained, the receipt and sufficiency of which are hereby acknowledged, Merck and NGM hereby agree as follows:

ARTICLE 1
DEFINITIONS

Unless specifically set forth to the contrary herein, the following terms, whether used in the singular or plural, shall have the respective meanings set forth below.

1.1 "**A&R Effective Date**" shall have the meaning set forth in the preamble to this Agreement.

1.2 "**AAA**" shall have the meaning set forth in Section 16.7.1.

1.3 "**Acquiror**" shall have the meaning set forth in Section 14.3.

1.4 "**Act**" shall mean, as applicable, the United States Federal Food, Drug and Cosmetic Act, 21 U.S.C. §§ 301 et seq., and/or the Public Health Service Act, 42 U.S.C. §§ 262 et seq., as such may be amended from time to time.

1.5 "**Additional CVM Collaboration Target**" shall mean any human DNA sequence, RNA sequence, protein or peptide recommended by NGM for inclusion in the CVM Research Program and for which Merck provides notice of its inclusion decision in accordance with Section 4.1.10.

1.6 "**Adjusted Net Sales**" or "**ANS**" shall have the meaning set forth in Schedule 1.6.

1.7 "**Advanced Amounts**" shall have the meaning set forth in Section 7.5.2.

1.8 "**Affiliate**" shall mean, with respect to any Person, any other Person that directly or indirectly controls, is controlled by or is under common control with such Person. A Person shall be deemed to control another Person if such Person possesses the power to direct or cause the direction of the management, business and policies of such Person, whether through the ownership of more than fifty percent (50%) of the voting securities of such Person, by contract or otherwise.

1.9 "**Agreement**" shall have the meaning set forth in the preamble to this document.

1.10 "**Agreement Payments**" shall have the meaning set forth in Section 9.11.1.

1.11 "**Alliance Manager**" shall have the meaning set forth in Section 2.12.

1.12 "**Allowable Expenses**" shall have the meaning set forth in Schedule 1.6.

1.13 "**Alternative Ophthalmology Merck Option"** shall have the meaning set forth in Section 5.2.1(b).

1.14 "**Anti**-[***] **Collaboration Compound**" shall mean any Collaboration Compound (which may be an antibody drug conjugate) that Modulates [***], alone or together with its co-receptors, as an inhibitor or antagonist in a manner that satisfies the applicable Physiologically Relevant Threshold.

1.15 "**Anti-C3 Collaboration Compounds**" shall have the meaning set forth in Section 1.73.

1.16 "**Anti**-[***] **Collaboration Compounds**" shall have the meaning set forth in Section 1.73.

1.17 "**Anti**-[***] **Collaboration Compounds**" shall have the meaning set forth in Section 1.73.

1.18 "**Antitrust Approvals**" shall have the meaning set forth in Section 16.18.2.

1.19 "**Auditee**" shall have the meaning set forth in Section 9.9.1.

1.20 "**Auditing Party**" shall have the meaning set forth in Section 9.9.1.

1.21 "[***]" shall mean [***].

1.22 "[***] **Merck Option**" shall have the meaning set forth in Section 5.2.1(d).

1.23 "[***] **Research Program**" shall have the meaning set forth in Section 2.1.2(c).

1.24 "[***] **Research Program Tail Compounds**" shall have the meaning set forth in Section 4.4.1(a)(ii).

1.25 "[***] **Research Program Tail Compounds/Targets**" shall mean the [***] Research Program Tail Compounds and [***] Research Program Tail Targets.

1.26 "[***] **Research Program Tail Period**" shall mean a Tail Period that Merck elects with respect to the [***] Research Program pursuant to Section 4.4.1(a)(ii).

1.27 "[***] **Research Program Tail Target**" shall have the meaning set forth in Section 4.4.1(a)(ii).

1.28 "[***] **Research Program Term**" shall have the meaning set forth in Section 4.1.3(c).

1.29 "**Back-up Product/Compound**" shall have the meaning set forth in Section 9.5.1(b).

1.30 "**Back-up Research Program Development Candidate**" shall have the meaning set forth in Section 9.5.1(a).

1.31 "**Bankrupt Party**" shall have the meaning set forth in Section 16.3.

1.32 "**Baseline Budget Overage**" shall have the meaning set forth in Section 7.5.3(a).

1.33 "**Baseline Projected Plans and Budgets**" shall have the meaning set forth in Section 7.5.3(a).

1.34 "**Business Day**" shall mean a day other than a Saturday, Sunday or a day that is a bank holiday in the US.

1.35 "**Calendar Quarter**" shall mean the respective periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 and December 31; provided, however, that the first Calendar Quarter of the Term shall begin on the Original Effective Date and end on the last day of the then current Calendar Quarter and the last Calendar Quarter of the Term shall begin on the first day of such Calendar Quarter and end on the last day of the Term.

1.36 "**Calendar Year**" shall mean each successive period of twelve (12) months commencing on January 1 and ending on December 31; provided, however, that the first Calendar Year of the Term shall begin on the Original Effective Date and end on December 31 of the then current Calendar Year and the last Calendar Year of the Term shall begin on the first day of such Calendar Year and end on the last day of the Term.

1.37 "**CATALINA Clinical Study**" shall mean the clinical trial titled "A Proof-of-Concept, Phase 2 Multicenter, Randomized, Double-Masked, Sham-Controlled Study of the Safety and Efficacy of Intravitreal Injections of NGM621 in Subjects with Geographic Atrophy (GA) Secondary to Age-Related Macular Degeneration (AMD)".

1.38 "**Change of Control**" shall mean, with respect to a Party, and in the case of NGM, any Affiliate of NGM that Controls any of the NGM IP or other assets required for the Collaboration (including Collaboration Technology): (1) the sale of all or substantially all of such Party's (or Affiliate's, as applicable) assets or business relating to this Agreement; or (2) (a) the acquisition, directly or indirectly, by a Person or "group" (whether in a single transaction or multiple transactions) of more than fifty percent (50%) of the voting power of such Party (or Affiliate, as applicable) or of beneficial ownership (or the right to acquire such beneficial ownership) of more than fifty percent (50%) of the outstanding equity or convertible securities of such Party (or Affiliate, as applicable) (including by tender offer or exchange offer); (b) any merger, consolidation, share exchange, business combination, recapitalization, sale of a majority of assets (*i.e.*, having a fair market value (as determined by the Board of Directors of such Party (or Affiliate, as applicable) in good faith) in excess of fifty percent (50%) of the fair market value of all the assets of such Party (or Affiliate, as applicable) and its subsidiaries immediately prior to such sale) or similar corporate transaction involving, directly or indirectly, such Party (or Affiliate, as applicable) (whether or not including one or more wholly owned subsidiaries of such Party (or Affiliate, as applicable)), other than: (i) transactions involving solely such Party (or Affiliate, as applicable) and/or one or more Affiliates, on the one hand, and one or more of such Party's (or Affiliate's, as applicable) Affiliates, on the other hand, and/or (ii) transactions in which the stockholders of such Party (or Affiliate, as applicable) immediately prior to such transaction hold at least fifty percent (50%) of the voting power of the surviving company or ultimate parent company of the surviving company; or (c) as a result of a single or multiple transaction(s) by a Person or group the occupation of, or the power to vote, a majority of the seats (other than vacant seats) on the board of directors (or similar governing body of such Party (or Affiliate, as applicable)) by any directors or Persons who were not: (i) members of such body on the Original Execution Date of this Agreement; (ii) appointed by members of such body on the Original Execution Date of this Agreement or by members of such body so appointed; or (iii) nominated for election to such body by any Persons described in preceding clauses (i) or (ii). For purposes of this definition, the terms

"group" and "beneficial ownership" shall have the meaning accorded in the Exchange Act.

1.39 "**Clinical Study or Studies**" shall mean human studies designed to measure the safety, efficacy, tolerability and appropriate dosage of a Program Compound, Research Program Development Candidate, Small Molecule Collaboration Compound, Product or Small Molecule Product, as the context requires, including Phase 1 Clinical Trials, any POC Trial, Phase 2 Clinical Trials, or Phase 3 Clinical Trials. "Clinical Studies" shall include: (a) any clinical studies that the JEDDC determines are necessary or useful to conduct in the Territory for Research Program Development Candidates, or (b) any clinical studies that the JLDDC determines are necessary or useful to conduct in the Territory for Program Compounds, Products or NGM Optioned Products to achieve or maintain Marketing Authorizations.

1.40 "**CMC**" shall mean chemistry, manufacturing and control.

1.41 "**Code**" shall have the meaning set forth in Section 16.3.

1.42 "**Co-Detailing**" shall mean, with respect to an NGM Optioned Product, the joint detailing of such Product by Merck and NGM through their respective sales forces to a prescriber target audience under the same trademark in the Co-Detailing Territory using a coordinated field sales force consisting of representatives of both Merck and NGM, all in accordance with ARTICLE 7 and the Co-Detailing Agreement.

1.43 "**Co-Detailing Agreement**" shall have the meaning set forth in Section 7.8.4.

1.44 "**Co-Detailing Option**" shall have the meaning set forth in Section 7.8.2.

1.45 "**Co-Detailing Territory**" shall mean the US.

1.46 "**Collaboration**" shall mean (a) prior to the A&R Effective Date, the research or Development activities undertaken by the Parties pursuant to the NP201 Research Collaboration and/or the Research Program, as the context requires and (b) on and after the A&R Effective Date, the research or Development activities undertaken by the Parties pursuant to the Research Program, including during any applicable Tail Period.

1.47 "**Collaboration Compound**" shall mean any antibody, peptide or other large molecule, or small molecule, that satisfies all the following criteria: (a) [***]; (b) [***]; and (c) [***]. For clarity, antagonists or inhibitors of NP319 or NP201 are included within the scope of Collaboration Compounds if they satisfy the criteria set forth in the preceding sentence and are not NP201 Compounds. Notwithstanding the foregoing, Collaboration Compound shall also include (x) [***] and (y) [***].

1.48 "**Collaboration Compound Patents**" shall have the meaning set forth in Section 12.4.1.

1.49 "**Collaboration Invention**" shall mean any discovery, improvement, process, method, composition of matter, article of manufacture or Know-How that is conceived, reduced to practice, and/or, with respect to Know-How, generated by or on behalf of either or both Parties or their respective Affiliates, subcontractors, licensees or sublicensees, as a result of activities undertaken as part of the Collaboration or as a result of research or Development activities undertaken under this Agreement, in each case, during the Research Program Term or any Tail Period.

1.50 "**Collaboration Patent**" shall mean a Patent Right that: (i) is Controlled by either or both Parties or their respective Affiliates at any time during the Term; and (ii) claims or covers a Collaboration Invention.

1.51 "**Collaboration Target**" shall mean any human DNA sequence, RNA sequence, protein or peptide that (a) [***], (b) [***]; provided, however, [***]. Schedule 1.51(b) will be updated by the Parties from time-to-time to reflect Additional CVM Collaboration Targets.

1.52 "**Collaboration Technology**" shall mean all Collaboration Inventions and Collaboration Patents.

1.53 "**Combination Product**" shall mean a pharmaceutical preparation in final form containing a Program Compound (or Small Molecule Collaboration Compound, as applicable) in combination with one or more additional active ingredients that: (i) are not Program Compounds (or Small Molecule Collaboration Compounds, as applicable); and (ii) are not proprietary to NGM; provided, however, that such additional active ingredients exclude fusion proteins and conjugate molecules of the Program Compound. For clarity, [***]. All references to Product and Small Molecule Product in this Agreement shall be deemed to include Combination Product, unless otherwise noted.

1.54 "**Commercialization**" or "**Commercialize**" shall mean any and all activities directed to the offering for sale and sale of a Product or Small Molecule Product, as applicable, both before and after Marketing Authorization has been obtained, including activities related to marketing, promoting, distributing, importing, exporting, selling and offering to sell Product or Small Molecule Product, as applicable. When used as a verb, "to **Commercialize**" and "**Commercializing**" means to engage in Commercialization and "**Commercialized**" has a corresponding meaning.

1.55 "**Commercially Reasonable Efforts**" shall mean, with respect to the efforts to be expended by a Party with respect to any objective, the reasonable, diligent, good faith

efforts to accomplish such objective in a timely manner as such Party would normally use to accomplish a similar objective under similar circumstances. [***] and it is anticipated that the level of effort will be different for different markets, and will change over time, reflecting changes in the status of the Collaboration Compound, Small Molecule Collaboration Compound, Product, Small Molecule Product, Optioned Compound, NGM Optioned Product or Tail Compound, as applicable, and the market(s) involved.

1.56 "**Competing Pharma Change of Control**" shall mean a Change of Control of NGM (or any Affiliate of NGM that Controls any of the NGM IP or other assets required for the Collaboration (including Collaboration Technology)) in which a company or group of companies acting in concert, for whom collective worldwide sales of [***] in the Calendar Year that preceded the Change of Control were [***], is the Acquiror as part of such Change of Control.

1.57 "**Competing Program**" shall have the meaning set forth in Section 4.7.2.

1.58 "**Content**" shall have the meaning set forth in Section 10.7.2(b).

1.59 "**Control**", "**Controls**" or "**Controlled by**" shall mean with respect to any item of or right under any Patent Rights, Know-How or other intellectual property or technology, the possession (whether by ownership or license, other than pursuant to this Agreement) or ability of a Party or its Affiliate to grant access to, or a license or sublicense of, such items or rights as provided for herein without violating the terms of any agreement or other arrangement with any Third Party existing at the time such Party would be required hereunder to grant the other Party such access or license or sublicense.

1.60 "**Cost of Goods Sold**" shall have the meaning set forth in Schedule 1.6.

1.61 "**CVM Collaboration Compound**" shall mean (a) any Collaboration Compound that, during the Research Program Term prior to the A&R Effective Date, NGM [***], (b) any Collaboration Compound discovered or identified after the A&R Effective Date pursuant to the CVM Research Program that Modulates a CVM Collaboration Target in a manner that satisfies the applicable Physiologically Relevant Threshold or (c) any Collaboration Compound discovered by NGM during the Research Program Term prior to the A&R Effective Date and then determined by NGM after the A&R Effective Date pursuant to the CVM Research Program to Modulate a CVM Collaboration Target in a manner that satisfies the applicable Physiologically Relevant Threshold. A CVM Collaboration Compound may be a bi-functional or multi-functional molecule, and such bi-functional or multi-functional CVM Collaboration Compound will become an Optioned Compound at the time Merck exercises the appropriate Merck Option pursuant to Section 5.3 and pays the applicable Option Fee pursuant to Section 9.4.

1.62 "**CVM Collaboration Target**" shall mean (a) [***] or (b) [***].

1.63 "**CVM Merck Option**" shall have the meaning set forth in Section 5.2.1(c).

1.64 "**CVM Research Program**" shall have the meaning set forth in Section 2.1.2(b).

1.65 "**CVM Research Program Development Candidate**" shall have the meaning set forth in Section 2.1.2(d).

1.66 "**CVM Research Program Development Candidate Data Package**" shall have the meaning set forth in Section 5.1.2.

1.67 "**CVM Research Program Tail Compounds**" shall have the meaning set forth in Section 4.4.1(a)(i).

1.68 "**CVM Research Program Tail Compounds/Targets**" shall mean the CVM Research Program Tail Compounds and CVM Research Program Tail Targets.

1.69 "**CVM Research Program Tail Period**" shall mean a Tail Period that Merck elects with respect to the CVM Research Program pursuant to Section 4.4.1(a)(i).

1.70 "**CVM Research Program Tail Target**" shall have the meaning set forth in Section 4.4.1(a)(i).

1.71 "**CVM Research Program Term**" shall have the meaning set forth in Section 4.1.3(b).

1.72 "**Data Package**" shall mean any POC Data Package or CVM Research Program Development Candidate Data Package.

1.73 "**Designated Ophthalmology Collaboration Compound**" shall mean (a) the compound designated by NGM as of the A&R Effective Date as NGM621, as further described on Schedule 1.73 ("**NGM621**") or any other Collaboration Compound that Modulates C3, alone or together with its co-receptors, as an antagonist or inhibitor in a manner that satisfies the applicable Physiologically Relevant Threshold (collectively with NGM621, "**Anti-C3 Collaboration Compounds**"), (b) any Collaboration Compound that Modulates [***], alone or together with its co-receptors, as an antagonist or inhibitor in a manner that satisfies the applicable Physiologically Relevant Threshold (collectively, "**Anti-**[***] **Collaboration Compounds**") and (c) any Collaboration Compound that Modulates[***], alone or together with its co-receptors, as an antagonist or inhibitor in a manner that satisfies the applicable Physiologically Relevant Threshold (collectively, "**Anti-**[***] **Collaboration Compounds**"). A Designated Ophthalmology Collaboration Compound may be a bi-functional or multi-functional molecule, and such bi-functional or

multi-functional Designated Ophthalmology Collaboration Compound will become an Optioned Compound at the time Merck exercises the appropriate Merck Option pursuant to Section 5.3 and pays the applicable Option Fee pursuant to Section 9.4; provided, however, that with respect to [***].

1.74 "**Designated Ophthalmology Collaboration Target**" shall mean (a) complement C3 with [***] ("**C3**"), (b) [***] or (c) [***].

1.75 "**Develop**" shall mean all non-clinical activities and clinical activities designed to obtain any Marketing Authorization of a Collaboration Compound, Product, Small Molecule Collaboration Compound or Small Molecule Product, as applicable, in accordance with this Agreement or to be used in the Commercialization of the Product or Small Molecule Product (except for Phase 4 Clinical Trials), including the toxicology studies, pharmacokinetic, pharmacodynamic and other non-clinical studies, statistical analysis and report writing, Clinical Study design, pre-Marketing Authorization medical affairs activities and operations, preparing and filing regulatory filings and all regulatory affairs related to the foregoing, as well as any and all activities pertaining to manufacturing and formulation development and lifecycle management, including new indications, new formulations and all other activities related to securing Marketing Authorization for such Collaboration Compound, Product, Small Molecule Collaboration Compound and/or Small Molecule Product. "**Developing**" and "**Development**" shall have correlative meanings.

1.76 "**Development Costs**" shall mean, with respect to an NGM Optioned Product, all costs, including:

(a) [***];

(b) [***];

(c) [***];

(d) [***];

(e) [***];

(f) [***];

(g) [***];

(h) [***];

(i) [***]; and

(j) [***].

1.77 "**Development Costs Report**" shall have the meaning set forth in Section 7.5.4.

1.78 "**Direct Marketing Expenses**" shall have the meaning set forth in Schedule 1.6.

1.79 "**Distribution Expenses**" shall have the meaning set forth in Schedule 1.6.

1.80 "**Early Development**" shall mean, with respect to each Research Program Development Candidate, the Development of such Research Program Development Candidate (including conducting pre-clinical studies, pre-POC CMC and other process development for such Research Program Development Candidate) and any Clinical Studies of such Research Program Development Candidate through and including the first POC Trial of such Research Program Development Candidate. For clarity, "Early Development" will not include any Development activities undertaken following completion of the first POC Trial for the applicable Research Program Development Candidate.

1.81 "**EMA**" shall mean the European Medicines Agency or any successor thereto.

1.82 "**End Year**" shall have the meaning set forth in Section 4.4.1(c).

1.83 "**EU**" or "**European Union**" shall mean the European Union and its then-current member states. As of the A&R Effective Date, such member states are: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden. Notwithstanding the foregoing, EU shall at all times include the United Kingdom.

1.84 "**Exchange Act**" shall have the meaning set forth in Section 16.21.2.

1.85 "**Excluded Claim**" shall have the meaning set forth in Section 16.7.6.

1.86 "**Excluded Compound**" shall mean any and all Retained Compounds and Partnered Compounds.

1.87 "**Excluded Target**" shall mean any and all Retained Targets and Partnered Targets.

1.88 "**Existing Collaboration Agreements**" shall mean: (i) the Collaboration Agreement dated as of June 14, 2013 by and between MedImmune Limited and NGM, as amended by that certain Amendment to Collaboration Agreement dated February 14, 2014; (ii) the

Research Collaboration and License Agreement dated as of March 26, 2012 by and between Daiichi Sankyo Company Limited and NGM; and (iii) the Research, Development and Commercialization Agreement dated as of September 7, 2011 by and between Juvenile Diabetes Research Foundation International and NGM, as amended by that certain First Amendment to the Research, Development and Commercialization Agreement dated as of August 14, 2013; in each case, as any such agreement may subsequently be amended from time to time following the Original Execution Date by such parties, in accordance with, and subject to, Section 4.9.

1.89 "**External Costs**" shall have the meaning set forth in Section 4.2.2(a).

1.90 "**External Costs True Up Report**" shall have the meaning set forth in Section 4.2.2(e).

1.91 "**Field**" shall mean any and all uses in humans and animals.

1.92 "**Filing**" of an NDA shall mean the acceptance by a Regulatory Authority of an NDA for filing.

1.93 "**Finance Working Group**" shall have the meaning set forth in Section 2.11.

1.94 "**Firewall Procedures**" shall have the meaning set forth in Section 4.7.3.

1.95 "**First Commercial Sale**" shall mean, with respect to any Product or Small Molecule Product in any country, the first sale for end use or consumption of such Product or Small Molecule Product, as the case may be, in such country by Merck or its Affiliates or sublicensees, excluding, however, any sale or other distribution for use in a Clinical Study.

1.96 "**First Extension Period**" shall have the meaning set forth in the Original Agreement.

1.97 "**FTE**" or "**Full Time Equivalent**" shall mean [***] hours of work devoted to or in support of Collaboration or Development activities under this Agreement that is carried out by one or more qualified employees of NGM or Merck, as applicable. In no event shall a single individual account for more than one FTE in any Calendar Year.

1.98 "**FTE Rate**" shall mean, as of the A&R Effective Date, a rate of [***] for one Full Time Equivalent. The FTE Rate will be adjusted for the second and each additional (if any) Calendar Year of the Research Program Term and the Tail Period, if any, beginning for the 2022 Calendar Year, based on the percentage change in the All Items Consumer Price Index ("CPI") for the San Francisco-Oakland-San Jose, California area from one Calendar Year to the next.

1.99 "**FTE True Up Report**" shall have the meaning set forth in Section 4.2.2(e).

1.100 "**Generic Bioequivalent Product**" shall mean, with respect to a Product or Program Compound in a particular country, any pharmaceutical product or compound that: (i) contains the same active pharmaceutical ingredients as such Product or Program Compound; (ii) is bioequivalent, biosimilar or interchangeable to such Product or Program Compound, as applicable; and (iii) is sold in such country by a Person that is not a sublicensee of Merck or its Affiliates with respect to such Product or Program Compound, as applicable, and did not purchase such product or compound in a chain of distribution that included any of Merck, its Affiliates or sublicensees.

1.101 "**Generic Small Molecule Product**" shall mean, with respect to a Small Molecule Product or Small Molecule Collaboration Compound in a particular country, any pharmaceutical product or compound that: (i) contains the same active pharmaceutical ingredients as such Small Molecule Product or Small Molecule Collaboration Compound; (ii) is bioequivalent or interchangeable to such Small Molecule Product or Small Molecule Collaboration Compound, as applicable; and (iii) is sold in such country by a Person that is not a sublicensee of Merck or its Affiliates with respect to such Small Molecule Product or Small Molecule Collaboration Compound, as applicable, and did not purchase such product or compound in a chain of distribution that included any of Merck, its Affiliates or sublicensees.

1.102 "**Global Commercialization Plan**" shall mean, with respect to an NGM Optioned Product, a written plan that describes Merck's plans for anticipated launch date, the pre-launch, launch and subsequent promotion and commercialization of such Product in the Territory ([***] (subject to compliance with, and consideration of, Law)), any Phase 4 Clinical Trials and medical affairs strategies, and the anticipated associated budget for such activities. For clarity, and notwithstanding Section 7.6, each Global Commercialization Plan will be updated by Merck from time-to-time as determined reasonably necessary by Merck, but in no event more than once per Calendar Year.

1.103 "**GLP**" or "**Good Laboratory Practice**" shall mean the applicable then-current standards for laboratory activities for pharmaceuticals or biologicals, as set forth in the Act and any regulations or guidance documents promulgated thereunder, as amended from time to time, together, with respect to work performed in a country other than the United States, with any similar standards of good laboratory practice as are required by any Regulatory Authority in such country.

1.104 "**GMP**" or "**Good Manufacturing Practice**" shall mean the applicable then-current standards for conducting manufacturing activities for pharmaceutical products (or active

pharmaceutical ingredients) as are required by any applicable Regulatory Authority in the Territory.

1.105 "**Heart Failure**" shall mean the condition consisting of symptoms of heart failure in humans in which [***], i.e., heart failure with preserved ejection fraction (HFpEF).

1.106 "**HSR Act**" shall mean the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the rules promulgated thereunder.

1.107 "**HSR Conditions**" shall mean the following conditions, collectively: (a) the waiting period under the HSR Act shall have expired or earlier been terminated; (b) no injunction (whether temporary, preliminary or permanent) prohibiting consummation of the transaction contemplated by this Agreement or any material portion hereof shall be in effect; (c) no judicial or administrative proceeding opposing consummation of all or any part of this Agreement shall be pending; and (d) no requirements or conditions shall have been imposed by the United States Department of Justice or Federal Trade Commission (as applicable) in connection with the filings by the Parties under the HSR Act, other than requirements or conditions that are satisfactory to the Party on whom such requirements or conditions are imposed.

1.108 "**Human Materials**" shall have the meaning set forth in Section 8.3.

1.109 "**IND**" shall mean an Investigational New Drug application, Clinical Study Application, Clinical Trial Exemption or similar application or submission for approval to conduct human clinical investigations filed with or submitted to a Regulatory Authority in conformance with the requirements of such Regulatory Authority.

1.110 "**Indemnified Party**" shall have the meaning set forth in Section 15.3.

1.111 "**Indemnifying Party**" shall have the meaning set forth in Section 15.3.

1.112 "**Indication**" shall mean a separate and distinct disease or medical condition in humans for which a Product, Program Compound, Small Molecule Product or Small Molecule Collaboration Compound that is in Clinical Studies, or for which an IND has been filed, is intended to treat, prevent and/or diagnose, and/or for which a Product, Program Compound, Small Molecule Product or Small Molecule Collaboration Compound, as applicable, has received Marketing Authorization. For purposes of this Agreement, each of [***] shall be considered separate disease/medical conditions and thus form separate Indications for a particular Product, Program Compound, Small Molecule Product or Small Molecule Collaboration Compound, as applicable.

1.113 **"Indirect Marketing Expenses"** shall have the meaning set forth in Schedule 1.6.

1.114 **"Initial Research Program Term"** shall mean the period starting after the Original Effective Date and ending five (5) years thereafter.

1.115 "**Information**" shall mean any and all information and data, including all scientific, pre-clinical, clinical, regulatory, manufacturing, marketing, financial and commercial information or data, whether communicated in writing or orally or by any other method, which is provided by one Party to the other Party in connection with this Agreement.

1.116 "**IP Working Group**" shall have the meaning set forth in Section 2.11.

1.117 "**Joint Collaboration Patents**" shall have the meaning set forth in Section 12.2.3.

1.118 "**Joint Commercialization Committee**" or "**JCC**" shall have the meaning set forth in Section 2.9.1.

1.119 "**Joint Early Discovery & Development Committee**" or "**JEDDC**" shall have the meaning set forth in Section 2.5.

1.120 "**Joint Executive Committee**" or "**JEC**" shall have the meaning set forth in Section 2.4.

1.121 "**Joint Late Discovery & Development Committee**" or "**JLDDC**" shall have the meaning set forth in Section 2.6.

1.122 "**Joint Research Committee**" or "**JRC**" shall have the meaning set forth in Section 2.5.

1.123 "**Know-How**" shall mean any and all proprietary and confidential data, information, trade secrets and materials (whether patentable or not) including: (a) discoveries, improvements or technology; (b) tests, assays, techniques, data (including non-clinical and clinical data), methods, procedures, formulas or processes; (c) technical and non-technical data and other information relating to any of the foregoing; and (d) drawings, plans, designs, diagrams, sketches, specifications or other documents containing or relating to such information or materials.

1.124 "**Law**" shall mean, to the extent applicable: (i) any United States federal, state or local or multinational law, statute, standard, ordinance, code, rule, regulation, resolution or promulgation (including the Act); (ii) any federal, state or local or multinational law, statute, standard, ordinance, code, rule, regulation, resolution or promulgation in any country in the Territory outside the United States; (iii) any order, writ, judgment, injunction, decree, stipulation, ruling, determination or award entered by or with any Governmental Authority in the Territory, or (iv) any license, franchise, permit or similar right granted under any of the foregoing, or any similar provision having the force or effect of law.

1.125 "**License Fees**" shall have the meaning set forth in Schedule 1.6.

1.126 "**Licensed Infringement**" shall have the meaning set forth in Section 12.4.1.

1.127 "[***]" shall have the meaning set forth in Section [***].

1.128 "**Marketing Authorization**" shall mean all approvals from the relevant Regulatory Authority necessary to market and sell a Product, Program Compound, NGM Optioned Product, Small Molecule Product or Small Molecule Collaboration Compound, as applicable, in any country (including all applicable governmental pricing and reimbursement approvals even if not legally required to sell Product, Program Compound, NGM Optioned Product, Small Molecule Product or Small Molecule Collaboration Compound, as applicable, in a country).

1.129 "**Merck**" shall have the meaning given such term in the preamble to this Agreement.

1.130 "**Merck Collaboration Prosecuted Patents**" shall have the meaning set forth in Section 12.2.2.

1.131 "**Merck Indemnified Parties**" shall have the meaning set forth in Section 15.2.

1.132 "**Merck IP**" shall mean the Merck Patent Rights and Merck Know-How.

1.133 "**Merck Know-How**" shall mean any and all Know-How, patentable or otherwise, that: (i) is Controlled by Merck or its Affiliates (subject to Section 14.3) as of the Original Execution Date or during the Original Research Program Term, the New Research Program Term or Tail Period, if any; (ii) is not generally known; and (iii) is or was contributed by Merck for use in the Collaboration, including prior to the A&R Effective Date; provided that, for purposes of Section 5.7.1, any Know-How first contributed by Merck after the A&R Effective Date shall not constitute "Merck Know-How" for purposes of the license with respect to any Non-Qualifying Compound or Refused Candidate that has been deemed as such as of the A&R Effective Date.

1.134 "**Merck Option**" shall mean any Ophthalmology Merck Option, Alternative Ophthalmology Merck Option, CVM Merck Option or [***] Merck Option.

1.135 "**Merck Patent Rights**" shall mean Patent Rights that: (i) are Controlled by Merck or its Affiliates (subject to Section 14.3) as of the Original Execution Date or during the Original Research Program Term, the New Research Program Term or Tail Period, if any; and (ii) claim Merck Know-How; provided that, [***].

1.136 "**Merck Product Patents**" shall mean Patent Rights that: (i) are Controlled by Merck or its Affiliates (subject to Section 14.3); (ii) claim or cover the composition of matter or method of manufacture or use of a Program Compound, Product, Small Molecule Collaboration Compound or Small Molecule Product; and (iii) are filed as of or after the Original Execution Date.

1.137 **"Merck Proprietary Compound**" shall have the meaning set forth in Section 1.247.

1.138 [***] shall mean [***].

1.139 "**Milestone Product**" shall have the meaning set forth in Section 9.5.1(b).

1.140 "**Modulates**" shall mean interacts directly with a target and activates, agonizes, antagonizes or inhibits such target, alone or together with its signaling partners or co-factors.

1.141 "**Modulation Category**" shall mean one of the following forms of interaction between a particular Collaboration Compound and its applicable Collaboration Target: (a) such Collaboration Compound activates or agonizes such Collaboration Target when tested in an *in vitro* activity assay expressing such Collaboration Target (alone or together with its co-receptors, if any), *unless* such Collaboration Compound, when tested in an applicable animal model, causes a physiologic outcome that is characteristic, in such animal model, of molecules that antagonize or inhibit such Collaboration Target, in which case such Collaboration Compound shall be deemed to be included in clause (b) below; or (b) such Collaboration Compound antagonizes or inhibits such Collaboration Target when tested in an *in vitro* activity assay expressing such Collaboration Target (alone or together with its co-receptors, if any) *unless* such Collaboration Compound, when tested in an applicable animal model, causes a physiologic outcome that is characteristic, in such animal model, of molecules that activate or agonize such Collaboration Target, in which case such Collaboration Compound shall be deemed to be included in clause (a) above.

1.142 "**NDA**" shall mean a New Drug Application, Biologics License Application, Worldwide Marketing Application, Marketing Authorization Application, filing pursuant to Section 510(k) of the Act or similar application or submission for Marketing Authorization of a Product, Program Compound, Small Molecule Product, or Small Molecule Collaboration Compound filed with a Regulatory Authority to obtain marketing approval for a biological, pharmaceutical or diagnostic product in that country or in that group of countries.

1.143 "**Net Sales**" shall mean, subject to Section 9.6.1(f), the gross invoice price (not including value added taxes, sales taxes or similar taxes) of Product, Program Compound (pursuant

to Section 9.6.1(f), NGM Optioned Product, Small Molecule Product, or Small Molecule Collaboration Compound (pursuant to Section 9.6.1(f)), as applicable, sold by Merck or its Related Parties to the first Third Party after deducting, if not previously deducted, from the amount invoiced or received:

(a) [***];

(b) [***];

(c) [***];

(d) [***];

(e) [***]; and

(f) [***].

With respect to sales of Combination Products, Net Sales for any such Combination Product in a particular country in the applicable Calendar Quarter shall be calculated as follows:

(1) Where all active ingredients in such Combination Product are sold separately in such country, Net Sales shall be calculated by [***] (the "**Other Actives**").

(2) If the Product, NGM Optioned Product or Small Molecule Product, as applicable, component of the Combination Product is sold separately in such country, but none of the Other Actives is sold separately in such country, Net Sales for the purpose of determining royalties due hereunder for the Combination Product will be calculated [***].

(3) If the Product, NGM Optioned Product or Small Molecule Product, as applicable, component of the Combination Product is not sold separately in such country, but the Other Active(s) are sold separately in such country, Net Sales for the purpose of determining royalties due hereunder for the Combination Product will be calculated by [***].

(4) If neither the Product, NGM Optioned Product or Small Molecule Product, component nor the Other Actives are sold separately in such country, Net Sales for the purposes of determining royalties due hereunder for the Combination Product will be [***].

In applying the foregoing formulas for purposes of calculating the Net Sales of a Combination Product, Merck shall act in good faith and make determinations in accordance with Merck's standard methods, consistently applied. [***].

1.144 "**New Research Program**" shall mean the Ophthalmology Research Program, the CVM Research Program, and the [***] Research Program.

1.145 "**New Research Program Term**" shall mean the period commencing on the A&R Effective Date and ending on the expiration pursuant to Section 4.1.3 or termination of (a) the Ophthalmology Research Program Term, (b) the CVM Research Program Term, and (c) the [***] Research Program Term, whichever expires or terminates last.

1.146 "**New Research Program Year**" shall mean the period from April 1 of a Calendar Year until March 31 of the following Calendar Year during the New Research Program Term, if any; provided, however, that the New Research Program Year 1 began on the A&R Effective Date and shall end on March 31, 2022, unless the commencement date for New Research Program Year 1 is otherwise described in a particular context.

1.147 "**NGM**" shall have the meaning given such term in the preamble to this Agreement.

1.148 "**NGM Adjusted Net Sales Allocation**" or "**NGM ANS Allocation**" shall have the meaning set forth in Section 7.5.1.

1.149 "**NGM Adjusted Net Sales Share Option**" or "**NGM ANS Option**" shall have the meaning set forth in Section 7.5.1.

1.150 "**NGM ANS Option Cap**" shall have the meaning set forth in Section 7.5.6.

1.151 "**NGM Indemnified Parties**" shall have the meaning set forth in Section 15.1.

1.152 "**NGM IP**" shall mean the NGM Know-How and NGM Patents.

1.153 "**NGM Know-How**" shall mean any and all Know-How, patentable or otherwise, including animal models, manufacturing technology and *in vivo* and *in vitro* screening assays and methods for optimization and characterization of compounds, that is: (i) Controlled by NGM or any of its Affiliates (subject to Section 14.3) as of the Original Execution Date or during the Term; and (ii) (a) to the extent Controlled during the Research Program Term and applicable Tail Period, if any, is reasonably necessary or useful, or (b) to the extent only Controlled after the expiration of the Research Program Term or applicable Tail Period, if any, is reasonably necessary, in each case of (ii) (a) and (b), for the research, Development, manufacture, use or Commercialization of Optioned Compounds, Optioned Products, Small Molecule Collaboration Compounds or Small

Molecule Products; provided, however, that "NGM Know-How" shall not include (A) any of NGM's proprietary gene or peptide delivery technologies that are used solely for research purposes, including discovery of antibodies, peptides or other large molecule or small molecule compounds or (B) any Know-How that becomes Controlled by NGM or its Affiliates after the date of the [***] Data Package and [***].

1.154 "**NGM Optioned Compound**" shall mean an Optioned Compound as to which NGM has exercised the NGM ANS Option.

1.155 "**NGM Optioned Product**" shall mean any Product that incorporates or contains an NGM Optioned Compound.

1.156 "**NGM Patents**" shall mean Patent Rights that: (i) are Controlled by NGM or any of its Affiliates (subject to Section 14.3); (ii) claim or cover: (a) the composition of matter or method of manufacture or use of an Optioned Compound, Optioned Product, Small Molecule Collaboration Compound or Small Molecule Product; (b) NGM Know-How; or (c) (1) the Optioned Target Modulated by such Optioned Compound or Optioned Product; or (2) the Collaboration Target Modulated by such Small Molecule Collaboration Compound or Small Molecule Product; and (iii) are filed as of or after the Original Execution Date; provided, however, that the NGM Patents shall not include any Patent Rights that become Controlled by NGM or its Affiliates after the date of the [***] Data Package and [***]. The NGM Patents, as of the Original Execution Date, are set forth on Exhibit B-1 and the NGM Patents, as of the A&R Effective Date, are set forth on Exhibit B-2.

1.157 "**NGM Prosecuted Patents**" shall have the meaning set forth in Section 12.2.1.

1.158 "**NGM621**" shall have the meaning set forth in Section 1.73.

1.159 "**Non-Identifiable Data**" shall have the meaning set forth in Section 8.2.6.

1.160 "**Non-Qualifying Compounds**" shall mean any Collaboration Compound that is deemed a "Non-Qualifying Compound" pursuant to Section 4.5 or otherwise in accordance with this Agreement.

1.161 "**Non-Qualifying Targets**" shall mean any Collaboration Target that is deemed a "Non-Qualifying Target" pursuant to Section 4.5 or otherwise in accordance with this Agreement.

1.162 "**NP201**" shall mean: (a) growth and differentiation factor 15 (GDF15), with ACCESSION # Q99988 (Uniprot), a hormone identified by NGM as of the Original

Execution Date as potentially useful for the treatment of metabolic diseases, including diabetes and obesity; and (b) naturally occurring variants thereof.

1.163 "**NP201 Compound**" shall mean any antibody, peptide, or other large molecule, or small molecule, that: (a) [***]; and (b) is: (i) discovered or identified by NGM as of the Original Execution Date (including those molecules internally designated by NGM as of the Original Execution Date as NGM395, NGM386 and NGM160); (ii) [***]; (iii) any modified form, variants or derivatives of an antibody, peptide, or other large molecule, or small molecule, described in foregoing clause (i) or (ii); or (iv) [***]. For clarity, "NP201 Compound" expressly excludes any antibody, peptide, or other large molecule, or small molecule, [***], unless such antibody, peptide, or other large molecule, or small molecule, [***], in which case it will be deemed to be an NP201 Compound. For purposes of this definition, "**NP201 Patent Rights**" means Patent Rights that: (A) are Controlled by NGM or any of its Affiliates (subject to Section 14.3); (B) claim or cover: (1) the composition of matter or method of manufacture or use of a NP201 Compound or NP201 Product; (2) NP201 Know-How; or (3) NP319, including the use or modulation thereof; and (C) are filed as of or after the Original Execution Date. For purposes of this definition, "**NP201 Know-How**" means any and all Know-How (whether patentable or otherwise), including animal models, manufacturing technology and in vivo and in vitro screening assays and methods for optimization and characterization of compounds that is: (X) Controlled by NGM or any of its Affiliates (subject to Section 14.3) as of the Original Execution Date or during the Term; and (Y) to the extent Controlled during the period from the Original Effective Date through the NP201 Research Program Termination Date, is reasonably necessary or useful, or, to the extent only Controlled after the NP201 Research Program Termination Date, is reasonably necessary, in each case for the research, Development, manufacture, use or Commercialization of NP201 Compounds or NP201 Products; provided, however, that "**NP201 Know-How**" shall not include any of NGM's proprietary gene or peptide delivery technologies that are used solely for research purposes, including discovery of antibodies, peptides or other large molecule or small molecule compounds.

1.164 "**NP201 Know-How**" shall have the meaning set forth in Section 1.163.

1.165 "**NP201 Patent Rights**" shall have the meaning set forth in Section 1.163.

1.166 "**NP201 Product**" shall mean any pharmaceutical preparation or Combination Product that incorporates or contains an NP201 Compound. For the sake of clarity, "**NP201 Product**" includes any formulation or dosage strength of such a pharmaceutical preparation.

1.167 "**NP201 Program**" shall mean all activities, rights and obligations of each Party under this Agreement relating to NP201 Compounds, including under the NP201 Research Collaboration.

1.168 "**NP201 Program Termination**" shall have the meaning set forth in Section 3.1.

1.169 "**NP201 Program Termination Date**" shall have the meaning set forth in Section 3.1.

1.170 "**NP201 Research Collaboration**" shall mean the research and Early Development program on NP201 that was conducted by NGM and Merck under the Original Agreement and terminated pursuant to the NP201 Program Termination.

1.171 "**NP201 Reversion Compounds**" shall have the meaning set forth in Section 3.2.2.

1.172 "**NP201 Reversion Products**" shall have the meaning set forth in Section 3.2.2.

1.173 "**NP319**" shall mean: (a) the cognate receptor for NP201, identified by NGM as of the Original Execution Date, [***]; and (b) naturally occurring variants thereof.

1.174 "**Officials**" shall have the meaning set forth in Section 8.2.3.

1.175 "**Ophthalmology Merck Option"** shall have the meaning set forth in Section 5.2.1(a).

1.176 "**Ophthalmology Research Program**" shall have the meaning set forth in Section 2.1.2(a).

1.177 "**Ophthalmology Research Program Development Candidate**" shall mean a Research Program Development Candidate that is a Designated Ophthalmology Collaboration Compound.

1.178 "**Ophthalmology Research Program Tail Compounds**" shall have the meaning set forth in Section 4.4.1(a)(i).

1.179 "**Ophthalmology Research Program Tail Compounds/Targets**" shall mean the Ophthalmology Research Program Tail Compounds and Ophthalmology Research Program Tail Targets.

1.180 "**Ophthalmology Research Program Tail Period**" shall mean a Tail Period that Merck elects with respect to the Ophthalmology Research Program pursuant to Section 4.4.1(a)(i).

1.181 "**Ophthalmology Research Program Tail Target**" shall have the meaning set forth in Section 4.4.1(a)(i).

1.182 "**Ophthalmology Research Program Term**" shall have the meaning set forth in Section 4.1.3(a).

1.183 "**Option Fee**" shall have the meaning set forth in Section 9.4.

1.184 "**Option Period**" shall have the meaning set forth in Section 5.3.1.

1.185 "**Option Subject Compound**" shall mean any (a) POC Compound that is the subject of an Ophthalmology Merck Option (*i.e.*, a POC Compound that has been the subject of a completed POC Trial), which option has not expired unexercised, and any Related Compound (whether identified before or after exercise of such Merck Option) of such POC Compound, (b) Designated Ophthalmology Collaboration Compound that is the subject of an Alternative Ophthalmology Merck Option, which option has not expired unexercised, and any Related Compound (whether identified before or after exercise of such Merck Option) of such Designated Ophthalmology Collaboration Compound, (c) CVM Research Program Development Candidate that is the subject of a Merck Option (*i.e.*, a CVM Collaboration Candidate that has been designated as a Research Program Development Candidate), which option has not expired unexercised, and any Related Compound (whether identified before or after exercise of such Merck Option) of such CVM Research Program Development Candidate or (d) [***] Research Program Development Candidate that is the subject of a Merck Option, which Merck Option has not expired unexercised, and any Related Compound (whether identified before or after exercise of such Merck Option) of such [***] Research Program Development Candidate.

1.186 "**Optioned Compound**" shall mean (a) NGM313 (MK-3655) and its Related Compounds and (b) any other Option Subject Compound as to which Merck has exercised the Merck Option pursuant to Section 5.3. An Option Subject Compound [***].

1.187 "**Optioned Product**" shall mean any pharmaceutical preparation that incorporates or contains any Optioned Compound, in any formulation, whether as the sole active ingredient or in combination with one or more other active agents.

1.188 "**Optioned Target**" shall mean (a) β-Klotho/FGFR1c and (b) with respect to a particular Optioned Compound, the Collaboration Target Modulated by such Optioned Compound.

1.189 "**Original Agreement**" shall have the meaning given such term in the preamble to this Agreement.

1.190 "**Original Effective Date**" shall mean March 17, 2015, the date that the Original Agreement became effective as determined in accordance with Section 16.17.1(b) of the Original Agreement.

1.191 "**Original Execution Date**" shall mean February 18, 2015.

1.192 "**Original Research Program**" shall have the meaning set forth in Section 2.1.1.

1.193 "**Original Research Program Term**" shall have the meaning set forth in Section 4.1.2(a).

1.194 "**Other Actives**" shall have the meaning set forth in Section 1.143.

1.195 "**Other Collaboration Compound**" shall mean (a) any Collaboration Compound other than (i) Designated Ophthalmology Collaboration Compounds, (ii) Selected Oncology Collaboration Compounds, (iii) Anti-[***] Collaboration Compounds, and (iv) CVM Collaboration Compounds and (b) any Related Compound with respect to any such Collaboration Compound (excluding items (i) – (iv), inclusive) in the foregoing clause (a).

1.196 "**Other Collaboration Targets**" shall mean all Collaboration Targets other than (a) Designated Ophthalmology Collaboration Targets, (b) Selected Oncology Collaboration Targets, (c) [***], (d) CVM Collaboration Targets and (e) [***]. For clarity, [***] is an Other Collaboration Target, but [***] is deemed to be a Selected Oncology Collaboration Target.

1.197 "**Other Income**" shall have the meaning set forth in Schedule 1.6.

1.198 "**Outstanding Development Payments**" shall have the meaning set forth in Section 7.5.5(a).

1.199 "**Partnered Compound**" shall mean any antibody, peptide, or other large molecule, or small molecule, that is Within 3rd Party Rights as a result of the rights of a Third Party Partner pursuant to the applicable Existing Collaboration Agreement; provided, however, that the applicable compound shall cease being a "Partnered Compound" as and to the extent set forth in Section 4.9. For clarity, "Partnered Compounds" do not include any antibody, peptide or other large molecule or small molecule that was discovered, identified or reduced to practice, or was otherwise researched or developed by, NGM or an Affiliate of NGM prior to the Original Effective Date or during the Research Program Term and applicable Tail Period, if any, and either: (a) [***]; or (b) [***].

1.200 "**Partnered Target**" shall mean any DNA sequence, RNA sequence, protein or peptide that is Within 3rd Party Rights as a result of the rights of a Third Party Partner with respect thereto pursuant to the applicable Existing Collaboration Agreement, subject to Section 4.9.3. For clarity, "Partnered Targets" do not include: (i) any DNA sequence, RNA sequence, protein or peptide that was discovered, identified or reduced to practice, or was otherwise researched or developed, and/or validated, by NGM or an Affiliate of NGM (subject to Section 14.3) during the conduct of the Collaboration; or (ii) any of those targets set forth on Schedule 1.51(b).

1.201 "**Party**" and "**Parties**" shall have the meaning given such terms in the preamble to this Agreement.

1.202 "**Patent and Trademark Expenses**" shall have the meaning set forth in Schedule 1.6.

1.203 "**Patent Rights**" shall mean any and all patents and patent applications (which for the purpose of this Agreement shall be deemed to include certificates of invention and applications for certificates of invention), including divisionals, continuations, continuations-in-part, reissues, renewals, substitutions, registrations, re-examinations, revalidations, extensions, supplementary protection certificates and the like of any such patents and patent applications, and foreign equivalents of the foregoing.

1.204 "**Payee**" shall have the meaning set forth in Section 9.11.1.

1.205 "**Payer**" shall have the meaning set forth in Section 9.11.1.

1.206 "**Payment**" shall have the meaning set forth in Section 8.2.3.

1.207 "**Person**" shall mean any individual, partnership, joint venture, limited liability company, corporation, firm, trust, association, unincorporated organization, governmental authority or agency, or any other entity not specifically listed herein.

1.208 "**Personal Data**" shall have the meaning set forth in Section 8.2.6.

1.209 "**Phase 1 Clinical Trial**" shall mean a human clinical trial in any country that would satisfy the requirements of 21 CFR 312.21(a).

1.210 "**Phase 2 Clinical Trial**" shall mean a human clinical trial in any country that would satisfy the requirements of 21 CFR 312.21(b).

1.211 "**Phase 3 Clinical Trial**" shall mean a human clinical trial in any country that would satisfy the requirements of 21 CFR 312.21(c).

1.212 "**Phase 4 Clinical Trial**" shall mean: (i) any human clinical trial (other than a Phase 1 Clinical Trial, Phase 2 Clinical Trial or Phase 3 Clinical Trial) in any country which is conducted on a product for an Indication after Marketing Authorization for such product has been obtained from an appropriate Regulatory Authority in such country for such Indication, and includes: (a) clinical trials conducted voluntarily after Marketing Authorization for enhancing marketing or scientific knowledge of an approved Indication; or (b) trials conducted after Marketing Authorization due to request or requirement of a Regulatory Authority or as a condition of a previously granted Marketing Authorization; or (ii) any REMS/RMP related study of a product for an Indication after Marketing Authorization for such product has been obtained from an appropriate Regulatory Authority in such country for such Indication.

1.213 "**Physiologically Relevant Threshold**" means, unless the Parties agree upon different criteria for the applicable Collaboration Target, Non-Qualifying Target, Retained Target or Optioned Target, [***]: (a) for an antibody, peptide or large molecule, [***] or less with respect to such Collaboration Target, Non-Qualifying Target, Retained Target or Optioned Target, [***]; or (b) for small molecules, [***] or less with respect to such Collaboration Target, Non-Qualifying Target, Retained Target or Optioned Target, [***].

1.214 "**POC Compound**" shall mean a given Research Program Development Candidate or Tail Compound, as applicable, which is the subject of a POC Trial.

1.215 "**POC Data Package**" shall have the meaning set forth in Section 5.1.1.

1.216 "**Post-Approval Product Development Expenses**" shall have the meaning set forth in Schedule 1.6.

1.217 "**Principal Investigator**" shall mean Jin-Long Chen, Ph.D., Chief Scientific Officer of NGM as of the A&R Effective Date.

1.218 "**Prior CDA**" shall have the meaning set forth in Section 16.9.

1.219 "**Product**" shall mean any Optioned Product, in any formulation or dosage strength (and, for clarity, all formulations and dosage strengths of a given Product shall be considered the same Product for purposes of this Agreement).

1.220 "**Product Development Plan and Budget**" shall mean, with respect to a particular NGM Optioned Product, a development plan setting forth in reasonable detail specific Clinical Studies and related Development activities to be performed with respect to such NGM Optioned Product, through Marketing Authorization in the Territory, and in particular in each of the US, EU and Japan, and the budget for such Development activities.

1.221 "**Product Liability Losses**" shall have the meaning set forth in Schedule 1.6.

1.222 "**Product Specific Manufacturing Variances**" shall have the meaning set forth in Schedule 1.6.

1.223 "**Program Compound**" shall mean any Optioned Compound.

1.224 *[Reserved.]*

1.225 "**Proof of Concept**" or "**POC**" shall mean the demonstration of either: (a) [***]; or (b) [***].

1.226 "**Proof of Concept Trial**" or "**POC Trial**" shall mean with respect to any Research Program Development Candidate, Tail Compound or Optioned Compound, as applicable, the first human clinical trial that either: (i) is reasonably designed to; and/or (ii) actually does, establish POC in humans. For clarity, the concept of a "Proof of Concept Trial" is intended only to identify the time point at which the POC of a particular Research Program Development Candidate, Tail Compound or Optioned Compound has been demonstrated, and a "Proof of Concept Trial" is not [***].

1.227 "**Protocol Amendment Costs**" shall have the meaning set forth in Section 4.2.7(a).

1.228 "**Providers**" shall have the meaning set forth in Section 8.3.

1.229 "[***] **Research Funding**" shall have the meaning set forth in Section 4.2.2(c).

1.230 "[***]" shall have the meaning set forth in Section 9.5.1(b).

1.231 "**Reference Product Sponsor**" shall have the meaning set forth in Section 12.6.

1.232 "**Refused Candidates**" shall have the meaning set forth in Section 5.3.2.

1.233 "**Regulatory Authority**" shall mean any applicable government regulatory authority involved in granting approvals for the manufacturing, marketing, reimbursement and/or pricing of a Program Compound, Small Molecule Collaboration Compound, Product or Small Molecule Product in the Territory, including, in the US, the FDA and any successor governmental authority having substantially the same function.

1.234 "**Related Compound**" shall mean, with respect to a POC Compound (which, notwithstanding Section 1.214, shall include NGM313 (MK-3655) as of the A&R Effective Date), a Designated Ophthalmology Collaboration Compound that is the subject of an Alternative Ophthalmology Merck Option that has not expired unexercised, a CVM

Research Program Development Candidate, a Selected Oncology Collaboration Compound, a [***] Research Program Development Candidate or an Other Collaboration Compound and the Collaboration Target that it Modulates, all: (i) other Collaboration Compounds that: (a) [***]; and (b) [***]; and (ii) [***] that: (a) [***]; (b) [***]; and (c) [***]. A Related Compound to a POC Compound, Designated Ophthalmology Collaboration Compound, CVM Research Program Development Candidate or [***] Research Program Development Candidate may be comprised of bi-functional or multi-functional molecules, and each such bi-functional or multi-functional Related Compound will become an Optioned Compound at the time Merck exercises the appropriate Merck Option for a POC Compound, Designated Ophthalmology Collaboration Compound, CVM Research Program Development Candidate or [***] Research Program Development Candidate, in each case, pursuant to Section 5.3 and pays the applicable Option Fee pursuant to Section 9.4; provided, however, [***]; provided, further, that if [***].

1.235 "**Related Party**" shall mean each of Merck, its Affiliates and their respective sublicensees (which term does not include distributors), as applicable.

1.236 "**Requesting Party**" shall have the meaning set forth in Section 10.7.2(b).

1.237 "**Required Disclosure**" shall have the meaning set forth in Section 10.7.2(a).

1.238 "**Research Data Sets**" shall have the meaning set forth in Section 8.2.6.

1.239 "**Research Funding**" shall have the meaning set forth in Section 4.2.2(c).

1.240 "**Research Funding Budget**" shall have the meaning set forth in Section 4.2.2(a).

1.241 "**Research Funding Cap**" shall have the meaning set forth in Section 4.2.2(a).

1.242 "**Research Program**" shall have the meaning set forth in Section 2.1.2(c).

1.243 "**Research Program Development Candidate**" shall mean (a) with respect to any determination made prior to the A&R Effective Date, any Collaboration Compound that has been determined by NGM, after reasonable discussion at the JRC (as defined in the Original Agreement), as suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies and (b) with respect to any determination made after the A&R Effective Date, (i) with respect to the Ophthalmology Research Program, (A) any Ophthalmology Research Program Collaboration Compound (1) for which Merck has provided the notice described in Section 4.1.13(a)(i) or Section 4.1.13(c)(i) or (2) that is deemed to be a Research Program Development Candidate pursuant to Section 4.4.3(a)(iv), or (B) any Anti-[***] Collaboration Compound that has been

determined by NGM as suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies pursuant to and to the extent set forth in Section 4.1.13, (ii) with respect to the CVM Research Program, any CVM Research Program Collaboration Compound (A) for which Merck has provided the notice described in Section 4.1.13(a)(i) or Section 4.1.13(c)(i) or (B) that is deemed to be a Research Program Development Candidate pursuant to Section 4.4.3(b)(iv) and (iii) with respect to the [***] Research Program, any [***] Research Program Collaboration Compound that is deemed to be a Research Program Development Candidate pursuant to Section 4.4.3(c)(iv).

1.244 "**Research Program Term**" shall mean the Original Research Program Term together with the New Research Program Term.

1.245 "**Retained Compounds**" shall mean: (a) any antibody, peptide, or other large molecule, or small molecule, that activates or agonizes FGFR4 and thereby inhibits liver Cyp7A1 expression, including NGM282, variants or derivatives of FGF19, and fusion molecules of any such variants or derivatives; (b) any antibody, peptide, large molecule or small molecule compound that [***]; or (c) any antibody, peptide, or other large molecule, or small molecule, licensed by NGM from a Third Party after the Original Effective Date, provided that such antibody, peptide or other large molecule or small molecule: (i) does not Modulate a Collaboration Target (including any Optioned Target) in a manner that satisfies the applicable Physiologically Relevant Threshold; and (ii) was first licensed by NGM after such antibody, peptide or other large molecule, or small molecule, had been [***]. In no event will Retained Compounds include any antibody, peptide, or other large molecule, or small molecule that is identified, discovered or reduced to practice, or otherwise researched or developed, in the course of performing the Collaboration.

1.246 "**Retained Target**" shall mean any target that Merck and NGM mutually agreed in writing will not be researched in the course of the Research Program Term.

1.247 "**Reversion Compound**" shall mean, subject to Section 13.7, solely: (a) in the case of termination of one or more Optioned Compounds or Optioned Products, all Optioned Compound(s) associated with the relevant Merck Option [***]; or (b) in the case of termination of the NP201 Program, all NP201 Compound(s), as applicable, in each case of clauses (a) and (b), existing (*i.e.*, identified or generated) as of the time of delivery of a notice of termination with respect thereto (by Merck under Section 13.2.4 or 13.2.5 (or Section 13.2.2 of the Original Agreement) or by NGM under Section 13.5); provided, however, that in all cases Reversion Compounds shall exclude any Merck proprietary compound that is not a Program Compound including any and all Small Molecule Collaboration Compounds ("**Merck Proprietary Compound**").

1.248 "**Reversion Product**" shall mean, subject to Section 13.7, any Product that contains a Reversion Compound [***]; provided, however, that in all cases Reversion Products shall exclude any active ingredient in such Reversion Product that is a Merck Proprietary Compound or which active ingredient is not Controlled by Merck. For clarity, if a Combination Product includes a Reversion Compound together with another active ingredient that is a Merck Proprietary Compound or which active ingredient is not Controlled by Merck, such other active ingredient shall be excluded from the relevant Reversion Product (and from the Parties' obligations under this Agreement with respect to Reversion Compounds and Reversion Products) and the remainder of such Combination Product shall be a Reversion Product.

1.249 "**Reversion Trademarks**" shall have the meaning set forth in Section 13.6.2(l).

1.250 "**Reviewing Party**" shall have the meaning set forth in Section 10.7.2(b).

1.251 "**Revised Baseline Projected Plans and Budgets**" shall have the meaning set forth in Section 7.5.3(a).

1.252 "**Royalty Product**" shall have the meaning set forth in Section 9.6.1.

1.253 "**Royalty Term**" shall have the meaning set forth in Section 9.6.1(d).

1.254 "**Safety Issue**" shall mean, with respect to a given Program Compound or Product: (a) an effect that is considered to be generally related to either the mechanism of action or the basic chemical structure of such Program Compound or Product which has led or is reasonably expected to lead to (i) the issuance by the FDA or the EMA of a non-approvable letter or non-approval letter to a Third Party for such Third Party's compound with the same mechanism of action or the basic chemical structure of such Program Compound or Product or (ii) the required withdrawal from the market of any compound with the same mechanism of action or the basic chemical structure of such Program Compound or Product; (b) a Regulatory Authority or safety data review board for a Clinical Study or Studies of such Program Compound or Product has required termination or suspension of a Clinical Study or Studies of such Program Compound or Product; or (c) Merck or its Affiliate reasonably believes in good faith, after due inquiry and in a manner consistent with Merck's then-current decision-making policies and procedures with respect to such a determination, that termination of the further Development of such Program Compound or Product is warranted because there is an unacceptable risk for harm in humans either based upon the observation of serious adverse effects in humans after such Program Compound or Product has been administered to or taken by humans or based upon pre-clinical *in vitro* or animal data that is predictive of serious adverse effects in humans.

1.255 "**Second Extension Period**" shall have the meaning set forth in the Original Agreement.

1.256 "**Selected Oncology Collaboration Compound**" shall mean (a) the compound designated by NGM as of the A&R Effective Date as NGM707, (b) the compound designated by NGM as of the A&R Effective Date as NGM120, (c) the compound designated by NGM as of the A&R Effective Date as [***] and (d) the compound designated by NGM as of the A&R Effective Date as NGM438, in each case of (a), (b), (c) and (d), as further described on Schedule 1.256.

1.257 "**Selected Oncology Collaboration Target**" shall mean (a) the combination of (i) immunoglobulin-like transcript 2 [***] ("**ILT2**") and (ii) immunoglobulin-like transcript 4 [***] ("**ILT4**", together with ILT2, "**ILT2/ILT4**"), (b) glial cell-derived neurotrophic factor receptor alpha-like with [***] ("**GFRAL**"), (c) [***] and (d) leukocyte associated immunoglobulin like receptor 1 [***] ("**LAIR1**").

1.258 "**Self-Funded Allocation Amount**" shall have the meaning set forth in Section 7.5.2.

1.259 "**Selling Expenses**" shall have the meaning set forth in Schedule 1.6.

1.260 "**Senior Executives**" shall mean (a) with respect to Merck, [***]; and (b) with respect to NGM, the Chief Scientific Officer or the Chief Executive Officer, as the case may be and depending on the nature of the dispute at issue.

1.261 "**Sensitive Information**" shall have the meaning set forth in Section 14.2.3.

1.262 "**Significant Event**" shall have the meaning set forth in the Original Agreement.

1.263 "**Small Molecule Collaboration Compound**" shall mean any small molecule that: (a) (i) with respect to any and all Collaboration Targets (including any Non-Qualifying Target), is identified, discovered, researched or developed by Merck during the Research Program Term and applicable Tail Period, if any, and that, but for the use of confidential and proprietary NGM Know-How or other confidential and proprietary information provided by NGM hereunder relating to such Collaboration Target would not have been so identified, discovered, researched or developed, or (ii) with respect to an Optioned Target, is identified, discovered, researched or developed by Merck during the Term and that, but for the use of confidential and proprietary NGM Know-How or other confidential and proprietary information provided by NGM hereunder relating to such Optioned Target, would not have been so identified, discovered, researched or developed; and (b) Modulates such Collaboration Target (whether a Non-Qualifying Target or an Optioned Target) in a manner that satisfies the applicable Physiologically Relevant Threshold. For clarity, "Small Molecule Collaboration Compounds" exclude any small molecule that Modulates a target that either: (i) is the same target as a Collaboration

Target, but that is identified, discovered, researched or developed by Merck or any Third Party partner of Merck independently from the Collaboration and that is not identified, discovered, researched or developed but for the use of confidential and proprietary NGM Know-How or other confidential and proprietary information provided by NGM or relating to the applicable Collaboration Target; or (ii) is an Excluded Target. For clarity, Small Molecule Collaboration Compounds do not include any NP201 Compounds. In addition, a small molecule that Modulates the same target as the Collaboration Target that is Modulated by a Collaboration Compound for which the POC Data Package is delivered will not automatically be considered a Small Molecule Collaboration Compound unless it meets the criteria described in clauses (a) and (b) above.

1.264 "**Small Molecule Product**" shall mean any pharmaceutical preparation that incorporates or contains a Small Molecule Collaboration Compound in any dosage strength or formulation, whether as the sole active ingredient or in combination with one or more other active agents. For clarity, a Small Molecule Product may be a Combination Product.

1.265 "**Standstill Period**" shall have the meaning set forth in Section 16.21.

1.266 "**Stock Purchase Agreement**" shall mean that certain Stock Purchase Agreement entered into between NGM and Merck contemporaneously with the Original Agreement.

1.267 "**Study"** shall mean the [***].

1.268 "**T1D**" shall mean type 1 diabetes.

1.269 "**T2D**" shall mean type 2 diabetes.

1.270 "**Tail Compounds**" shall mean the CVM Research Program Tail Compounds, the Ophthalmology Research Program Tail Compounds and the [***] Research Program Tail Compounds, as and to the extent applicable.

1.271 "**Tail Compounds/Targets**" shall mean the Tail Compounds and Tail Targets.

1.272 "**Tail Period**" shall mean, with respect to each New Research Program, the period commencing upon Merck's first exercise, if any, of its right pursuant to Section 4.4.1(a) for such Research Program and ending as set forth in Section 4.4.1(c).

1.273 "**Tail Targets**" shall mean the CVM Research Program Tail Targets, the Ophthalmology Research Program Tail Targets and the [***] Research Program Tail Target, as and to the extent applicable.

1.274 "**Tail Year**" shall have the meaning set forth in Section 4.4.1(c).

1.275 "**Taxes**" shall have the meaning set forth in Section 9.11.1.

1.276 "**Technical Issues**" shall have the meaning set forth in the Original Agreement.

1.277 "**Term**" shall have the meaning set forth in Section 13.1.

1.278 "**Territory**" shall mean all of the countries in the world, and their territories and possessions.

1.279 "**Testing Costs**" shall have the meaning set forth in Schedule 1.6.

1.280 "**Third Party**" shall mean an entity other than Merck and its Affiliates, and NGM and its Affiliates.

1.281 "**Third Party Partner**" shall mean, for an Existing Collaboration Agreement, the Third Party that is the counterparty (to NGM) in such agreement.

1.282 "**Third Party Patent Licenses**" shall have the meaning set forth in Section 9.6.1(h).

1.283 "**Total Deferred Costs**" shall have the meaning set forth in Section 7.5.5(c).

1.284 "**Transferred Compounds**" shall have the meaning set forth in Section 14.4.1(a).

1.285 "**Transferred Products**" shall have the meaning set forth in Section 14.4.1(b)(i).

1.286 "**Unpaid Costs**" shall have the meaning set forth in Section 7.5.3(a).

1.287 "**US**" shall mean the United States of America, including its territories and possessions.

1.288 "**US GAAP Standard Cost**" shall have the meaning set forth in Schedule 1.6.

1.289 "**Valid Patent Claim**" shall mean any claim of an issued and unexpired patent within the Merck Product Patents, NGM Patents or Collaboration Patents that claims or covers [***], in each case which claim has not been revoked or held unenforceable, invalid or unpatentable by a court or other governmental body having competent jurisdiction in a decision for which no appeal can or has been taken, and which has not been rendered unenforceable through disclaimer denial or admission of invalidity or unenforceable through reissue, re-examination or otherwise.

1.290 "**Violation**" shall mean that either NGM, or any of its Affiliates, or its or their, officers or directors has been: (a) convicted of any of the felonies identified among the exclusion

authorities listed on the US Department of Health and Human Services, Office of Inspector General (OIG) website, including 42 U.S.C. § 1320a-7(a) (**https://oig.hhs.gov/exclusions/index.asp**); and/or (b) identified in the OIG List of Excluded Individuals/Entities (LEIE) database (**https://oig.hhs.gov/exclusions/exclusions_list.asp**) or the US General Services Administration's list of Parties Excluded from Federal Programs (**https://sam.gov/SAM/pages/Public/searchRecords/advancedPIRSearch.jsf**) (each of (a) and (b), singly and collectively, the "**Exclusions Lists**").

1.291 "**Withholding Tax Action**" shall have the meaning set forth in Section 9.11.3.

1.292 "**Within 3rd Party Rights**" shall mean, with respect to a particular antibody, peptide, or other large molecule, or small molecule, DNA sequence or RNA sequence, that such antibody, peptide, or other large molecule, or small molecule, DNA sequence, or RNA sequence is covered by or within the scope of unexpired license rights or option rights granted by NGM to a Third Party Partner pursuant to the applicable Existing Collaboration Agreement, as of the applicable time.

1.293 "**Working Group**" shall have the meaning set forth in Section 2.11.

ARTICLE 2
COLLABORATION OVERVIEW; GOVERNANCE

2.1 Overview of Collaboration.

2.1.1 Original Agreement. Under the Original Agreement, the Parties undertook a broad collaboration that consisted, in general, of a broad research and early development program that was conducted by NGM (the "**Original Research Program**"), pursuant to which: (i) NGM conducted research, discovery and pre-clinical development efforts with respect to targets, other than Excluded Targets, and including targets that NGM identified through activities under the Collaboration whether intentionally directed at identification of targets or otherwise, in an effort to identify and develop Collaboration Compounds that Modulate such targets in a manner that satisfies the applicable Physiologically Relevant Threshold, without limitation with respect to a disease area of focus, as well as NGM's innovation efforts in antibody and protein engineering, that was funded by Merck pursuant to the Original Agreement; and (ii) NGM conducted certain early stage clinical studies of certain Research Program Development Candidates arising from such research efforts through POC Trial and delivery of the Data Package associated with a POC Compound, that was funded by Merck pursuant to the Original Agreement;

2.1.2 Collaboration. Under this Agreement, the Parties are undertaking a Collaboration consisting, in general, of the following components:

(a) a research and early development program to be conducted by NGM (or Merck, to the extent set forth in ARTICLE 4) during the Ophthalmology Research Program Term and the applicable Tail Period, if any, pursuant to which: (1) NGM (or Merck, to the extent set forth in ARTICLE 4) will conduct research and discovery efforts with respect to Designated Ophthalmology Collaboration Targets in an effort to identify and conduct research and pre-clinical development on Designated Ophthalmology Collaboration Compounds that Modulate such Designated Ophthalmology Collaboration Targets in a manner that satisfies the applicable Physiologically Relevant Threshold; and (2) NGM (or Merck, to the extent set forth in ARTICLE 4) will conduct certain early stage clinical studies of such Designated Ophthalmology Collaboration Compounds through each POC Trial and delivery of the Data Package associated with such POC Compound, in each case (1) and (2), with funding provided by Merck pursuant to ARTICLE 4 (collectively, the "**Ophthalmology Research Program**");

(b) a discovery and research program to be conducted by NGM (or Merck, to the extent set forth in ARTICLE 4) during the CVM Research Program Term and applicable Tail Period, if any, pursuant to which NGM (or Merck, to the extent set forth in ARTICLE 4) will conduct target validation research with respect to potential new CVM Collaboration Targets and conduct research and discovery efforts with respect to CVM Collaboration Targets (including any Additional CVM Collaboration Targets agreed upon by the Parties in accordance with Section 4.1.10), in an effort to identify and conduct research on CVM Collaboration Compounds that Modulate such CVM Collaboration Targets in a manner that satisfies the applicable Physiologically Relevant Threshold through Research Program Development Candidate determination pursuant to Section 4.1.13(a)(i) or Section 4.1.13(c)(i) or Section 4.4.3(b)(iii), as applicable, with funding provided by Merck pursuant to ARTICLE 4 (collectively, the "**CVM Research Program**");

(c) a research program to be conducted by NGM during the [***] Research Program Term and by Merck during the [***] Research Program Tail Period, pursuant to which NGM and Merck will conduct antibody-drug conjugate-related research on Anti-[***] Collaboration Compounds, with funding provided by Merck pursuant to ARTICLE 4 (collectively, the

"[***] **Research Program**" and together with the Original Research Program, the Ophthalmology Research Program and the CVM Research Program, the "**Research Program**");

(d) the grant to Merck of (i) an exclusive option, with respect to Designated Ophthalmology Collaboration Compounds, exercisable no later than following review of the Data Package following the POC Trial for any Designated Ophthalmology Collaboration Compound that becomes a POC Compound or to the extent Merck is performing activities during the Ophthalmology Research Program Tail Period, in accordance with Section 4.4.2(b)(iii) and Section 4.4.3(a)(iii), to obtain an exclusive, worldwide license to such POC Compound and its Related Compounds, as further detailed in ARTICLE 5, (ii) the Alternative Ophthalmology Merck Option, as described in Section 5.2.1(b), (iii) an exclusive option, with respect to CVM Collaboration Compounds, exercisable no later than following the designation of any CVM Collaboration Compound as a Research Program Development Candidate (each, a "**CVM Research Program Development Candidate**"), to obtain an exclusive, worldwide license to such CVM Research Program Development Candidate and its Related Compounds, as further detailed in ARTICLE 5; and (iv) an exclusive option, with respect to Anti-[***] Collaboration Compounds, exercisable no later than following the designation of any [***] Collaboration Compound as a Research Program Development Candidate (each, a "[***] **Research Program Development Candidate**"), to obtain an exclusive, worldwide license to such [***] Research Program Development Candidate and its Related Compounds, as further detailed in ARTICLE 5;

(e) in the event of exercise (in Merck's sole discretion) of (A) the Merck Option with respect to a given POC Compound, CVM Research Program Development Candidate or [***] Research Program Development Candidate, as applicable, or (B) the Alternative Ophthalmology Merck Option with respect to Anti-[***] Collaboration Compounds and Anti-[***] Collaboration Compounds, NGM will have an option to either: (i) receive milestones and royalties associated with such POC Compound, CVM Research Program Development Candidate, [***] Research Program Development Candidate, Anti-[***] Collaboration Compound or Anti-[***] Collaboration Compound, as applicable; or (ii) participate in the Adjusted Net Sales associated with such POC Compound, CVM Research Program Development Candidate, [***] Research Program Development Candidate, Anti-[***] Collaboration Compound or Anti-

[***] Collaboration Compound, as applicable, in exchange for co-funding a share of the Development Costs and Allowable Expenses associated with such POC Compound, CVM Research Program Development Candidate, [***] Research Program Development Candidate, Anti-[***] Collaboration Compound or Anti-[***] Collaboration Compound, as applicable, and an option to Co-Detail such POC Compound, CVM Research Program Development Candidate, [***] Research Program Development Candidate, Anti-[***] Collaboration Compound or Anti-[***] Collaboration Compound, as applicable, in the US, all as detailed and pursuant to ARTICLE 7, Schedule 7.8.4, and the related provisions of this Agreement; and

(f) the grant to Merck of a worldwide, exclusive license by NGM, as of the A&R Effective Date, to pursue, at its sole option, the research and development and, if successful, commercialization of Small Molecule Collaboration Compounds that potentially Modulate one or more Collaboration Targets, as further set forth in ARTICLE 6.

2.2 General Roles of the Parties. In general, the Parties shall have the following roles, except as expressly set forth in this Agreement:

(a) NGM shall have the sole right, in its sole discretion, to conduct all research, development and commercialization of all Non-Qualifying Targets, Non-Qualifying Compounds, Refused Candidates, Reversion Compounds and Reversion Products, subject to any royalty due to Merck as set forth in Section 9.7 (subject to Section 4.9.3) or Section 13.6.2(c), as applicable, and subject to NGM's obligations to Merck pursuant to Section 4.7 and Section 5.8 and, as set forth in Section 4.5.5, Section 5.3.2 or Section 13.6.2(b), as applicable, all of Merck's exclusivity pursuant to Section 4.6, option, license, exploitation, use, research, development, commercialization and manufacturing rights under this Agreement with respect to such Non-Qualifying Targets, Non-Qualifying Compounds, Refused Candidates, Reversion Compounds and Reversion Products shall automatically terminate effective as of the date, as applicable (i) each applicable Collaboration Compound or Related Compound is deemed a Non-Qualifying Compound or Refused Candidate, (ii) of termination of each applicable Optioned Product, or (iii) as of the date each applicable Collaboration Target is deemed a Non-Qualifying Target;

(b) NGM shall be primarily responsible for all research and discovery of CVM Collaboration Targets and CVM Collaboration Compounds prior to

the earlier of exercise by Merck of the Merck Option with respect thereto or the CVM Research Program Tail Period (and prior to any such Collaboration Compound being deemed a Non-Qualifying Compound pursuant to this Agreement), and Merck may contribute to such activities as further detailed in Section 4.1.1 and Section 4.1.8, and Merck shall be primarily responsible for all research and development of CVM Research Program Tail Targets/Compounds;

(c) NGM shall be primarily responsible for all research and discovery of Designated Ophthalmology Collaboration Targets and Designated Ophthalmology Collaboration Compounds and Early Development activities, including pre-POC process development and pre-POC CMC activities, with respect to Research Program Development Candidates in the Ophthalmology Research Program prior to exercise by Merck of the Merck Option with respect thereto (and prior to any such Designated Ophthalmology Collaboration Compound being deemed a Non-Qualifying Compound pursuant to this Agreement), and Merck may contribute to such IND-enabling and pre-POC activities as further detailed in Section 4.1.1 and Section 4.1.8 or may assume responsibility for such activities in accordance with in Section 4.4.2(b)(i) or Section 4.4.3(a)(ii);

(d) NGM will be solely responsible for all research of Anti-[***] Collaboration Compounds prior to completion of [***] and Merck will be solely responsible for all subsequent research and development of Anti-[***] Collaboration Compounds prior to the exercise by Merck of the [***] Merck Option with respect thereto, unless and until such Anti-[***] Collaboration Compounds are deemed to be Non-Qualifying Compounds pursuant to this Agreement;

(e) Merck will be solely responsible for all Clinical Studies and other Development activities (including post-POC CMC) for Optioned Compounds after exercise of such Merck Option, and all manufacture and Commercialization of Optioned Compounds and associated Products in and for the Territory, subject to the NGM ANS Option and Co-Detailing Option; and

(f) Merck will be solely responsible for all research, Development and Commercialization of Small Molecule Collaboration Compounds and Small Molecule Products.

2.3 **General Guidelines**. The Parties intend for the following guidelines to apply generally to their activities hereunder: (a) NGM will have the authority to direct research strategy for research activities NGM is performing and shall use Commercially Reasonable Efforts to conduct New Research Program activities for which NGM is responsible to the extent set forth in Section 4.1.5 independently during the New Research Program Term and applicable Tail Period, if any, and subject to the terms and conditions of this Agreement; (b) the Parties desire to engender an atmosphere of robust scientific inquiry and freedom to pursue biological insights, and pursue Collaboration Compounds that meet activity thresholds, preclinical candidate and/or target product profiles conceived of by NGM; and (c) the Parties intend, through their activities hereunder, to discover and develop especially inventive, novel therapies that can improve the lives of patients around the world and that have unambiguous, promotable advantages with respect to existing treatments.

2.4 **Joint Executive Committee**. As of the A&R Effective Date, the Parties have established a committee to provide a forum to discuss high level issues regarding the status of the New Research Program, any Collaboration Compounds, any Research Program Development Candidate and any Optioned Compound the ("**Joint Executive Committee**" or "**JEC**").

2.4.1 *Composition of the Joint Executive Committee.* The JEC is comprised of an equal number of Merck representatives and NGM representatives. Each Party may change its representatives to the JEC from time to time in its sole discretion, effective upon notice to the other Party of such change. These representatives shall have appropriate technical credentials, experience and knowledge, and ongoing familiarity with this Agreement and the New Research Program. Additional representative(s) or consultant(s) may, from time to time, by mutual consent of the Parties, be invited to attend JEC meetings, subject to such representative's or consultant's written agreement to comply with the requirements of Section 10.1.

2.4.2 *JEC Meetings.* The JEC shall meet twice per Calendar Year, or more frequently as the Parties may agree, in accordance with a schedule established by mutual written agreement of the Parties, with the location for such meetings alternating between NGM and Merck facilities (or such other location as may be determined unanimously by the JEC members). Alternatively, the JEC may meet by means of teleconference, videoconference or other similar communications equipment. Each Party shall bear its own expenses related to the attendance of such meetings by its representatives.

2.4.3 *JEC Agendas*. The Alliance Managers shall be responsible for distributing an agenda for each JEC meeting at least ten (10) days in advance of such meeting. Each Party shall have the right to request the Alliance Managers to include any appropriate matter on the agenda, which requests shall be accommodated by the Alliance Managers. The Alliance Managers shall be responsible for generating and issuing minutes, in accordance with Section 2.4.4, of each JEC meeting, which shall include a summary of any actions agreed at the meeting.

2.4.4 *JEC Minutes*. The JEC shall keep minutes with respect to matters before it, which minutes will be issued in draft form and provided to the JEC representatives of each Party for review. Any corrections or comments must be provided to the Alliance Managers within [***] days after the draft minutes are issued, who shall then issue the approved (or, if no comments are provided within such [***]-day period, deemed approved) minutes in final form to the JEC representatives of each Party.

2.4.5 *Discontinuation of Participation on the JEC.* The JEC shall disband with respect to the Research Program upon the earlier of: (a) the end of the Research Program Term and Tail Period, if any, (b) the termination of this Agreement with respect to the Research Program; and (c) NGM providing written notice to Merck of its intention to disband and no longer participate in the JEC. In the event that the JEC is disbanded, any discussions originally before the JEC shall be handled directly between the Parties, without any change to decision-making authority.

2.5 Joint Early Discovery & Development Committee or JEDDC. During the Original Research Program Term, the Parties established a committee that provided a forum to review the scientific research under the Original Research Program (the "**Joint Research Committee**" or "**JRC**"). Upon the nomination of the first Collaboration Compound to reach the stage of nomination by NGM as a Research Program Development Candidate, the Parties established a joint early development committee. On the A&R Effective Date, the Parties determined that the authority of such committee shall be revised to reflect the scope of the New Research Program and combined with the authority previously granted to the Joint Research Committee (from and after the A&R Effective Date, the "**Joint Early Discovery & Development Committee**" or "**JEDDC**").

2.5.1 *Composition of the JEDDC.* The JEDDC is comprised of three (3) representatives of Merck and three (3) representatives of NGM. Each Party may change its representatives to the JEDDC from time to time in its sole discretion, effective upon notice to the other Party of such change. These representatives shall have expertise in preclinical development and early stage clinical development. The JEDDC shall be chaired by a representative of NGM. The chair shall have the

responsibilities set forth in Section 2.7.2, but shall have no additional powers or rights beyond those held by the other JEDDC representatives.

2.5.2 *Function and Powers of the JEDDC.*

(a) With respect to each New Research Program, the JEDDC shall oversee the Development of all Collaboration Compounds prior to exercise of the applicable Merck Option. Without limiting the foregoing, the JEDDC shall serve as a forum to, if and as applicable: (i) [***]; (ii) [***]; (iii) [***]; and (iv) [***]. The JEDDC shall act solely as an advisory, and not a decision-making, body with respect to the Research Program, Additional CVM Collaboration Targets and Small Molecule Collaboration Compounds, except to the extent expressly stated otherwise herein. Without limiting the foregoing, the JEDDC shall also be a forum for NGM to advise Merck regarding: (a) any freedom to operate issues involving Collaboration Targets and Collaboration Compounds, (b) any adverse events regarding Collaboration Compounds, and (c) target product profiles for Collaboration Compounds, if applicable.

(b) Subject to NGM's and Merck's final decision-making rights in accordance with Section 2.8.2, the JEDDC shall oversee and facilitate the conduct of Early Development of the Ophthalmology Research Program Development Candidates through the POC Trial, including:

(i) [***];

(ii) [***];

(iii) [***];

(iv) [***];

(v) [***];

(vi) [***];

(vii) [***];

(viii) [***];

(ix) [***]; and

(x) [***].

2.6 Joint Late Discovery and Development Committee or JLDDC. During the Original Research Program and following exercise of the first Merck Option with respect to an Optioned Compound, the Parties established a joint development committee to oversee the conduct of the Development of Optioned Compounds and Products. As of the A&R Effective Date, the Parties have determined that the authority of such committee shall be revised to reflect the scope of the New Research Program (the "**Joint Late Discovery and Development Committee**" or "**JLDDC**") as follows:

2.6.1 *Composition of the JLDDC.* The JLDDC shall comprise three (3) representatives of Merck and three (3) representatives of NGM. Each Party may change its representatives to the JLDDC from time to time in its sole discretion, effective upon notice to the other Party of such change. Individuals who are members of the JEDDC may also be members of the JLDDC. These representatives shall have expertise and operational responsibilities for Development and/or registration of pharmaceutical products in the therapeutic area(s) relevant to the Optioned Compounds and Products, and sufficient seniority within the applicable Party consistent with the scope of the JLDDC's responsibilities. The JLDDC shall be chaired by a representative of Merck. The chair shall have the responsibilities set forth in Section 2.7.2, but shall have no additional powers or rights beyond those held by the other JLDDC representatives.

2.6.2 *Function and Powers of the JLDDC*. Subject to Merck's final decision-making rights in accordance with Section 2.8.3, the JLDDC shall oversee the Development of all Optioned Compounds and Products after exercise of the Merck Option, including:

(a) [***];

(b) [***];

(c) [***];

(d) [***];

(e) [***];

(f) [***]; and

(g) [***].

2.7 Meetings, Minutes and Agendas of the JEDDC and JLDDC.

2.7.1 *Meetings.* The JEDDC and JLDDC shall meet in accordance with a schedule established by mutual written agreement of the Parties, but no less frequently than once per Calendar Quarter, with the location for such meetings alternating between NGM and Merck facilities (or such other location as may be determined unanimously by the JEC members); provided, however, that the JEDDC shall only discuss matters pertaining to research (*i.e.*, before nomination as a Research Program Development Candidate) at [***] JEDDC meetings and not more than [***] per Calendar Year. Alternatively, the JEDDC and JLDDC may meet by means of teleconference, videoconference or other similar communications equipment. Each Party shall bear its own expenses related to the attendance of such meetings by its representatives.

2.7.2 *Agendas*. The chair of the JEDDC and JLDDC shall be responsible for distributing an agenda for each committee meeting at least [***] days in advance of such meeting. Each Party shall have the right to request the chair to include any matter on the agenda, which requests shall be accommodated by the chair. The chair shall be responsible for generating and issuing, in accordance with Section 2.7.3, minutes of each JEDDC and JLDDC meeting, which shall include a summary of any actions, agreed at the meeting.

2.7.3 *Minutes.* The JEDDC and JLDDC shall keep minutes with respect to decisions taken by it, which minutes will be issued in draft form and provided to the JEDDC and JLDDC representatives of each Party for review. Any corrections or comments must be provided to the chair within [***] days after the draft minutes are issued, who shall then issue the approved (or, if no comments are provided within such [***]-day period, deemed approved) minutes in final form to the JEDDC and JLDDC representatives of each Party.

2.7.4 *Discontinuation of Participation.* The JEDDC shall disband upon the earlier of: (a) the end of the Research Program Term and Tail Periods, if any; (b) NGM providing written notice to Merck of its intention to disband and no longer participate in the JEDDC; and (c) the termination of this Agreement with respect to the Research Program. The JLDDC shall disband upon the earlier of: (i) NGM providing written notice to Merck of its intention to disband and no longer participate in the JLDDC; and (ii) termination of this Agreement with respect to all NGM Optioned Products. In the event that either the JEDDC or JLDDC is disbanded, any decisions and discussions originally before the JEDDC or JLDDC, as applicable, shall be handled directly between the Parties, without any change to decision-making authority.

2.8 Decision-Making within the Joint Development Committees; Final Decision-Making Rights.

2.8.1 *Decisions.* The JEDDC and JLDDC shall each act by consensus to the extent that each committee has decision-making authority under this Agreement. The representatives from each Party on the JEDDC and JLDDC will have, collectively, one (1) vote on behalf of that Party.

2.8.2 *Disputes within the JEDDC.* In the event an issue arises at the JEDDC on which such committee, after a good faith effort, cannot reach consensus within a period of [***] days, then either Party shall have the right to refer such issue for resolution to the Senior Executives, and if such Senior Executives are unable to resolve such issue after a period of [***] Business Days, then:

(a) NGM shall have the final say with respect to issues related to:

(i) [***]; and

(ii) [***];

provided that NGM shall have no decision-making authority with respect to any Small Molecule Collaboration Compound.

(b) Merck shall have the final say with respect to issues related to:

(i) [***]; and

(ii) [***].

For clarity, "[***]" shall include (a) for the Ophthalmology Research Program, [***], (b) for the CVM Research Program, [***] and (c) for the [***] Research Program, [***], in each case (x) [***] and (y) [***].

2.8.3 *Disputes within the JLDDC.* In the event an issue arises at the JLDDC on which such committee, after a good faith effort, cannot reach consensus within a period of [***], then either Party shall have the right to refer such issue for resolution to the Senior Executives, and if such Senior Executives are unable to resolve such issue after a period of [***] Business Days, then Merck shall have the final say with respect to such issue, subject to further modification of Merck's final decision as a result of feedback from internal Merck committees within a reasonable time frame; provided, however, that Merck may not unilaterally decide to [***] or [***] except [***].

2.9 The Joint Commercialization Committee or JCC.

2.9.1 *Composition of the JCC*. Following the first exercise of the NGM ANS Option and upon positive read-out from the first Phase 3 Clinical Trial with respect to which such option was exercised, the Parties agree to establish a joint commercialization committee (the "**Joint Commercialization Committee**" or "**JCC**") with respect to such NGM Optioned Product and any subsequent NGM Optioned Products. The JCC shall comprise an equal number of representatives of Merck and representatives of NGM (but in no event more than two (2) representatives from each Party). Each Party may change its representatives to the JCC from time to time in its sole discretion, effective upon notice to the other Party of such change. The JCC shall be chaired by a representative of Merck.

2.9.2 *Function and Powers of the JCC.* Subject to Merck's final decision-making rights, the JCC shall oversee and manage the Commercialization of each NGM Optioned Product, including:

(a) [***];

(b) [***]; and

(c) [***].

2.9.3 *JCC Meetings*. The JCC shall meet twice per Calendar Year (except in the Calendar Year immediately preceding the anticipated First Commercial Sale of an NGM Optioned Product that NGM is Co-Detailing and during the Calendar Year of such First Commercial Sale, during which Calendar Years the JCC shall meet once per Calendar Quarter), or more frequently as the Parties may agree, in accordance with a schedule established by mutual written agreement of the Parties, with the location for such meetings alternating between NGM and Merck facilities (or such other location as may be determined unanimously by the JCC members). Alternatively, the JCC may meet by means of teleconference, videoconference or other similar communications equipment. Each Party shall bear its own expenses related to the attendance of such meetings by its representatives.

2.9.4 *JCC Agendas*. The chair of the JCC shall be responsible for distributing an agenda for each JCC meeting at least [***] days in advance of such meeting. Each Party shall have the right to request the chair to include any matter on the agenda, which requests shall be accommodated by the chair. The chair shall be

responsible for generating and issuing minutes of each JCC meeting, which shall include a summary of any actions agreed at the meeting.

2.9.5 *JCC Minutes.* The JCC shall keep minutes with respect to decisions taken by it, which minutes will be issued in draft form and provided to the JCC representatives of each Party for review. Any corrections or comments must be provided to the chair within [***] days after the draft minutes are issued, who shall then issue the approved (or, if no comments are provided within such [***]-day period, deemed approved) minutes in final form to the JCC representatives of each Party.

2.9.6 *Discontinuation of Participation on the JCC.* The JCC shall disband upon the earlier of: (a) NGM providing written notice to Merck of its intention to disband and no longer participate in the JCC; (b) Merck providing written notice to NGM of its intention to disband and no longer participate in the JCC; and (c) termination of this Agreement with respect to all NGM Optioned Products. In the event that the JCC is disbanded, any decisions and discussions originally before the JCC shall be handled directly between the Parties, without any change to decision-making authority (*i.e.*, subject to Merck's final decision-making rights).

2.9.7 *Decisions.* The JCC shall act by consensus to the extent that it has decision-making authority under this Agreement.

2.9.8 *Disputes within the JCC.* In the event an issue arises at the JCC involving an NGM Optioned Product with respect to which the NGM ANS Allocation is equal to or greater than [***] on which such committee, after a good faith effort, cannot reach consensus within a period of [***], then either Party shall have the right to refer such issue for resolution to the Senior Executives, and if such Senior Executives are unable to resolve such issue after a period of [***] Business Days, then Merck shall have the final say with respect to such issue. In the event that the NGM ANS Allocation is less than [***] with respect to a given NGM Optioned Product then Merck shall have final say with respect to any issue before the JCC regarding such NGM Optioned Product and without any minimum discussion time at the JCC or need to escalate such matter.

2.10 **Authority**. Each Party shall retain the rights, powers and discretion granted to it under this Agreement and each committee under this ARTICLE 2 shall have solely the powers expressly assigned to it in this Article and elsewhere in this Agreement, and no committee shall have any power to amend, modify or waive compliance with this Agreement.

2.11 **Working Groups**. From time to time, the Parties or any committee may establish a working group (each, a "**Working Group**") to oversee particular projects or activities, which Working Groups may include: (a) an intellectual property Working Group (the "**IP Working Group**"); and/or (b) a finance Working Group (the "**Finance Working Group**"), which shall report to the Parties collectively. Any Working Group may be assigned upon approval of the Parties to report instead to a specific committee or more than one committee. Each Working Group shall undertake the activities allocated to it herein or delegated to it by the Parties, or the committee to which it reports. During the process of establishing each Working Group, such Working Group and the Parties or the committee to which it reports shall agree regarding which matters such Working Group will resolve on its own and which matters such Working Group will advise the Parties or the committee regarding (and with respect to which such advice-specific matters the Parties or committee will resolve); provided, however, that no Party or committee or any other Person designated with authority hereunder may delegate to a Working Group any decision-making authority over any matter that has been expressly allocated to a committee or such Person in this Agreement; and provided, further, that the Parties acknowledge and agree that each Working Group is intended to function primarily in a supporting role providing advice or information to the Parties or committee to which it reports, but that each Working Group will be best positioned to provide expedited guidance regarding certain operational matters as determined by and subject to the jurisdiction of the committee to which such Working Group reports or to the Parties. Any dispute arising within a Working Group shall be referred to the Parties directly or to the committee to which it reports for resolution, as applicable.

2.12 **Alliance Managers**. Each Party shall appoint an employee who shall oversee interactions between the Parties for all matters related to this Agreement and any related agreements between the Parties or their Affiliates (each an "**Alliance Manager**"). Such persons shall endeavor to assure clear and responsive communication between the Parties and the effective exchange of information, and may serve as a single point of contact for any matters arising under this Agreement. The Alliance Managers shall have the right to attend all committee and Working Group meetings as non-voting participants and may bring to the attention of the committee and Working Group any matters or issues either of them reasonably believes should be discussed, and shall have such other responsibilities as the Parties may mutually agree in writing. Each Party may designate different Alliance Managers by notice in writing to the other Party.

ARTICLE 3
TERMINATED NP201 PROGRAM

3.1 **Termination of NP201 Program; Continued Use**.

3.1.1 The Parties engaged in the NP201 Research Collaboration on the terms and conditions set forth in the Original Agreement from the Original Execution Date through May 31, 2019. In a letter dated March 1, 2019, Merck terminated the NP201 Program for convenience pursuant to Section 13.2.2 of the Original Agreement ("**NP201 Program Termination**"), with a termination effective date of May 31, 2019 ("**NP201 Program Termination Date**"). The Parties acknowledge and agree that (a) Merck had the right to terminate the NP201 Program pursuant to Section 13.2.2 of the Original Agreement as of the date the NP201 Program Termination letter was delivered, and (b) the NP201 Program was not terminated by Merck as a result of a Safety Issue.

3.1.2 As of the NP201 Program Termination Date, [***] had progressed to [***]. Pursuant to Section 13.6.2(m), Sections 13.6.2(d) – (i), inclusive, were applicable only to such [***].

3.1.3 As of the NP201 Program Termination Date, NGM paid to Merck an amount equal to the then-outstanding advanced Research Funding that was not used as of the NP201 Program Termination Date.

3.2 Effect of Termination of NP201 Program.

3.2.1 As of the NP201 Program Termination Date, all licenses and rights granted by NGM to Merck under the Original Agreement with respect to NP201 Compounds or NP201 Products terminated and such licenses and rights reverted to NGM (except for those licenses and rights that expressly survive any termination of the NP201 Program as set forth below).

3.2.2 As of the NP201 Program Termination Date, all NP201 Compound(s) existing (*i.e.*, identified or generated) as of March 1, 2019 (but expressly excluding any Merck proprietary compound that is not an NP201 Compound) became Reversion Compounds (the "**NP201 Reversion Compounds**") and all NP201 Products containing such NP201 Compounds became Reversion Products (the "**NP201 Reversion Products**").

3.2.3 Effective as of the NP201 Program Termination Date, Merck granted to NGM the following license in the Territory: an exclusive royalty-bearing, license, under the Merck NP201 Reversion IP, for the sole purpose of developing, using, manufacturing (including making and having made) and commercializing (including selling, offering for sale, importing and exporting) such NP201 Reversion Compounds and NP201 Reversion Products in the Territory for use in the Field, it being agreed and understood that Merck retained all rights under such

Merck NP201 Reversion IP for use in all products other than the NP201 Reversion Compounds and NP201 Reversion Products in the Territory in any field. In partial consideration for having granted the foregoing license and because [***], NGM shall pay to Merck a royalty on worldwide Net Sales (applied *mutatis mutandis*) for such NP201 Reversion Compound or NP201 Reversion Products at a rate of [***]. For clarity, the terms of the Original Agreement will apply to activities of the Parties with respect to the NP201 Program, NP201 Compounds and NP201 Products occurring prior to the A&R Effective Date.

3.3 Permitted Use of NP201 Reversion Compound.

3.3.1 Pursuant to the [***] email between [***], NGM granted Merck (upon Merck's discretion) the ability to use NGM386, which is an NP201 Reversion Compound, for the sole purpose of running the Study. Consistent with the agreement of the Parties pursuant to such email, all Know-How (including data/information, process intellectual property) and Patent Rights arising from the Study as well as the process development to date was owned by Merck and was deemed to constitute [***] to the extent such Know-How and Patents otherwise satisfy the definition of "[***]."

3.3.2 Merck agreed to provide NGM with copies of such Know-How promptly after completion of the Study.

ARTICLE 4
RESEARCH PROGRAM AND CONDUCT OF EARLY DEVELOPMENT

4.1 Conduct of New Research Program.

4.1.1 *Purpose.*

(a) Ophthalmology Research Program. Subject to the Research Funding Budget and the terms of Section 4.1.5, Section 4.2 and Section 4.4, NGM shall conduct the Ophthalmology Research Program with the objective of (a) during the Ophthalmology Research Program Term (i) researching and developing NGM621 through a POC Trial, (ii) identifying Designated Ophthalmology Collaboration Compound(s) that Modulate any Designated Ophthalmology Collaboration Target, (iii) researching and developing Designated Ophthalmology Collaboration Compound(s) that Modulate any Designated Ophthalmology Collaboration Target and (b) to the extent any of the compounds described in subsections (a)(ii) –

(iii) above become Ophthalmology Research Program Tail Compound(s), researching and developing, during the Ophthalmology Research Program Tail Period, such Ophthalmology Research Program Tail Compound(s) for which Merck has not assumed responsibility in accordance with Section 4.4.3(a)(ii), through a POC Trial.

(b) CVM Research Program. Subject to the Research Funding Budget and the terms of Section 4.1.5, Section 4.2 and Section 4.4, NGM shall conduct the CVM Research Program with the objective of (i) identifying CVM Collaboration Compounds that Modulate any CVM Collaboration Target (including any Additional CVM Collaboration Target) and (ii) identifying, researching and developing at least [***] through Research Program Development Candidate designation pursuant to Section 4.1.13.

(c) [***] Research Program. Subject to the Research Funding Budget and the terms of Section 4.1.5, Section 4.2, and Section 4.4, NGM shall conduct the [***] Research Program with the objective of [***] by an Anti-[***] Collaboration Compound that is [***]. The Parties anticipate that, subject to Section 4.1.7, [***].

(d) General. Except as otherwise provided in this Agreement, NGM shall have primary responsibility for the conduct of the New Research Programs during the applicable New Research Program Term, which in the case of the Ophthalmology Research Program includes scientific, pre-clinical, pre-POC CMC, clinical and regulatory activities. At NGM's request or as provided in Section 4.1.8, Merck may contribute to IND-enabling and pre-POC activities performed pursuant to the Ophthalmology Research Program upon agreement by the JEDDC. The activities to be undertaken in the course of the New Research Program Term shall be reported to the JEDDC, at each meeting of the same and each Party shall otherwise provide updates from time-to-time between such meetings as the other Party may reasonably request. Each Party shall consider in good faith all inputs from the other Party, including from the other Party's members on the JEDDC, as applicable, with respect to such activities. The Research Program will be undertaken and performed solely during the Research Program Term and applicable Tail Periods.

4.1.2 *Original Research Program.*

(a) Original Research Program Term. The Original Research Program commenced immediately after the Original Effective Date and

automatically expired as of the A&R Effective Date (the "**Original Research Program Term**").

(b) Selected Oncology Collaboration Compounds and Other Collaboration Compounds. The Parties acknowledge and agree that, as of the A&R Effective Date: (i) the Research Program (and the Research Program Term) shall automatically expire with respect to Selected Oncology Collaboration Compounds, Selected Oncology Collaboration Targets, Other Collaboration Compounds, and Other Collaboration Targets; (ii) all Selected Oncology Collaboration Compounds (including, for clarity, all Related Compounds) and Other Collaboration Compounds (including, for clarity, all Related Compounds) shall be deemed Non-Qualifying Compounds; (iii) all Selected Oncology Collaboration Targets and Other Collaboration Targets shall be deemed Non-Qualifying Targets; and (iv) the terms of Section 4.5 shall apply.

4.1.3 *New Research Program Term.*

(a) Ophthalmology Research Program Term. The "**Ophthalmology Research Program Term**" shall mean the period starting on the A&R Effective Date and continuing until the earliest of (a) [***] following receipt by Merck of the Data Package associated with completion of the first POC Trial for a Designated Ophthalmology Collaboration Compound, (b) exercise by Merck of a Merck Option with respect to any or all of the Designated Ophthalmology Collaboration Compounds in accordance with Section 5.3 and (c) March 31, 2024. The Parties acknowledge that the CATALINA Clinical Study shall be deemed the [***]. For clarity, the Ophthalmology Research Program activities shall begin on the A&R Effective Date.

(b) CVM Research Program Term. The "**CVM Research Program Term**" shall mean the period starting on the A&R Effective Date and continuing until March 31, 2024 (the "**Initial CVM Research Program Term**"), provided that the Initial CVM Research Program Term may be extended upon mutual agreement of the Parties for an additional period of two (2) years until March 31, 2026 (such additional period, if any, the "**Renewal CVM Research Program Term**"), in which case the period shall continue until March 31, 2026. For clarity, the CVM Research Program activities shall begin on the A&R Effective Date.

(c) [***] Research Program Term. The "[***] **Research Program Term**" shall mean the period starting on the A&R Effective Date and continuing until the earliest of (i) [***], (ii) December 31, 2022 and (iii) the Parties' agreement that [***]. For clarity, the [***] Research Program activities shall begin on the A&R Effective Date.

(d) New Research Program Term Extension. In the event that any of the CVM Research Program, the Ophthalmology Research Program or the [***] Research Program is significantly delayed due to consequences of the COVID-19 pandemic, then the Parties shall agree to a reasonable extension of the applicable New Research Program Term.

4.1.4 *Expiration of New Research Program*. Unless the New Research Program is terminated early in accordance with Section 13.4, (a) the Ophthalmology Research Program will expire at the end of the Ophthalmology Research Program Term or at the end of the Ophthalmology Research Program Tail Period, if applicable, (b) the CVM Research Program will expire at the end of the CVM Research Program Term or at the end of the CVM Research Program Tail Period, if applicable, (c) the [***] Research Program will expire at the end of the [***] Research Program Term or at the end of the [***] Research Program Tail Period, if applicable, and (d) the New Research Program will expire in its entirety upon the latest of (i) the expiration of the Ophthalmology Research Program Term or Ophthalmology Research Program Tail Period, if applicable, (ii) the CVM Research Program Term or CVM Research Program Tail Period, as applicable, and (iii) the [***] Research Program Term or [***] Research Program Tail Period, as applicable.

4.1.5 *Performance.*

(a) NGM shall act in good faith and use its Commercially Reasonable Efforts to perform the activities under the Ophthalmology Research Program, CVM Research Program, and [***] Research Program that are set forth in Section 4.1.5(b), Section 4.1.5(c) and Section 4.1.5(d), respectively, during the Research Program Term and Ophthalmology Research Program Tail Period, if any, using the funding provided by Merck hereunder, as set forth in Section 4.2.

(b) With respect to the Ophthalmology Research Program, NGM shall use its Commercially Reasonable Efforts, subject to Sections 4.1.5(f) and 4.1.5(g), to (i) during the Ophthalmology Research Program Term, (A) research and develop NGM621 through a POC Trial, subject to

Section 4.1.12, to enable Merck to exercise the Ophthalmology Merck Option therefor, in its sole discretion, (B) identify Designated Ophthalmology Collaboration Compounds that Modulate any Designated Ophthalmology Collaboration Target, (C) if sufficient funding remains from Merck after NGM's activities pursuant to Sections 4.1.5(c) and 4.1.5(d) and the immediately preceding clause (B), research and advance [***] towards a Research Program Development Candidate designation, (D) progress [***], (E) develop [***] and (F) research and develop [***], by March 31, 2023 and (ii) to the extent there are any Ophthalmology Research Program Tail Compound(s), research and develop such Ophthalmology Research Program Tail Compound(s) over the course of the Ophthalmology Research Program Tail Period through a POC Trial, to enable Merck to exercise the Merck Option therefor, in its sole discretion, except to the extent that Merck has assumed responsibility for such activities in accordance with Section 4.4.3(a)(ii); provided that NGM's obligations pursuant to subsections (i)(D) - (i)(F) above shall terminate upon the earliest of (1) the [***] or (2) the expiration or termination of the Ophthalmology Research Program Term.

(c) With respect to the CVM Research Program, NGM shall use its Commercially Reasonable Efforts, subject to Section 4.1.5(g), during the CVM Research Program Term to identify, research and develop [***] through a Research Program Development Candidate designation pursuant to Section 4.1.13, to enable Merck to exercise the Merck Option therefor, in its sole discretion. NGM shall not have any obligation to research and develop any CVM Research Program Tail Compound(s) over the course of the CVM Research Program Tail Period, if any.

(d) With respect to the [***] Research Program, NGM shall use its Commercially Reasonable Efforts, subject to Section 4.1.5(g), to conduct research concerning Anti-[***] Collaboration Compounds that are [***] described in Section 4.1.1(c).

(e) NGM shall dedicate to the Research Program appropriate resources and allocate personnel with an appropriate level of education, experience and training in identifying, researching and developing Collaboration Targets and Collaboration Compounds in order to achieve the objectives of the Research Program efficiently and expeditiously, which resources and funding shall be consistent with the Research Funding and, except as

provided in Section 4.1.5(f), NGM shall not be obligated to provide resources and personnel that exceed such funding.

(f) Notwithstanding Section 4.1.5(e), starting as of April 1, 2022, NGM shall use its own investment of resources and funding in fulfilling its obligations to use Commercially Reasonable Efforts to achieve the objectives specified in subsection (b)(i)(D) - (b)(i)(F), inclusive; provided that the funding requirement of this Section 4.1.5(f) shall terminate upon the earlier of (i) [***] and (ii) the expiration or termination of the Ophthalmology Research Program Term.

(g) In no event shall NGM have an obligation to conduct any activity pursuant to the Research Program to the extent that such activity is not reimbursed in full by Merck pursuant to Section 4.2 unless such activity is (i) [***], or (ii) [***]. Starting in New Research Program Year 2, after presenting any forecasted budget issues at the JEDDC and subjecting such issues to reasonable discussion, NGM shall have the right, in its reasonable discretion after discussion at the JEDDC, subject to Merck stepping in to continue activities pursuant to Section 4.1.8, to make decisions to pause or slow certain activities under the Ophthalmology Research Program or the CVM Research Program, in each case, that are informed by the JEDDC discussions in order to address any reasonably forecasted budget constraints.

(h) Merck shall keep NGM reasonably informed during the New Research Program Term and the applicable Tail Period, if any, of all material progress being made by or on behalf of Merck with respect to CVM Collaboration Compounds and [***] Collaboration Compounds, at key junctures along the development path, including information with respect to those CVM Collaboration Compounds and [***] Collaboration Compounds that qualify for designation as a Research Program Development Candidate. Without limiting the foregoing or Section 4.1.6(e), until expiration of the CVM Research Program Term, representatives of the research teams for the Parties with respect to the CVM Research Program [***].

4.1.6 *NGM's Responsibilities*. Without limiting the foregoing, during the New Research Program Term and applicable Tail Period, if and to the extent applicable, and in service of Ophthalmology Research Program, the CVM

Research Program and the [***] Research Program, NGM shall, subject to Section 4.1.5(g) and Section 4.1.8:

(a) conduct research activities leading to the nomination of potential Additional CVM Collaboration Targets, including identification, characterization and validation;

(b) optimize proteins, peptides or antibodies against their respective Collaboration Targets to ensure that resulting Collaboration Compounds are viable candidates for future pre-clinical activities and Clinical Studies;

(c) conduct activities related to engineering, modification, expression, production, and purification of Collaboration Compounds, including peptides, recombinant proteins and antibodies;

(d) conduct pre-clinical activities, including pharmacodynamics, pharmacokinetic and safety assessments, for CVM Collaboration Compounds up to Research Program Development Candidate designation, as deemed necessary or desirable by the Parties;

(e) keep Merck reasonably informed at [***] regular JEDDC meetings during the New Research Program Term and Tail Period, if any, of all material progress being made by NGM with respect to CVM Collaboration Compounds, at key junctures along the development path, including presenting Merck and the JEDDC with information in accordance with Section 4.1.13 regarding the data collected by NGM with respect to any CVM Collaboration Compound that qualifies for designation as a Research Program Development Candidate pursuant to Section 4.1.13;

(f) conduct pre-clinical activities, including pharmacodynamics, pharmacokinetic and safety assessments, and Clinical Studies, up to and including the first POC Trial for NGM621, and, to the extent there are any Ophthalmology Research Program Tail Compound(s), each such Ophthalmology Research Program Tail Compound, as deemed necessary or desirable by NGM with input from the JEDDC;

(g) conduct process and formulation development of Ophthalmology Research Program Development Candidates as deemed appropriate by NGM with input from the JEDDC;

(h) have the right and responsibility to manufacture, or have manufactured, Ophthalmology Research Program Development Candidates prior to

Merck's exercise of the Merck Option with respect thereto, including all required bulk drug substance and clinical materials, consistent with NGM's reasonable internal practices, industry standards and all Laws. NGM will conduct any POC Trial of a Ophthalmology Research Program Development Candidate with bulk drug substance the manufacture of which shall be in accordance with all Laws including GMP, it being understood, however that such drug substance will in most cases not be the commercial formulation of such Ophthalmology Research Program Development Candidate. Notwithstanding the foregoing, NGM shall not have any obligation to manufacture or have manufactured any quantities of any Ophthalmology Research Program Development Candidate for use in a Phase 3 Clinical Trial, and any contractors that NGM intends on using for the manufacture of GMP material must be audited and approved by Merck prior to performing any activities under the Ophthalmology Research Program;

(i) develop biomarker and other assays it determines to be useful or desirable for the Ophthalmology Research Program Development Candidates and/or the related potential Products, as deemed appropriate by NGM with input from the JEDDC or JLDDC;

(j) keep Merck informed, including through regular JEDDC and JLDDC meetings during the Research Program Term, of all progress being made by NGM with respect to Ophthalmology Research Program Development Candidates, at key junctures along the development path, including, but not limited to, Research Program Development Candidate designation, IND filing and the like, as well as general progress made for all other Collaboration Compounds;

(k) consider in good faith all reasonable suggestions received from Merck, including through the JEDDC and JLDDC regarding the Research Program;

(l) be responsible for preparing and filing all regulatory filings for Ophthalmology Research Program Development Candidates, including all INDs, up through conduct of the POC Trial, all of which shall be in the name of NGM; and

(m) make available to Merck its reasonable requirements of Collaboration Targets and other reagents for use in its internal small molecule

development activities under ARTICLE 6, if and to the extent available and in NGM's possession.

4.1.7 *Use of Subcontractors.* NGM shall be entitled to utilize the services of any Affiliates and Third Parties to perform discrete elements of its Research Program activities; provided, however, that it shall: (i) remain at all times fully liable for its responsibilities under the Research Program and shall ensure that each Affiliate and subcontractor complies with the terms and conditions of this Agreement; and (ii) ensure that NGM is able to provide Merck with the same rights with respect to any intellectual property rights or materials (*e.g.*, a cell line) arising from the subcontracted activities as it would have if NGM performed such activities under this Agreement. Notwithstanding the foregoing, any contractors that NGM intends on using for the manufacture of GMP material must be audited and approved by Merck prior to performing any Collaboration activities.

4.1.8 [***]. In the event that NGM has (a) [***] or (b) exceeded the Research Funding Cap for a given New Research Program Year (or combination of years if applicable), or it is reasonably anticipated that NGM will exceed the Research Funding Cap for a given New Research Program Year (or combination of years if applicable), except, in each of clauses (a) or (b) above, with respect to the [***] Research Program, NGM shall notify Merck through the JEDDC and/or JLDDC, as applicable, and where at least one CVM Research Program Compound or Ophthalmology Research Program Compound has been nominated to be a Research Program Development Candidate under the Research Program, [***], in accordance with this Section 4.1.8, [***]; provided, however, that [***], in accordance with [***] and [***]. To the extent that [***], and [***] or, [***], [***], [***], and [***].

4.1.9 *Licenses.*

(a) By Merck.

(i) As of the Original Effective Date, Merck granted to NGM a non-exclusive, royalty-free license, under the Merck IP, solely for NGM to conduct the Original Research Program. For the avoidance of doubt: (i) the license set forth in this Section 4.1.9(a)(i) did not include any right to manufacture or sell products to Third Parties; and (ii) NGM was not permitted to use the Merck IP as licensed under this Section 4.1.9(a)(i) other than to perform the Original Research Program during the Original

Research Program Term and to research, Develop and use Tail Compounds/Targets during the Tail Period.

(ii) As of the A&R Effective Date, Merck hereby grants to NGM a non-exclusive, royalty-free license, under the Merck IP, solely for NGM to conduct the New Research Program during the New Research Program Term and to research, Develop and use Ophthalmology Research Program Tail Compounds/Targets during the Ophthalmology Research Program Tail Period (or after the Ophthalmology Research Program Tail Period to the extent set forth in Section 4.4.2(b)(ii)). NGM may, with Merck's prior written consent, grant sublicenses of the license set forth in this Section 4.1.9(a)(ii) to Affiliates, and to Third Parties who are acting on NGM's behalf in the conduct of activities under the Research Program or with respect to Ophthalmology Research Program Tail Compounds/Targets, but not a single sublicense of the entirety of such license to a single Third Party, which single sublicense would require the prior written consent of Merck; provided, however, that: (A) each such sublicense is in writing and is consistent with the applicable terms of this Agreement; (B) each such sublicense terminates upon the earlier of (x) the later of termination of the Ophthalmology Research Program Tail Period and termination of the New Research Program Term and (y) or termination of this Agreement; and (C) each sublicense solely permits the use of the sublicensed Merck IP within the scope of the license granted by Merck pursuant to this Section 4.1.9(a)(ii). For the avoidance of doubt: (i) the license set forth in this Section 4.1.9(a)(ii) does not include any right to manufacture or sell products to Third Parties; and (ii) NGM may not use the Merck IP as licensed under this Section 4.1.9(a)(ii) other than to perform the New Research Program during the New Research Program Term and to research, Develop and use Ophthalmology Research Program Tail Compounds/Targets during the Ophthalmology Research Program Tail Period.

(b) By NGM.

(i) As of the Original Effective Date, NGM granted to Merck a non-exclusive, royalty-free license, under any and all Patent Rights and Know-How that are Controlled by NGM or any of its Affiliates (subject to Section 14.3), solely for Merck to conduct such

activities as were permitted to be undertaken by it pursuant to Section 4.1.8 or otherwise as requested by NGM and agreed to by Merck for the Original Research Program under the Original Agreement. For the avoidance of doubt: (i) the license set forth in this Section 4.1.9(b)(i) did not include any right to manufacture or sell products to Third Parties; and (ii) Merck was not permitted to use the NGM intellectual property rights that were licensed other than to perform the Original Research Program during the Original Research Program Term and to research, Develop and use Tail Compounds/Targets during the Tail Period.

(ii) As of the A&R Effective Date, NGM hereby grants to Merck a non-exclusive, royalty-free license, under any and all Patent Rights and Know-How that are Controlled by NGM or any of its Affiliates (subject to Section 14.3), solely for Merck (x) to conduct such activities as may be undertaken by it pursuant to Section 4.1.8 or otherwise as requested by NGM and agreed to by Merck under the New Research Program during the New Research Program Term and (y) to research, Develop and use Tail Compounds/Targets during the applicable Tail Period (or after the applicable Tail Period to the extent set forth in Section 4.4.2(c)(i) or Section 4.4.3(a)(ii)), in each case as and to the extent specified in this ARTICLE 4. Merck may, with NGM's prior written consent, grant sublicenses of the license set forth in this Section 4.1.9(b)(ii) to Third Parties who are acting on Merck's behalf in the conduct of activities under the New Research Program or with respect to Tail Compounds/Targets; provided, however, that: (A) each such sublicense is in writing and is consistent with the applicable terms of this Agreement; (B) each such sublicense terminates upon the termination of this Agreement; and (C) each sublicense solely permits the use of such sublicensed Patent Rights and Know-How within the scope of the license granted by NGM pursuant to this Section 4.1.9(b)(ii). For the avoidance of doubt: (1) the license set forth in this Section 4.1.9(b)(ii) does not include any right to manufacture or sell products to Third Parties; and (2) Merck may not use the NGM intellectual property rights licensed under this Section 4.1.9(b)(ii) other than to perform the New Research Program during the New Research Program Term and to research, Develop and use Tail Compounds/Targets during the applicable Tail Period.

4.1.10 *Additional CVM Collaboration Targets*. Pursuant to the CVM Research Program, NGM shall evaluate human DNA sequences, RNA sequences, proteins or peptides related to cardiovascular or metabolic disease to determine if they are promising targets for the research and development of CVM Collaboration Compounds under the CVM Research Program. NGM shall present and recommend to the JEDDC, for review and discussion regarding designation as Additional CVM Collaboration Targets under this Agreement, all human DNA sequences, RNA sequences, proteins or peptides that [***] such human DNA sequences, RNA sequences, proteins or peptides for designation as Additional CVM Collaboration Targets under this Agreement. If Merck decides that it wants NGM to perform research on any such recommended human DNA sequence, RNA sequence, protein or peptide pursuant to the CVM Research Program with funding provided by Merck to the extent set forth herein, Merck shall notify NGM of such decision within [***] after the [***], and it shall become an Additional CVM Collaboration Target upon NGM's receipt of such notice. If Merck does not provide such notice within such [***] period or delivers a notice that declines such target, then such recommended human DNA sequence, RNA sequence, protein or peptide shall not become an Additional CVM Collaboration Target, and NGM shall have the right to work on it without any further obligations to Merck other than as set forth in Section 4.7. NGM shall not be obligated to conduct any research activities or incur any expenses associated with any research activities under this Agreement with respect to such Additional CVM Collaboration Targets until the Parties agree in writing for certain activities to be funded by Merck.

4.1.11 *Removal of CVM Collaboration Targets*. Merck shall have the right to remove a CVM Collaboration Target from the CVM Research Program on [***] notice to NGM. Effective immediately upon the receipt of any such notice consistent with Section 16.5, NGM will use Commercially Reasonable Efforts to wind-down any ongoing activities under such CVM Research Program directed to such CVM Collaboration Target expeditiously (or, at NGM's election, expeditiously transition such activities to be conducted by or on behalf of NGM or its licensees independently outside of the Collaboration in such case without further funding obligations by Merck). Merck shall be responsible for funding such wind down activities in accordance with the Research Funding Budget (subject to the applicable Research Funding Cap) and Section 4.2; provided that Merck is not obligated to fund activities that are conducted by or on behalf of NGM or its licensees independently outside the Collaboration, including any costs associated with any transition activities. NGM shall provide Merck with prompt written notice following the wind down or transition to NGM pursuant to this Section 4.1.11 of the date that such activities were wound down or transitioned to

NGM pursuant to this Section 4.1.11, and as of the effective date contained therein (a) such terminated CVM Collaboration Target shall be deemed a Non-Qualifying Target and all CVM Collaboration Compounds (including all Related Compounds thereto) that Modulate such terminated CVM Collaboration Target shall be deemed Non-Qualifying Compounds; and (b) the terms of Section 4.5 shall apply; provided that, notwithstanding anything to the contrary set forth in this Agreement, any such Non-Qualifying Compounds designated pursuant to this Section 4.1.11 shall only be subject to the royalty obligations due to Merck as set forth in Section 9.7 (subject to Section 4.9.3) if [***] as of the time of such notice provided pursuant to this Section 4.1.11.

4.1.12 *Performance of Ophthalmology Research Program related to NGM621*. Schedule 4.1.12 hereto sets forth the study costs, forecasted budget and [***], with reasonable specificity, of the CATALINA Clinical Study, in each case, as of the A&R Effective Date. In the furtherance of NGM's performance of the Ophthalmology Research Program set forth in Section 4.1.5(b)(i)(A) (research and develop NGM621 through a POC Trial) and the CATALINA Clinical Study, [***], unless [***].

4.1.13 *Nomination of Collaboration Compounds to Research Program Development Candidate*. Consistent with NGM's performance of the Research Program set forth in Section 4.1.5, NGM shall provide updates to Merck at [***] regularly scheduled JEDDC meetings regarding the status of CVM Collaboration Compounds and Designated Ophthalmology Collaboration Compounds. If NGM determines in its reasonable discretion during the period starting on the A&R Effective Date and ending as described in Section 4.1.5(f), that an Anti-[***] Collaboration Compound is suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies, it shall notify Merck in writing. When NGM determines in its reasonable discretion that sufficient information is available for Merck to consider a CVM Collaboration Compound or a Designated Ophthalmology Collaboration Compound (other than any Anti-[***] Collaboration Compound for which NGM makes the determination set forth in the preceding sentence) as suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies then, (a) with respect to CVM Collaboration Compounds, NGM shall provide the Data Package set forth in Section 5.1.2 and (b) with respect to such Designated Ophthalmology Collaboration Compounds, NGM shall provide information that is then in its possession or Control sufficient to evaluate such compounds, in each case ((a) and (b)), to the JEDDC to permit Merck to evaluate such Collaboration Compound in a manner consistent with Merck's standards for comparable compounds and make a decision (in its sole discretion) regarding designation as suitable for the

initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies (and therefore designation as a Research Program Development Candidate) in accordance with the remainder of this Section 4.1.13; provided that consistent with Section 4.1.13(b), the time period for Merck to evaluate its Merck Option shall not begin unless and until Merck determines that such CVM Collaboration Compound meets the criteria for a Research Program Development Candidate in accordance with this Section 4.1.13. After NGM delivers such Data Package or information as set forth above, the following shall apply:

(a) Within [***] after Merck's receipt of such Data Package or information, as applicable, Merck shall notify NGM that Merck has determined in good faith that (i) such Collaboration Compound is suitable to be a Research Program Development Candidate, (ii) more information is needed to evaluate any such Collaboration Compound as a Research Program Development Candidate or (iii) such Collaboration Compound is not suitable to be a Research Program Development Candidate, in which case such Collaboration Compound, together with its Related Compounds that are not Related Compounds to any other Collaboration Compound, shall be deemed to be Non-Qualified Compounds. If Merck does not provide such notice within such [***], then such Collaboration Compound that are not Related Compounds to any other Collaboration Compound, together with its Related Compounds, shall be deemed to be Non-Qualified Compounds.

(b) If Merck's notice states that it has determined that such Collaboration Compound is suitable to be a Research Program Development Candidate, then such Collaboration Compound shall be deemed to be a Research Program Development Candidate upon NGM's receipt of such notice and, with respect to CVM Collaboration Compounds, the Option Period for the CVM Merck Option for such CVM Research Program Development Candidate shall commence as of such date.

(c) If Merck's notice states that it has determined that more information is needed to evaluate any such Collaboration Compound as a Research Program Development Candidate, then (1) such notice will include a description of such additional information and the activities necessary to generate it, with reasonable specificity, and the Parties will agree on a timeline for NGM to conduct such activities; provided that NGM shall have no obligation to perform any [***], and (2) subject to Section 4.1.5(g), NGM shall use Commercially Reasonable Efforts to conduct such activities and present the results of such activities to Merck for

evaluation by Merck in accordance with this Section 4.1.13. Within [***] after NGM's presentation of such results, Merck shall notify NGM that Merck has determined in good faith that either (i) such Collaboration Compound is suitable to be a Research Program Development Candidate, in which case such Collaboration Compound shall be deemed to be a Research Program Development Candidate upon NGM's receipt of such notice and, with respect to CVM Collaboration Compounds, the Option Period for the CVM Merck Option for such CVM Research Program Development Candidate shall commence as of such date or (ii) such Collaboration Compound is not suitable to be a Research Program Development Candidate, in which case such Collaboration Compound, together with its Related Compounds that are not Related Compounds to any other Collaboration Compound, shall be deemed to be Non-Qualified Compounds. If Merck does not provide such notice within such [***] period, then such Collaboration Compound, together with its Related Compounds that are not Related Compounds to any other Collaboration Compound, shall be deemed to be Non-Qualified Compounds.

4.1.14 *Presentation of [***] Research Program Data*. Consistent with NGM's performance of the Research Program set forth in Section 4.1.5, NGM shall provide updates to Merck at [***] regularly scheduled JEDDC meetings regarding the status of the [***] Research Program and Anti-[***] Collaboration Compounds. When the [***] have been completed, NGM shall provide Merck with the material results of the [***] Research Program and any other data and information in NGM's or its Affiliates' possession or Control that is relevant to the [***] Research Program and reasonably requested by Merck in order for Merck to evaluate whether to exercise its rights under this Section (provided that NGM shall not be required to perform additional research and development activities with respect thereto) (the "[***] **Data Package**"). Merck shall have [***] from receipt of the [***] Data Package to notify NGM that Merck has decided (in its sole discretion) to assume responsibility for all research and development activities with respect to all Anti-[***] Collaboration Compounds. If Merck provides such notice within such [***] period, then, in accordance with Section 4.4.1(a)(ii), (a) the Anti-[***] Collaboration Compounds shall be deemed to be [***] Research Program Tail Compounds, (b) [***] shall be deemed to be a Tail Target, (c) Merck shall be deemed to have exercised its right pursuant to Section 4.4.1(a)(ii) for the [***] Tail Period, (d) NGM shall not have any further obligations to conduct any research or development with respect thereto, and (e) Development of the [***] Research Program Tail Compounds shall be conducted in accordance with the applicable provisions of Section 4.4 until the earliest of (i)

Merck's exercise (in its sole discretion) of, or the expiration without exercise of, the [***] Merck Option, (ii) such [***] Tail Period is terminated pursuant to Section 4.4.2 or (iii) such [***] Tail Period expires pursuant to Section 4.4.1(c). If Merck does not provide such notice within such [***] period, then upon the expiration of such period, all Anti-[***] Collaboration Compounds shall be deemed to be Non-Qualifying Compounds and [***] shall be deemed to be a Non-Qualifying Target.

4.1.15 *Reservation of Rights and Process for* [***]. Notwithstanding anything to the contrary in this Agreement: (a) as of the A&R Effective Date, [***] is a Collaboration Target and shall not be an Other Collaboration Target or Selected Oncology Collaboration Target, (b) if reasonably requested by Merck after discussion by the Parties or at the JEDDC and prior to Merck's provision of notice, if any, pursuant to clause (d), NGM shall use Commercially Reasonable Efforts to perform research and development activities with respect to [***] during the New Research Program Term (with funding provided by Merck to the extent set forth in Section 4.2, subject to the applicable Research Funding Caps, or, if the Parties agree to exceed the applicable Research Funding Cap, such additional funding as Merck may in its discretion agree to provide) under the terms and conditions of the [***] Research Program, applied *mutatis mutandis*, except that Merck may, in its reasonable discretion after discussion by the Parties or at the JEDDC, (i) determine a reasonable alternative point in development (*i.e.*, other than [***] but prior to the first designation of a Collaboration Compound that Modulates [***] as a Research Program Development Candidate) that triggers the time at which Merck must elect a Tail Period for [***] pursuant to clause (c) or provide notice pursuant to clause (d), and (ii) determine reasonable alternative development objectives, (c) Merck shall have the right, at any time after the A&R Effective Date that is prior to the earlier of (i) the end of the New Research Program Term and (ii) Merck's provision of notice, if any, pursuant to clause (d), to designate [***] as a Tail Target (*mutatis mutandis*) and to designate Tail Compounds (*mutatis mutandis*) with respect thereto, with a Tail Period (*mutatis mutandis*) to be performed by Merck under the terms and conditions of the [***] Research Program Tail Period applied *mutatis mutandis*, and (d) if Merck is not interested in pursuing or continuing to pursue [***], it will notify NGM, and upon receipt of such notice, [***] will be deemed to be an Other Collaboration Target and a Non-Qualifying Target. For clarity, if Merck exercises its rights under clause (b) or (c), it shall have the right to exercise, in its sole discretion, a Merck Option under the terms and conditions of the [***] Merck Option applied *mutatis mutandis.*

4.2 NGM FTEs, Merck funding of NGM FTEs and NGM's Out-of-Pocket Expenses.

4.2.1 *NGM FTEs*. During the Research Program Term and the Tail Period, if any, NGM shall, in its sole discretion, assign the appropriate number of FTEs to conduct NGM's activities under the Research Program; provided, however, that if NGM chooses in its discretion to provide staffing that exceeds the Research Funding Budget, Merck will not be obligated to pay for those NGM FTEs that exceed such Research Funding Budget.

4.2.2 *FTE and External Cost Funding; Annual Budgets; True Up*.

(a) NGM shall provide to Merck, (i) as of the A&R Effective Date for the New Research Program Year 1, and (ii) not later than [***] prior to the start of each of New Research Program Year 2 and New Research Program Year 3, a rolling annual budget, for the subsequent two (2) Research Program Years, of its projected FTE funding requirements and projected Third Party costs (including costs for consultants) and other out-of-pocket expenses incurred by it in the conduct of the Ophthalmology Research Program, CVM Research Program and [***] Research Program (and solely with respect to New Research Program Year 1, incurred in connection with the research and development of Non-Qualifying Compounds and Non-Qualifying Targets) (in each case, other than the [***]), subject to Section 4.2.4 (collectively, the "**External Costs**") for each such year together with a proposed quarterly breakdown of such budget, with the first year's budget of the rolling annual budget for such New Research Program Year constituting the fixed budget for such year (such year's budget the "**Research Funding Budget**"); provided, however, that the budget for New Research Program Year 1 provided under Section 4.2.2(a)(i) shall cover the period from April 1, 2021 through the end of New Research Program Year 1, inclusive of any actuals known to NGM as of such date, and further provided that in no event shall the Research Funding Budget for any Research Program Year be in excess of the applicable cap set forth below (except with respect to the Post-Year 1 NGM621 Funding, which funding by Merck is not capped and not included in the Research Funding Cap set forth below), which such cap may only be revised upon mutual written agreement of the Parties ("**Research Funding Cap**"):

Funding Year(s)	Activities	Research Funding Cap
New Research Program Year 1 (provided, however, that for this purpose New Research Program Year 1 shall be deemed to have commenced as of April 1, 2021)	Ophthalmology Research Program, CVM Research Program, [***] Research Program, research and development of Non-Qualifying Compounds and Non-Qualifying Targets that exist as of the A&R Effective Date and research and development activities consistent with NGM's performance of the Research Program prior to the A&R Effective Date	$86,000,000 [***]
New Research Program Years 2 and 3 combined	For Ophthalmology Research Program, CVM Research Program (other than research, development and manufacture of NGM621) and [***] Research Program	$20,000,000
Renewal CVM Research Program Term	CVM Research Program	$20,000,000
Ophthalmology Research Program Tail Period Year 1	[***]	[***]
Ophthalmology Research Program Tail Period Year 2	[***]	[***]
Ophthalmology Research Program Tail Period Year 3	[***]	[***]
Ophthalmology Research Program Tail Period Year 4	[***]	[***]

(b) NGM will keep true, accurate and complete records of its FTE work and External Costs incurred under the Research Program (and solely with respect to New Research Program Year 1, incurred in connection with the research and development of Non-Qualifying Compounds and Non-Qualifying Targets). Upon the request of Merck, NGM will permit Merck or its independent certified accountants of nationally recognized standing, to have access during ordinary business hours to such of NGM's records as may be necessary to reasonably substantiate the accuracy of NGM's FTE efforts under the Research Program.

(c) During the Research Program Term, Merck shall make payments to NGM on [***], no later than [***] after the beginning of the applicable [***], in an amount equal to [***] of the applicable Research Funding Budget (each such [***], the "[***] **Research Funding**" and all such amounts, as adjusted by Section 4.2.2(e), collectively, the "**Research Funding**"). For clarity, Research Funding shall (i) include funding for NGM FTEs conducting all elements of the Research Program (and solely with respect to New Research Program Year 1 (provided, however, that for this purpose New Research Program Year 1 shall be deemed to have commenced as of April 1, 2021), incurred in connection with the research and development of Non-Qualifying Compounds and Non-Qualifying Targets), including Early Development activities, pre-POC CMC and regulatory activities and (ii) [***].

(d) During New Research Program Year 1, NGM will use Commercially Reasonable Efforts to incur an amount equal to Thirty-Five Million United States Dollars ($35,000,000) for FTE work and External Costs related to the Ophthalmology Research Program ([***]), the CVM Research Program, and/or the [***] Research Program; provided, however, that for this purpose New Research Program Year 1 shall be deemed to have commenced as of April 1, 2021.

(e) Within [***] of the end of a [***], NGM shall provide to Merck an accounting of the number of FTEs actually deployed in the conduct of the Research Program during such [***] (and solely with respect to New Research Program Year 1 (provided, however, that for this purpose New Research Program Year 1 shall be deemed to have commenced as of April 1, 2021), actually deployed in the conduct of the research or development of Non-Qualifying Compounds and Non-Qualifying Targets), multiplied by the FTE Rate, and a determination of the variance of such actual FTE costs from the [***] Research Funding provided for such [***] by Merck

(the "**FTE True Up Report**"), and shall provide to Merck an accounting of the amount of actual External Costs incurred by NGM during such [***] minus any [***], including appropriate supporting evidence (*e.g.*, copies of receipts) for amounts in excess of [***], and a determination of the variance of such actually incurred External Costs from the [***] Research Funding provided for such [***] by Merck (the "**External Costs True Up Report**"). Where such variance(s) is/are negative but remain beneath the Research Funding Cap for the applicable period (together with amounts already paid during such New Research Program Year), resulting in a shortfall of Research Funding for the [***], Merck shall promptly pay such shortfall amount to NGM in addition to the [***] Research Funding due for the current [***]. Where such variance(s) is/are positive, Merck shall have the right to deduct such positive variance amount from the next scheduled [***] Research Funding amount unless the Parties had previously agreed to such positive variance prior to NGM incurring such additional costs, or, where there is no such further [***] Research Funding amount owed to NGM, NGM shall repay to Merck such positive variance amount within [***] of the date of such True Up Report. Solely with respect to the [***] true-up mechanism during the New Research Program Term, NGM shall provide to Merck an accounting of the applicable costs that would have been payable as [***] Research Funding if the New Research Program Year 1 had begun on April 1, 2021 and Merck shall pay this additional amount at the same time it would pay NGM any funds pursuant to the true-up mechanisms contained herein.

(f) In the event that the Parties agree to any Renewal CVM Research Program Term pursuant to Section 4.1.3(b), then NGM shall continue to submit Research Funding Budgets pursuant to Section 4.2.2(a) subject to the applicable Research Funding Cap. The Parties agree that the funding, reimbursement and true-up provisions of this Section 4.2.2 shall apply to any Renewal CVM Research Program Term.

(g) NGM shall apply the Research Funding it receives under this Agreement solely to carry out its activities under, and in furtherance of the New Research Program (or solely with respect to New Research Program Year 1 (provided, however, that for this purpose New Research Program Year 1 shall be deemed to have commenced as of April 1, 2021), in furtherance of the research and development of Non-Qualifying Compounds and Non-Qualifying Targets that exist as of the A&R Effective Date and research and development activities consistent with NGM's performance of the Research Program prior to the A&R Effective Date), and, in each case, in

accordance with the terms and conditions of this Agreement. NGM covenants that it shall not use any Research Funding obtained from Merck to fund any internal or external costs (i) associated with its activities under any of the Existing Collaboration Agreements, (ii) to research or develop any Retained Compounds or Retained Targets, and/or (iii) associated with its activities related to any Non-Qualifying Compounds and Non-Qualifying Targets following the end of New Research Program Year 1.

4.2.3 *External Costs*.

(a) "External Costs" shall include [***] (*e.g.*, any [***]: (i) [***]; or (ii) [***], in each case of (i) and (ii), to be used solely (or if applicable to other uses, then a fair allocation of such costs) in the conduct of the Research Program (or solely with respect to New Research Program Year 1 (provided, however, that for this purpose the New Research Program Year 1 shall be deemed to have commenced as of April 1, 2021), in the conduct of research or development of Non-Qualifying Compounds and Non-Qualifying Targets that exist as of the A&R Effective Date and research and development activities consistent with NGM's performance of the Research Program prior to the A&R Effective Date); provided, however, that Merck's approval shall be obtained in writing in advance for such External Costs that are in excess of [***] for any such [***]; provided, further, that Merck shall not be responsible for [***]. For clarity, any External Costs that are: (1) approved by Merck under this Section 4.2.3, shall be included in the Research Funding Budget and shall, accordingly, be subject to, and count against, the Research Funding Cap; or (2) not approved by Merck under this Section 4.2.3 (as and to the extent such approval is necessary), shall not be included in the Research Funding Budget, shall not count against the Research Funding Cap and NGM shall be solely responsible for any such costs.

4.2.4 *Expense Reduction.* The Parties agree to cooperate during the Research Program Term in identifying and implementing opportunities to reduce the costs incurred in the conduct of the Research Program, including costs of equipment, consumables such as laboratory supplies and Third Party services such as toxicology, clinical studies or manufacturing services, provided such cooperation does not unduly delay or hamper NGM in the performance of its activities

thereunder. These attempts may include exploration of Merck's preferred supply arrangements, and Merck's procurement expertise.

4.2.5 *Records; Audits.* NGM will keep, and will cause each of its Affiliates and subcontractors, as applicable, to keep, adequate books and records of accounting of all FTEs, FTE spend and out-of-pocket expenses for the Collaboration for the purpose of ensuring its compliance hereunder. For the [***] following the end of the Calendar Year to which such books and records of accounting (including those of its Affiliates, as applicable) relate will be kept at its principal place of business. At the request of Merck, NGM will permit (and procure its Affiliates, to permit) an independent certified public accounting firm of internationally recognized standing selected by Merck and reasonably acceptable to NGM to have access during normal business hours to such of the records as may be reasonably necessary to verify the accuracy of the payments due hereunder from Merck in connection with FTEs and out-of-pocket expenses for any Calendar Year ending not more than [***] following the end of any Calendar Year. Such examinations may not be conducted more than [***] in any Calendar Year or [***]. The accounting firm shall disclose to Merck only whether the reports are correct or incorrect and the amount of any discrepancy. No other Confidential Information shall be provided. If such accounting firm correctly identifies a discrepancy made during such period, the appropriate Party shall pay the other Party the amount of the discrepancy within [***] of the date of delivery of such accounting firm's written report so correctly concluding or as otherwise agreed upon by the Parties. The fees charged by such accounting firm shall be paid by Merck; provided, however, that if the overcharge by NGM [***], then NGM shall pay the fees. Upon the expiration of [***] following the end of any Calendar Year, absent willful misconduct or fraud by NGM (or its Affiliates, as applicable) the calculation of amounts payable with respect to such Calendar Year shall be binding and conclusive upon Merck, and NGM shall be released from any liability or accountability with respect to amounts payable for such Calendar Year. Merck shall treat all financial information subject to review under this Section in accordance with the confidentiality and non-use provisions of this Agreement, and shall cause its accounting firm to enter into an acceptable

confidentiality agreement with NGM obligating it to retain all such Confidential Information in confidence pursuant to such confidentiality agreement.

4.2.6 *Potential Increases to the Research Funding Cap*. The Research Funding Cap applicable to each New Research Program Year or Years, as applicable, may only be increased by the mutual agreement of the Parties.

4.2.7 *NGM621 Funding*.

(a) Research Funding.

(i) During the New Research Program Term (provided that for this purpose New Research Program Year 1 shall be deemed to have commenced as of April 1, 2021), [***].

(ii) During New Research Program Year 1 (provided, however, that for this purpose New Research Program Year 1 shall be deemed to have commenced as of April 1, 2021), Merck agrees to provide reimbursement for the research and Development of NGM621, except for [***], subject to the applicable Research Funding Cap pursuant to Section 4.2.2. After New Research Program Year 1, through the earlier of (1) the remainder of the Ophthalmology Research Program Term or (2) the exercise (in Merck's sole discretion) of the Merck Option with respect to NGM621 or Merck's waiver (in Merck's sole discretion) of such Merck Option with respect to NGM621, Merck agrees to provide reimbursement for the research and Development of NGM621 in addition to the applicable Research Funding Cap; provided, [***]; provided, further, that, in addition to the budget information and [***] set forth on Schedule 4.1.12, [***]. Consistent with Section 4.1.12, Merck shall not have any obligation to provide (x) [***] or (y) [***], unless Merck consents in writing [***]; provided that, the Parties shall discuss [***].

(b) Manufacturing. Unless Merck specifically agrees otherwise in writing, in no event shall Merck be obligated to reimburse NGM for any costs or funding related to the manufacture of NGM621 for Phase 3 Clinical Trials.

4.2.8 *Reinvestment of a Portion of Ophthalmology Option Fees.* In the event that Merck exercises (in its sole discretion), during the Ophthalmology Research Program Term, (a) its first Ophthalmology Merck Option with respect to an Anti-

C3 Collaboration Compound without exercising the Alternative Ophthalmology Merck Option and makes a corresponding payment pursuant to Section 9.4 or (b) its first Ophthalmology Merck Option with respect to an Anti-C3 Collaboration Compound and also exercises the Alternative Ophthalmology Merck Option and makes a corresponding payment pursuant to Section 9.4, in each case (a) and (b), then NGM will notify Merck if the then-remaining Research Funding for the Ophthalmology Research Program, the CVM Research Program and the [***] Research Program is less than the amount of the Research Funding Cap applicable to such programs over the then-remaining New Research Program Years and, if so, how much funding remains from the Research Funding for the then-remaining New Research Program Years. From and after the date of such exercise, notwithstanding anything herein to the contrary, NGM and Merck shall [***], consistent with the Research Program Budget, until the earlier of (x) [***].

4.3 Early Development Matters. The following shall pertain to NGM's Early Development activities for Ophthalmology Research Program Development Candidates under the Ophthalmology Research Program:

4.3.1 *Reports.* NGM shall provide to the JEDDC reasonable progress and spending updates at each Calendar Quarter meeting of the JEDDC on the status of such Early Development activities, including summaries of data, summaries of the actual and anticipated areas of spending and expenses, and the likelihood of, and timetable for, completion of such Early Development activities and, with respect to the Ophthalmology Research Program, advancement of Ophthalmology Research Program Development Candidates to the next phase of Development.

4.3.2 *Ownership of Regulatory Filings*.

(a) Until Merck exercises a Merck Option pursuant to Section 5.3, the Party primarily conducting Development activities for a Research Program shall own and maintain all regulatory filings for the applicable Research Program Development Candidates made by it and developed pursuant to this Agreement, including all INDs. Such Party shall provide the JEDDC with regular updates regarding the status of regulatory filings and correspondences for such Research Program Development Candidates, and such regulatory filings and correspondences shall be reviewed by the JEDDC or a working group established by such committee.

(b) Without limiting Section 5.5, upon exercise of the Merck Option with respect to a Research Program Development Candidate, to the extent owned by NGM, NGM shall transfer ownership of such regulatory filings

for such Research Program Development Candidate, including all relevant INDs to Merck, and provide Merck with copies of or access to such INDs and other regulatory filings, and all pre-clinical and clinical data and results (including pharmacology, toxicology, formulation and stability studies). In the event that primary responsibility for conducting Development activities for a Research Program transfers from one Party to another in accordance with this ARTICLE 4, without limiting any other transfer obligation herein, such Party shall transfer ownership of such regulatory filings for the applicable Research Program Development Candidates, including all relevant INDs to the other Party, and provide the other Party with copies of or access to such INDs and other regulatory filings, and all pre-clinical and clinical data and results (including pharmacology, toxicology, formulation and stability studies).

4.3.3 *Adverse Event Reporting*. Beginning on the Original Effective Date and continuing until such time, if any, that Merck exercises the Merck Option with respect to an Ophthalmology Research Program Development Candidate, NGM shall be responsible for reporting all adverse drug reaction experiences related to the clinical activities of NGM under this Agreement to the appropriate Regulatory Authorities in the countries in the Territory in which the Ophthalmology Research Program Development Candidate is being developed, in accordance with the Laws of the relevant countries and Regulatory Authorities. Without limiting the foregoing, (a) upon Merck's request, NGM shall provide copies of any adverse event reports with respect to an Ophthalmology Research Program Development Candidate and any details related thereto that Merck reasonably requests and (b) NGM shall promptly notify Merck of any serious adverse event with respect to an Ophthalmology Research Program Development Candidate if such serious adverse event is deemed related to such Ophthalmology Research Program Development Candidate.

4.4 Research and Development during the Tail Period.

4.4.1 *Portfolio Review & Tail Period Determination.*

(a) Tail Periods.

(i) With respect to each of the Ophthalmology Research Program and CVM Research Program, starting at the beginning of the three (3) month period immediately prior to the last day of the Ophthalmology Research Program Term or the CVM Research Program Term, as applicable, and extending until the later of (A)

the end of any applicable Option Period that will end within [***] after the applicable Research Program Term and (B) the last day of such three (3)-month period, Merck shall have the right to review with NGM the Ophthalmology Collaboration Compounds or CVM Collaboration Compounds applicable to such Research Program, and determine if there are (x) in the case of the Ophthalmology Research Program, Collaboration Compounds from the Ophthalmology Research Program for which Merck desires NGM to continue to conduct research and development, where successful, through POC (the "**Ophthalmology Research Program Tail Compounds**," and the Collaboration Target(s) that are Modulated by such Collaboration Compounds, "**Ophthalmology Research Program Tail Targets**") and (y) in the case of the CVM Research Program, Collaboration Compounds from the CVM Research Program for which Merck desires to conduct research and development through designation as a Research Program Development Candidate (the "**CVM Research Program Tail Compound**," and the Collaboration Target(s) that are Modulated by such Collaboration Compounds, "**CVM Research Program Tail Targets**") over the applicable Tail Period. Merck shall have the right to require NGM to conduct such additional research and development of such Ophthalmology Research Program Tail Compounds/Targets, subject to the limits set forth in Section 4.4.3, or to conduct such additional research and development of such Tail Compounds and Tail Targets on its own pursuant to Section 4.4.3(a)(ii). Merck shall not have any right to require NGM to conduct additional research and development of such CVM Research Program Tail Compounds/Targets, but Merck may conduct such additional research and development of such Tail Compounds and Tail Targets on its own pursuant to Section 4.4.3(b).

(ii) With respect to the [***] Research Program, Merck shall have [***] from receipt of the [***] Data Package to notify NGM that Merck has decided (in its sole discretion) to assume responsibility for all research and development activities with respect to all Anti-[***] Collaboration Compounds, in which case (a) the Anti-[***] Collaboration Compounds shall be deemed to be "[***] **Research Program Tail Compounds**", (b) [***] shall be deemed to be a "[***] **Research Program Tail Target**," (c) Merck shall be

deemed to have exercised its right pursuant to this Section 4.4.1(a)(ii) for a Tail Period for [***], and (d) the provisions of Section 4.1.14 shall apply.

(b) For clarity, if Merck does not exercise any of its rights pursuant to Section 4.4.1(a), then there will not be any Tail Period.

(c) Unless Merck earlier terminates a Tail Period in accordance with Section 4.4.2 (in which case, subject to the terms of Section 4.4.2, the applicable Research Program Tail Period and the applicable Tail Year shall end upon the effective date of such termination and there shall not be any new Tail Years after such effective date), a Tail Period shall consist of, and shall expire at the end of, the following four years (each a "**Tail Year**"): (i) Tail Year 1 shall begin on April 1 of the Calendar Year in which the applicable Research Program Term ends (such Calendar Year, the "**End Year**") and shall end on December 31 of the End Year, (ii) Tail Year 2 shall begin on January 1 of the Calendar Year immediately following the End Year and end on December 31 of the same Calendar Year, (iii) Tail Year 3 shall begin on January 1 of the Calendar Year that is the second Calendar Year after the End Year and end on December 31 of the same Calendar Year, (iv) Tail Year 4 shall begin on January 1 of the Calendar Year that is the third Calendar Year after the End Year and end on March 31 of the same Calendar Year, and (v) solely in the event that (A) with respect to the Ophthalmology Research Program Tail Period, (1) if NGM is performing the Ophthalmology Research Program Tail Period, there is an ongoing POC Trial for an Ophthalmology Research Program Tail Compound at the end of Tail Year 4 and the Ophthalmology Research Program Tail Period is still ongoing, the final Tail Year(s) shall begin on January 1 of the Calendar Year that is the fourth Calendar Year after the End Year and end on the completion of such POC Trial and (2) if Merck is performing the Ophthalmology Research Program Tail Period, such Tail Period will extend for as long as Merck is using Commercially Reasonable Efforts in accordance with Section 4.4.3(a)(ii), and (B) with respect to the [***] Research Program Tail Period and CVM Research Program Tail Period, if Merck determines, consistent with Merck's standards for comparable compounds, there is additional work to be completed before a Tail Compound in such Research Program can be nominated as a Research Program Development Candidate so long as Merck is using Commercially Reasonable Efforts in accordance with Section 4.4.3(b)(iii) or Section 4.4.3(c)(iii), as applicable, the applicable Tail Period shall extend through such nomination (or Merck's reasonable determination,

consistent with Merck's standards for comparable compounds, that no Tail Compound in such Research Program can be nominated as a Research Program Development Candidate, in which case all of the Tail Compounds in such Research Program shall become Non-Qualifying Compounds and the Tail Targets in such Research Program shall become Non-Qualifying Targets).

4.4.2 *Tail Period Termination*.

(a) Merck may terminate a Tail Period upon [***] prior written notice to NGM; provided that in the event there is an ongoing POC Trial for an Ophthalmology Research Program Tail Compound at the time of such termination and such POC Trial cannot be ethically terminated or wound down upon such termination, the termination of such Ophthalmology Research Program Tail Period shall not be effective until the completion of such POC Trial (or earlier ethical termination or winding down thereof); provided, further, that, for clarity, upon completion of the POC Trial, the Merck Option would remain in effect and be exercisable as set forth in ARTICLE 5.

(b) Effects of Termination of Ophthalmology Research Program Tail Period.

(i) Following the termination of the Ophthalmology Research Program Tail Period, (1) NGM shall be responsible, at Merck's expense, upon Merck's election in writing, for transitioning any Clinical Studies or development activities then-being conducted on any Ophthalmology Research Program Tail Compounds to Merck or its designee, in which event the terms and conditions (including each Party's rights and obligations) of Sections 13.6.2(d) through (i), inclusive, shall apply to all such Ophthalmology Research Program Tail Compounds, *mutatis mutandis*, subject only to transfers and the like being provided by NGM to Merck (and not by Merck to NGM), and the provisions of Section 4.4.2(b)(iii) shall apply, or, (2) subject to the first proviso in Section 4.4.2(a), where Merck does not so elect to have transitioned to it any such Clinical Studies, including any such POC Trials, NGM shall be responsible for an orderly wind-down, in accordance with accepted pharmaceutical industry norms and ethical practices, of any such Clinical Studies or continuing any such Clinical Studies, at its own expense, and the applicable Collaboration Compounds shall

become Non-Qualifying Compounds and the applicable Collaboration Target shall become a Non-Qualifying Target.

(ii) In addition, following the termination of the Ophthalmology Research Program Tail Period, to the extent then-ongoing, all research activities that are not Clinical Studies under such Tail Period shall terminate, effective upon such effective date of termination, and in any event Merck shall have no obligation to pay for any External Costs or such work performed by the NGM FTEs after the effective date of such termination including the Research Funding after such date with respect thereto, and the licenses and rights granted by Merck to NGM in Section 4.1.9(a) will terminate and such licenses and rights shall revert to Merck and NGM and its Affiliates and sublicensees shall have no further rights to use any such Merck IP as contemplated by Section 4.1.9(a), except to the extent needed to conduct the activities set forth in Section 4.4.2(b)(i).

(iii) Where Merck assumes the conduct of such Clinical Studies under Section 4.4.2(b)(i) but terminates Development of the applicable Collaboration Compounds prior to completion of the first POC Trial, such Collaboration Compounds shall become Non-Qualifying Compounds and, provided that no other Collaboration Compound that Modulates the applicable Collaboration Target is being developed as an Ophthalmology Research Program Tail Compound, the applicable Collaboration Target shall become a Non-Qualifying Target. Where Merck assumes the conduct of such Clinical Studies and completes a POC Trial, upon completion of the first POC Trial with respect to any Ophthalmology Research Program Tail Compound, the Merck Option would remain in effect and be exercisable as set forth in ARTICLE 5, as though NGM had conducted such POC Trial, except that no Data Package shall be due from NGM with respect to such POC Trial, and Merck shall be required to exercise the Merck Option in the same timeframe as provided in Section 5.3.1, with such [***] period commencing

once Merck has available to it the same information as would have been contained in the Data Package for such POC Compound.

(c) Effects of Termination of CVM and [***] Research Program Tail Periods.

(i) Effective upon the effective date of termination of the CVM Research Program Tail Period or the [***] Research Program Tail Period, as applicable, to the extent then-ongoing, all research and Development activities in the applicable Tail Period shall terminate, and the licenses and rights granted by NGM to Merck in Section 4.4.3(d) with respect to the applicable Tail Period will terminate and such licenses and rights shall revert to NGM and Merck and its Affiliates and sublicensees shall have no further rights under the license contemplated by Section 4.4.3(d) for the applicable Tail Period, except to the extent needed to conduct the transition activities set forth in Section 4.4.2(c)(ii).

(ii) Following the termination of the CVM Research Program Tail Period or the [***] Research Program Tail Period, as applicable, (A) Merck shall be responsible, at NGM's expense, upon NGM's election in writing, for transitioning any development activities then-being conducted on any applicable Tail Compounds to NGM or its designee, in accordance with an agreed reasonable transition plan with respect to any such Tail Compounds/Targets (which plan will account for the Merck staffing at the relevant time(s)) or (B) where NGM does not so elect to have transitioned to it any such development activities, Merck shall be responsible for an orderly wind-down, in accordance with accepted pharmaceutical industry norms and ethical practices, of any such development activities at its own expense, and the applicable Tail Compounds shall become Non-Qualifying Compounds and the applicable Tail Targets shall become Non-Qualifying Targets.

4.4.3 *Conduct of Research and Development During Tail Period; Merck Retained Options*.

(a) Ophthalmology Research Program Tail Period.

(i) NGM shall conduct the additional research and development of Ophthalmology Research Program Tail Compounds/Targets as requested by Merck pursuant to Section 4.4.1 and in a manner

consistent with this ARTICLE 4 and subject to Section 4.1.5(g); provided, however, that Merck shall fund all such activity in the manner consistent with the funding of FTEs and out of pocket costs (including External Costs, to the extent applicable) set forth in Section 4.2. If NGM's performance of the Ophthalmology Research Program Tail Period will cause NGM to exceed the applicable Research Funding Cap, the Parties will discuss in good faith increasing the applicable Research Funding Cap pursuant to Section 4.2.6; provided that if following such discussions, the Parties are unable to reach a solution, then Merck shall assume responsibility for such Ophthalmology Research Program Tail Compounds pursuant to Section 4.4.3(a)(ii).

(ii) Notwithstanding Section 4.4.3(a)(i), if, during any Tail Year or after the Tail Period, Merck desires to assume responsibility for research and development activities with respect to one or more Ophthalmology Research Program Tail Compounds/Targets that have yet to reach POC, Merck shall have the right to internally research and develop such Tail Compounds/Targets by providing NGM with written notice of such intent at the time of Merck's request pursuant to Section 4.4.1 or at any time during the applicable Tail Period. Promptly following Merck's provision of such notice, the Parties shall agree regarding a reasonable transition plan with respect to any such Tail Compounds/Targets (which plan will account for the NGM staffing at the relevant time(s)), and NGM shall be responsible, at Merck's expense, for transitioning any Clinical Studies or other research and development activities then-being conducted on such Tail Compounds/Targets to Merck or its designee in accordance with such transition plan. Merck shall use Commercially Reasonable Efforts to complete a POC Trial for [***] for each Ophthalmology Research Program Tail Target for which it assumes responsibility pursuant to this Section 4.4.3(a)(ii).

(iii) Any Ophthalmology Research Program Tail Compound that undergoes a POC Trial either during the Ophthalmology Research Program Tail Period or thereafter arising from Merck's continued internal research and development of that Ophthalmology Research Program Tail Compound would be subject to a Merck Option to obtain an exclusive license to such POC Compound and its Related Compounds, all in accordance with the process outlined

in ARTICLE 5, as though NGM had conducted such POC Trial, except that no Data Package shall be due from NGM with respect to such POC Trial, and Merck shall be required to exercise the Merck Option in the same timeframe as provided in Section 5.3.1, with such [***] period commencing once Merck has available to it the same information as would have been contained in the Data Package for such POC Compound.

(iv) When Merck determines that sufficient information is available for Merck to determine, in a manner consistent with Merck's standards for comparable compounds, whether (A) an Ophthalmology Research Program Tail Compound that Modulates an Ophthalmology Research Program Tail Target is suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies, or (B) (x) no Ophthalmology Research Program Tail Compound that Modulates such Ophthalmology Research Program Tail Target is suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies or (y) all of the Ophthalmology Research Program Tail Compounds that Modulate such Ophthalmology Research Program Tail Target that Merck has tested for such suitability are not suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies and Merck does not have any good faith plans to test any additional such Ophthalmology Research Program Tail Compounds for such suitability, then in each case ((A) and (B)), Merck shall notify NGM in writing of its determination within [***], and (1) in the event of clause (A), such Ophthalmology Research Program Tail Compound shall be deemed an Ophthalmology Research Program Development Candidate as of the date of such notice, and (2) in the event of clause (B), such Ophthalmology Research Program Tail Compound, together with its Related Compounds, shall be deemed to be Non-Qualified Compounds and such Ophthalmology Research Program Tail Target shall become a Non-Qualifying Target.

(b) CVM Research Program Tail Period.

(i) Merck shall assume responsibility, as of the start of the CVM Research Program Tail Period, for all research and development activities with respect to all CVM Research Program Tail Compounds/Targets that have not been designated as Research

Program Development Candidates pursuant to Section 4.1.13. As of the start of the CVM Research Program Tail Period, Merck shall have no obligation to pay for any External Costs or any work performed by the NGM FTEs with respect to the CVM Research Program, and the licenses and rights granted by Merck to NGM in Section 4.1.9(a) with respect to the CVM Research Program will terminate and such licenses and rights shall revert to Merck and NGM and its Affiliates and sublicensees shall have no further rights to use any such Merck IP as contemplated by Section 4.1.9(a) for the CVM Research Program, except to the extent needed to conduct the activities set forth below in Section 4.4.3(b)(ii).

(ii) The Parties shall agree regarding a reasonable transition plan with respect to any such Tail Compounds/Targets (which plan will account for the NGM staffing at the relevant time(s) and be designed to transition all responsibilities to Merck by the start of the Tail Period or as soon as possible thereafter), and NGM shall be responsible, at Merck's expense, for transitioning any such research or development activities then-being conducted on any such Tail Compounds/Targets to Merck or its designee in accordance with such transition plan.

(iii) Merck shall use Commercially Reasonable Efforts to designate [***] for each CVM Research Program Tail Target as a Research Program Development Candidate.

(iv) When Merck determines that sufficient information is available for Merck to determine, in a manner consistent with Merck's standards for comparable compounds, whether (A) a CVM Research Program Tail Compound that Modulates a CVM Research Program Tail Target is suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies, or (B) (x) no CVM Research Program Tail Compound that Modulates such CVM Research Program Tail Target is suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies or (y) all of the CVM Research Program Tail Compounds that Modulate such CVM Research Program Tail Target that Merck has tested for such suitability are not suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies and Merck does not have any good faith plans to

test any additional such CVM Research Program Tail Compounds for such suitability, then in each case ((A) and (B)), Merck shall notify NGM in writing of its determination within [***], and (1) in the event of clause (A), such CVM Research Program Tail Compound shall be deemed a CVM Research Program Development Candidate as of the date of such notice, and Merck shall have [***] in which to exercise (in its sole discretion) the CVM Merck Option for such CVM Research Program Development Candidate and its Related Compounds in accordance with Section 5.3.1, and (2) in the event of clause (B), such CVM Research Program Tail Compound, together with its Related Compounds, shall be deemed to be Non-Qualified Compounds and such CVM Research Program Tail Target shall become a Non-Qualifying Target.

(c) [***] Research Program Tail Period.

(i) Merck shall assume responsibility, as of the start of the [***] Research Program Tail Period, for all research and development activities with respect to all [***] Research Program Tail Compounds. As of the start of the [***] Research Program Tail Period, Merck shall have no obligation to pay for any External Costs or any work performed by the NGM FTEs with respect to the [***] Research Program, and the licenses and rights granted by Merck to NGM in Section 4.1.9(a) with respect to the [***] Research Program will terminate with respect to the [***] Research Program and such licenses and rights shall revert to Merck and NGM and its Affiliates and sublicensees shall have no further rights to use any such Merck IP as contemplated by Section 4.1.9(a) for the [***] Research Program, except to the extent needed to conduct the activities set forth below in Section 4.4.3(c)(ii).

(ii) The Parties shall agree regarding a reasonable transition plan with respect to any such Tail Compounds/Targets (which plan will account for the NGM staffing at the relevant time(s) and be designed to transition all responsibilities to Merck by the start of the Tail Period or as soon as possible thereafter), and NGM shall be responsible, at Merck's expense, for transitioning any such research or development activities then-being conducted on any

such Tail Compounds/Targets to Merck or its designee in accordance with such transition plan.

(iii) Merck shall use Commercially Reasonable Efforts to designate [***] as a [***] Research Program Development Candidate.

(iv) When Merck determines that sufficient information is available for Merck to determine, in a manner consistent with Merck's standards for comparable compounds, whether (A) a [***] Research Program Tail Compound that Modulates a [***] Research Program Tail Target is suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies, or (B) (x) no [***] Research Program Tail Compound that Modulates such [***] Research Program Tail Target is suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies or (y) all of the [***] Research Program Tail Compounds that Modulate such [***] Research Program Tail Target that Merck has tested for such suitability are not suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies and Merck does not have any good faith plans to test any additional such [***] Research Program Tail Compounds for such suitability, then in each case ((A) and (B)), Merck shall notify NGM in writing of its determination within [***], and (1) in the event of clause (A), such [***] Research Program Tail Compound shall be deemed a [***] Research Program Development Candidate as of the date of such notice, and Merck shall have [***] in which to exercise (in its sole discretion) the [***] Merck Option for such [***] Research Program Development Candidate and its Related Compounds in accordance with Section 5.3.1, and (2) in the event of clause (B), such [***] Research Program Tail Compound, together with its Related Compounds, shall be deemed to be Non-Qualified Compounds and such [***] Research Program Tail Target shall become a Non-Qualifying Target.

(d) Tail Period License. In furtherance of the foregoing, NGM hereby grants to Merck an exclusive (even as to NGM, except to the extent required for NGM to perform its obligations under the Collaboration) royalty-free, sublicenseable, license, under any and all Patent Rights and Know-How that are Controlled by NGM or any of its Affiliates (subject to Section 14.3) to research, develop (through, with respect to

Ophthalmology Research Program Tail Compounds/Targets, completion of a POC Trial and, with respect to CVM Research Program Tail Compounds/Targets and [***] Research Program Tail Compounds/Targets, nomination to be a Research Program Development Candidate), make, have made and use those Ophthalmology Research Program Tail Compounds/Targets that Merck chooses to transfer the further research and development thereof to Merck in accordance with Section 4.4.3(a)(ii), all CVM Research Program Tail Compounds/Targets and all [***] Research Program Tail Compounds/Targets. For clarity, with respect to Ophthalmology Research Program Tail Compounds/Targets, no post-POC Trial development rights, and, with respect to CVM Research Program Tail Compounds/Targets and [***] Research Program Tail Compounds/Targets, no [***] or, in either case, any commercial rights would be granted to Merck with respect to any Tail Compounds or their associated Collaboration Targets (even if Merck is internally researching and developing such Tail Compounds/Targets) unless and until Merck exercises (in Merck's sole discretion) the applicable Merck Option upon review of the data resulting therefrom.

(e) Merck Performance. Merck has the ability, in its sole discretion, to discontinue, delay or de-prioritize the research or development of any Tail Compounds/Targets it has elected to pursue under this Section 4.4. Upon written notice of such discontinuance (that is, stopped with no intention or plan to re-start) of all activities with respect to any Tail Compound or Tail Target to NGM or upon the end of a [***], such Tail Compounds/Targets would thereafter be deemed to be Non-Qualifying Compounds and Non-Qualifying Targets, as applicable, and NGM would have such rights thereto as are set forth in Section 4.5.

4.5 Non-Qualifying Compounds/Targets.

4.5.1 Effective as of the A&R Effective Date, all Selected Oncology Collaboration Compounds (including, for clarity, all Related Compounds) and all Other Collaboration Compounds (including, for clarity, all Related Compounds) shall be deemed Non-Qualifying Compounds and all Selected Oncology Collaboration Targets and Other Collaboration Targets shall be deemed Non-Qualifying Targets. The Non-Qualifying Targets as of the A&R Effective Date are set forth on Schedule 4.5.1. All Collaboration Compounds set forth on Schedule 4.5.1 are

Non-Qualifying Compounds, although such schedule is not a complete list of all Non-Qualifying Compounds.

4.5.2 Upon the expiration of the CVM Research Program Term, all CVM Collaboration Compounds that are not, as of such time, (a) Optioned Compounds (including, for clarity, all Related Compounds), or (b) as applicable, selected by Merck as CVM Research Program Tail Compounds under Section 4.4.1, shall be deemed Non-Qualifying Compounds and all CVM Collaboration Targets (other than Optioned Targets and CVM Research Program Tail Targets) not Modulated by an Optioned Compound or CVM Research Program Tail Compound shall be deemed Non-Qualifying Targets (which Non-Qualifying Targets include Optioned Targets and CVM Research Program Tail Targets to the extent Modulated by a different Modulation Category from the Modulation Category of the applicable Optioned Compound or CVM Research Program Tail Compound).

4.5.3 Upon the earliest of (a) expiration of the Option Period for the first Ophthalmology Merck Option, (b) Merck's exercise of the first Ophthalmology Merck Option or (c) expiration of the Ophthalmology Research Program Term, all Designated Ophthalmology Collaboration Compounds that are not, as of such time, (i) Optioned Compounds (including, for clarity, all Related Compounds), or (ii) as applicable, selected by Merck as Ophthalmology Research Program Tail Compounds (including Ophthalmology Research Program Development Candidates so selected) under Section 4.4.1, shall be deemed Non-Qualifying Compounds, and all Designated Ophthalmology Collaboration Targets (other than Optioned Targets or Ophthalmology Research Program Tail Targets) not Modulated by an Optioned Compound or Ophthalmology Research Program Tail Compound shall be deemed Non-Qualifying Targets (which Non-Qualifying Targets include Optioned Targets and Ophthalmology Research Program Tail Targets to the extent Modulated by a different Modulation Category from the Modulation Category of the applicable Optioned Compound or Ophthalmology Research Program Tail Compound). For clarity, if Merck does not exercise the first Ophthalmology Merck Option for a POC Compound, then effective upon the expiration of such Option Period, such POC Compound (and its Related Compounds) shall be deemed Refused Candidates and NGM shall have the rights and obligations set forth in Section 5.3.2 with respect thereto.

4.5.4 Upon expiration of a Tail Period, as applicable, any applicable Tail Compounds/Targets that (i) have not been optioned by Merck in accordance with ARTICLE 5 (including such Tail Compounds as would have been deemed to have been optioned by Merck by way of qualifying as a Related Compound to an Optioned Compound) or (ii) Merck is not using Commercially Reasonable Efforts to

develop (other than through NGM) shall be deemed to be Non-Qualifying Compounds and Non-Qualifying Targets. Finally, if at any time after the expiration of a Tail Period, Merck stops using Commercially Reasonable Efforts to research and Develop any Tail Compound, such Tail Compound/Target shall become a Non-Qualifying Compound and Non-Qualifying Target.

4.5.5 If Merck does not assume control of research and Development of the [***] Research Program after expiration of the [***] Research Program Term, then upon such expiration, all Anti-[***] Collaboration Compounds shall be deemed Non-Qualifying Compounds and [***] shall be deemed a Non-Qualifying Target.

4.5.6 After the A&R Effective Date, upon each event in this Section 4.5.2 – 4.5.5, inclusive, pursuant to which a compound or target could become a Non-Qualifying Compound or Non-Qualifying Target, as the case may be, the Parties agree that such determination shall be documented in writing no later than [***] Business Days after the applicable event.

4.5.7 Effective as of the date each Collaboration Compound and each Related Compound is deemed a Non-Qualifying Compound and the date each Collaboration Target is deemed a Non-Qualifying Target, Merck's rights under this Agreement with respect to such Non-Qualifying Compounds and Non-Qualifying Targets, including all right to develop and commercialize such Non-Qualifying Compounds and Non-Qualifying Targets, either itself or with or through a Third Party, shall terminate and NGM shall have the right to develop and commercialize, independently or with or through Affiliates or Third Parties, such Non-Qualifying Compounds and Non-Qualifying Targets in its sole discretion without further obligation to Merck, except for a royalty due to Merck as set forth in Section 9.7 (subject to Section 4.9.3) and subject to the rights expressly granted to Merck pursuant to Section 4.7 and Section 5.8.

4.5.8 At any time after the A&R Effective Date when a Collaboration Compound is deemed a Non-Qualifying Compound, if Merck had assumed responsibility for the research and development of such Collaboration Compound, then the Parties shall agree regarding a reasonable transition plan with respect to any such Collaboration Compound (which plan will account for the Merck staffing at the relevant time(s)), and Merck shall be responsible, at NGM's expense, for transitioning any Clinical Studies or other research and development activities

then-being conducted on such Collaboration Compounds to NGM or its designee in accordance with such transition plan.

4.6 Exclusivity During New Research Program Term and Tail Periods. Subject to Section 14.4.1,

4.6.1 *Research Program Term*. During the New Research Program Term, NGM and its Affiliates shall work exclusively with Merck on the research and development of antibodies, peptides, large molecule and small molecule compounds that Modulate Collaboration Targets in a manner that satisfies the applicable Physiologically Relevant Threshold as follows: (a) during the CVM Research Program, NGM and its Affiliates shall work exclusively with Merck on such research and development with respect to CVM Collaboration Targets, (b) during the Ophthalmology Research Program, NGM and its Affiliates shall work exclusively with Merck on such research and development with respect to Designated Ophthalmology Collaboration Targets, and (c) during the [***] Research Program, NGM and its Affiliates shall work exclusively with Merck on such research and development with respect to the Collaboration Target [***], in each case, (a)-(c), except, on a Collaboration Target-by-Collaboration Target basis, for those Collaboration Targets that are deemed to be Non-Qualifying Targets [***], and except, [***], and NGM and its Affiliates shall not during the New Research Program Term conduct any research, development or commercialization, whether independently or with or through an Affiliate or Third Party (including through granting a license or otherwise enabling any such activities), that is directed to any such antibody, peptide or other large molecule, or small molecule, that Modulates: (i) any CVM Collaboration Target during the CVM Research Program Term, (ii) any Designated Ophthalmology Collaboration Target during the Ophthalmology Research Program Term, or (iii) [***] during the [***] Research Program Term (in each case, (i)-(iii), except for [***], except pursuant to this Agreement.

4.6.2 *Tail Period*. During the Ophthalmology Research Program Tail Period, the CVM Research Program Tail Period and the [***] Research Program Tail Period, if any, NGM and its Affiliates will work exclusively with Merck on the Tail Compounds/Targets and on the research and development of antibodies, peptides, large molecule and small molecule compounds that Modulate Tail Targets, in a manner that satisfies the applicable Physiologically Relevant Threshold as follows: (a) during the Ophthalmology Research Program Tail Period, NGM and its Affiliates will work exclusively with Merck on such research and development with respect to Ophthalmology Research Program Tail Compounds/Targets, (b) during the CVM Research Program Tail Period, NGM and its Affiliates will work

exclusively with Merck on such research and development with respect to CVM Research Program Tail Compounds/Targets, and (c) during the [***] Research Program Tail Period, NGM and its Affiliates will work exclusively with Merck on such research and development with respect to [***] Research Program Tail Compounds/Targets, in each case, (a)-(c), except for (1) [***] and (2) [***]. Except with respect to items (1) and (2) above, NGM and its Affiliates shall not conduct any research, development or commercialization, whether independently or with or through an Affiliate or Third Party (including through granting a license or otherwise enabling any such activities) during the applicable Ophthalmology Research Program Tail Period, CVM Research Program Tail Period or [***] Research Program Tail Period, if any, that is directed to any Tail Compounds/Targets or any such antibody, peptide or other large molecule, or small molecule compounds that Modulate Tail Targets, except pursuant to this Agreement.

4.7 Heart Failure Exclusivity.

4.7.1 Subject to Sections 4.7.2 and 4.7.3, during the CVM Research Program Term, NGM shall not, directly or indirectly, (a) research or develop any antibody, peptide, large molecule or small molecule compound intended for the purpose of treating Heart Failure or (b) commercialize any product that is approved for the treatment of Heart Failure, in each case ((a) and (b)), except pursuant to this Agreement; provided, however, that the foregoing shall not apply to any CVM Collaboration Targets that are removed by Merck pursuant to Section 4.1.11. If Merck does not provide the notice contemplated by Section 4.1.10 within the applicable [***] period with respect to a human DNA sequence, RNA sequence, protein or peptide that is recommended by NGM to become an Additional CVM Collaboration Target, then NGM shall have the right to work on it for indications other than Heart Failure during the remainder of the CVM Research Program Term and for all indications thereafter.

4.7.2 In the event that during the CVM Research Program Term a Third Party becomes an Affiliate of NGM, whether or not as a result of a Change of Control of NGM, and as of the closing date of such transaction, such Third Party is engaged in (a) [***] or (b) [***] ((a) and (b) collectively, a "**Competing Program**"), then, within [***], subject to Section 4.7.3 only with respect to Changes of Control of NGM, NGM and such Affiliate shall either: (i) [***], or (ii) [***]. Prior to such [***], such Affiliate may [***]; provided that NGM and such Affiliate [***].

4.7.3 In the event that during the CVM Research Program Term a Third Party becomes an Affiliate of NGM as a result of a Change of Control of NGM, and as of [***],

such Third Party is [***], then, without limiting Section 4.7.2, such Affiliate [***]; provided that NGM and such Affiliate (a) [***]; (b) [***] and (c) [***] (clauses (a), (b) and (c), "**Firewall Procedures**").

4.7.4 In the event of a transaction described in Section 4.7.2 or Section 4.7.3, NGM shall notify Merck with [***] of the closing of such transaction of the existence of an acquired Competing Program and shall notify Merck within [***] of such transaction whether it intends to divest or discontinue the Competing Program in accordance with Section 4.7.2 or, in the case of a Change of Control, comply with Section 4.7.3 with respect to such Competing Program.

4.8 Exchange of Information. Upon the Original Effective Date, and on an ongoing basis during the Research Program Term and Tail Period, if any, each Party shall promptly disclose to the other any Collaboration Inventions, and NGM shall disclose to Merck in English and in writing or in an electronic format all NGM IP not previously disclosed, and Merck shall disclose to NGM in English and in writing or in an electronic format all Merck Know-How used in the Research Program and not previously disclosed.

4.9 Existing Collaboration Agreements; Partnered Compounds and Targets.

4.9.1 Except as set forth in Section 4.2 with respect to funding of research and development of Non-Qualifying Compounds and Non-Qualifying Targets during New Research Program Year 1, NGM shall not use any Research Funding obtained from Merck to fund any internal or external costs associated with its activities under any of the Existing Collaboration Agreements or any other non-Collaboration activities.

4.9.2 NGM shall not amend any Existing Collaboration Agreement, or grant its consent (where consent may be withheld by NGM) under any Existing Collaboration Agreement, in each case, in a manner that: (i) [***]; and/or (ii) [***]; provided, however, that nothing in the foregoing shall require that NGM breach the terms of any of such Existing Collaboration Agreements.

4.9.3 If during the Research Program Term the rights of the Third Party Partner cease to exist in their entirety under the terms of the Existing Collaboration Agreement with respect to a Partnered Compound (as a result, for example, of the expiration or termination of such agreement, or any license or option thereunder), and if as of such time [***] such Partnered Compound, then such Partnered Compound shall [***] and such compound shall [***] and [***]; provided, however, that notwithstanding [***]: (a) if such compound subsequently [***], then the [***]

on account of the [***] shall not [***]; and (b) if such compound subsequently [***], [***] on account of the [***].

4.9.4 If during the Research Program Term the rights of the Third Party Partner cease to exist in their entirety under the terms of the Existing Collaboration Agreement with respect to Partnered Target (as a result, for example, of the expiration or termination of such agreement, or any license or option thereunder) then the applicable DNA sequence, RNA sequence, protein or peptide shall no longer thereafter be deemed a "Partnered Target" and it shall instead be made available for possible designation and investigation as a Collaboration Target under the Research Program. NGM represents and warrants that the targets set forth on Schedule 1.51(b) are not Partnered Targets.

4.9.5 In no event will the subject matter that is "Within 3rd Party Rights" include any antibody, peptide or other large molecule or small molecule, DNA sequence or RNA sequence that is identified, discovered or reduced to practice, or otherwise researched or developed in the course of performing the Collaboration.

ARTICLE 5
MERCK OPTION RIGHTS

5.1 Data Package.

5.1.1 *Ophthalmology Research Program*. Once a Designated Ophthalmology Collaboration Compound completes a POC Trial (and thus becomes a POC Compound) conducted by or on behalf of NGM, NGM shall, within [***] of such completion, provide a mutually agreed upon data package to Merck, which data package will in any event include: (i) [***]; (ii) [***]; (iii) [***]; (iv) [***]; (v) [***]; (vi) [***]; (vii) [***], all information described in subsections (i) through (vi) to the extent available and relating to [***], in each case of (i) through (vii), inclusive, to the fullest extent reasonably possible so as to assist and enable Merck to make its decision on whether to exercise the Merck Option with respect thereto; and (viii) an executed statement affirming the representations and warranties in Sections 11.1 and 11.2 remain accurate or otherwise noting any disclosures necessary to make such representations and warranties accurate, which disclosures shall not be considered, of themselves, to be a breach of this Agreement (the "**POC Data Package**"). NGM shall, during the Option Period for such POC Compound and, as requested by Merck, meet with Merck to discuss such POC Data Package and any questions of Merck with respect thereto, including providing Merck with such additional information to assist with interpretation of the POC Data Package as Merck may reasonably request.

5.1.2 *CVM Research Program*. When NGM is performing the CVM Research Program and it determines in its reasonable discretion that sufficient information is available for Merck to consider a CVM Collaboration Compound as suitable for the initiation of pre-clinical, IND-enabling studies and, if successful, Clinical Studies in accordance with Section 4.1.13, then NGM shall promptly provide a mutually agreed upon data package to Merck, which data package will in any event include: (i) [***]; (ii) [***]; (iii) [***]; (iv) [***]; (v) [***], in each case of (i) through (v), inclusive, to the fullest extent reasonably possible so as to assist and enable Merck to make its decision on whether to exercise the Merck Option with respect thereto; and (vi) an executed statement affirming the representations and warranties in Sections 11.1 and 11.2 remain accurate or otherwise noting any disclosures necessary to make such representations and warranties accurate, which disclosures shall not be considered, of themselves, to be a breach of this Agreement (the "**CVM Research Program Development Candidate Data Package**"). NGM shall, during the Option Period for such CVM Collaboration Compound and, as requested by Merck, meet with Merck to discuss such CVM Research Program Development Candidate Data Package and any questions of Merck with respect thereto, including providing Merck with such additional information to assist with interpretation of the CVM Research Program Development Candidate Data Package as Merck may reasonably request.

5.2 Grant of Merck Options.

5.2.1 *Grant of Rights.*

(a) Ophthalmology Merck Option. NGM hereby grants to Merck the exclusive right, exercisable at Merck's sole discretion, to elect to obtain the exclusive worldwide license set forth in Section 5.4 with respect to each POC Compound that is a Designated Ophthalmology Collaboration Compound and has been the subject of completed a POC Trial, and its Related Compounds (which are, collectively, a set of Option Subject Compounds), under the terms and conditions set forth in this Agreement (such right to elect, a "**Ophthalmology Merck Option**" as to such set of Option Subject Compounds). Such POC Compound together with its associated Related Compounds is collectively referred to as one set of Option Subject Compounds, all of which are included within and subject to a single Ophthalmology Merck Option, which option may be exercised by Merck (as provided in Section 5.3) at one time as to all such compounds in the set. For clarity, the exercise by Merck of an Ophthalmology Merck Option shall be specific to that particular set of Option Subject Compounds only and results in the grant to Merck of the

exclusive, worldwide license, under Section 5.4.1, to research (as described in Section 5.4.1), Develop, manufacture, use and Commercialize any Product that incorporates any of such Option Subject Compounds. Any additional Collaboration Compounds that are developed subsequently (or in tandem) by NGM against the same Designated Ophthalmology Collaboration Target (other than the associated Related Compounds to a given POC Compound), but that belong to a different Modulation Category than such Optioned Compounds, and which progress to become a POC Compound that has been the subject of a completed POC Trial, shall be the subject of a separate and distinct Ophthalmology Merck Option, which is then subject to separate exercise by Merck (as provided in Section 5.3).

(b) Alternative Ophthalmology Merck Option. Effective upon the first completion during the Ophthalmology Research Program Term of a POC Trial for an Anti-C3 Collaboration Compound (or earlier if Merck exercises its Merck Option for such Anti-C3 Collaboration Compound prior to completion of such POC Trial), NGM hereby grants to Merck the exclusive right, exercisable at Merck's sole discretion, to elect to obtain the exclusive worldwide license set forth in Section 5.4 with respect to all Anti-[***] Collaboration Compounds and all Anti-[***] Collaboration Compounds and their Related Compounds (which are, collectively, a set of Option Subject Compounds), under the terms and conditions set forth in this Agreement (such right to elect, the "**Alternative Ophthalmology Merck Option**"). All such Designated Ophthalmology Collaboration Compounds with their associated Related Compounds are collectively referred to as one set of Option Subject Compounds, all of which are included within and subject to the Alternative Ophthalmology Merck Option, which option may be exercised by Merck (as provided in Section 5.3) at one time as to all such compounds in the set. The Alternative Ophthalmology Merck Option can only be exercised by Merck together with its exercise, during the Standard Ophthalmology Research Program Term, of the first Ophthalmology Merck Option for an Anti-C3 Collaboration Compound.

(c) CVM Merck Option. On a CVM Research Program Development Candidate-by-CVM Research Program Development Candidate basis, NGM hereby grants to Merck the exclusive right, exercisable at Merck's sole discretion, to elect to obtain the exclusive worldwide license set forth in Section 5.4 with respect to each CVM Research Program Development Candidate and its Related Compounds (which are, collectively, a set of

Option Subject Compounds), under the terms and conditions set forth in this Agreement (each such right to elect, a "**CVM Merck Option**" as to the applicable set of Option Subject Compounds). Each such CVM Research Program Development Candidate together with its associated Related Compounds are collectively referred to as one set of Option Subject Compounds, all of which are included within and subject to a single CVM Merck Option, which option may be exercised by Merck (as provided in Section 5.3) at one time as to all such compounds in the set.

(d) [***] Merck Option. NGM hereby grants to Merck the exclusive right, exercisable at Merck's sole discretion during the applicable Option Period set forth in Section 5.3.1, to elect to obtain the exclusive worldwide license set forth in Section 5.4 with respect to the first Anti-[***] Collaboration Compound to become a [***] Research Program Development Candidate and its Related Compounds (which are, collectively, a set of Option Subject Compounds), under the terms and conditions set forth in this Agreement (the "[***] **Merck Option**").

(e) General. For clarity, the exercise by Merck of a Merck Option with respect to a given set of Option Subject Compounds shall be specific to that particular set of Option Subject Compounds only and results in the grant to Merck of the exclusive, worldwide license, under Section 5.4.1, to research (as described in Section 5.4.1), Develop, manufacture, use and Commercialize any Product that incorporates any of such Option Subject Compounds. Any additional CVM Collaboration Compounds that are developed subsequently (or in tandem) by NGM against the same CVM Collaboration Target (other than the associated Related Compounds to a given CVM Research Program Development Candidate), but that belong to a different Modulation Category than such Optioned Compounds (and thus becomes a CVM Research Program Development Candidate), shall be the subject of a separate and distinct Merck Option, which is then subject to separate exercise by Merck (as provided in Section 5.3).

5.2.2 *Pursuit of Related Compounds.* Upon exercise of a Merck Option to a POC Compound, the Anti-[***] Collaboration Compounds and Anti-[***] Collaboration Compounds, a CVM Research Program Development Candidate or [***] Research Program Development Candidate, Merck shall also have the license set forth in Section 5.4.1 to research (as described in Section 5.4.1), Develop, manufacture, use and Commercialize the Related Compounds associated with such POC Compound, Anti-[***] Collaboration Compounds and Anti-[***] Collaboration Compounds, CVM Research Program Development Candidate or

[***] Research Program Development Candidate, as applicable. Following exercise of its Merck Option with respect to a set of Option Subject Compounds, Merck may, in its sole discretion, substitute any one or more of the Related Compounds within such set for the applicable POC Compound, Anti-[***] Collaboration Compounds and Anti-[***] Collaboration Compounds, CVM Research Program Development Candidate or [***] Research Program Development Candidate, as applicable, or where the POC Compound, Anti-[***] Collaboration Compound, Anti-[***] Collaboration Compound CVM Research Program Development Candidate or [***] Research Program Development Candidate, as applicable, is successful as a Product, may in addition, at Merck's sole discretion, Develop, manufacture, use and Commercialize any of the associated Related Compounds, subject to Merck's obligations under this Agreement.

5.2.3 *Exclusivity.* During the Research Program Term and applicable Tail Period, if any, NGM will not grant to any Third Party rights to any NGM (or its Affiliates) intellectual property that (a) are inconsistent with Section 4.7 or (b) are inconsistent with or in way limit or restrict the options granted or the grant of the licenses resulting from the exercise of the Merck Options to Merck hereunder. For the avoidance of doubt, the Parties understand and agree that the Merck Option rights, as described herein, shall be exclusive options over the POC Compound that is the subject of a given Early Development program (including the Ophthalmology Research Program), over the Anti-[***] Collaboration Compounds and Anti-[***] Collaboration Compounds, over any CVM Research Program Development Candidate, and [***] Research Program Development Candidate, and their respective Related Compounds, and unless and until such time (if any) as Merck declines to exercise or permits to lapse its pending or outstanding Merck Option rights with respect to any such POC Compound, Anti-[***] Collaboration Compounds and Anti-[***] Collaboration Compounds, CVM Research Program Development Candidate, or [***] Research Program Development Candidate and their respective Related Compounds, NGM shall not have the right to offer or negotiate with any Third Party with respect to the grant to such Third Party of any right or license or other encumbrance of any kind with respect to the NGM IP or NGM's interest in the Collaboration Technology in or to any of such compounds in the Field in the Territory (including intellectual property rights covering or claiming such compounds) in a manner that would be inconsistent with or would limit or restrict the options granted or the grant of the licenses resulting from the exercise of the Merck Options to Merck hereunder.

5.3 Exercise of Merck Option.

5.3.1 *Option Period, Option Exercise.* Merck may exercise a Merck Option by delivery to NGM of written notice of exercise, not later than (a) for an Ophthalmology Merck Option, subject to Section 4.4.2(b)(iii) and Section 4.4.3(a)(iii) (pursuant to which Merck performs the applicable POC Trial), [***] after receipt of the complete Data Package from NGM with respect to that Option Subject Compound, specifying the POC Compound as to which the Merck Option is being exercised, (b) for an Alternative Ophthalmology Merck Option, [***] after receipt of the complete Data Package from NGM with respect to the first Anti-C3 Collaboration Compound to complete a POC Trial within the Ophthalmology Research Program Term or Ophthalmology Research Program Tail Period or (c) for the CVM Merck Option and [***] Merck Option, [***] after the date that the applicable CVM Collaboration Compound or Anti-[***] Collaboration Compound, as applicable, becomes a Research Program Development Candidate. The [***] period during which the Merck Option must be exercised, as set forth herein, shall be referred to in this Agreement as the "**Option Period**." For clarity, the Option Period for the Alternative Ophthalmology Merck Option shall expire on the earlier of (i) expiration of the first Ophthalmology Merck Option for an Anti-C3 Collaboration Compound and (ii) Merck's exercise of such first Ophthalmology Merck Option. The Parties shall comply with Section 16.18.2 with respect to any Antitrust Approvals that may be necessary in connection with the exercise of a Merck Option; such compliance shall not extend the period for Merck to give notice of its desire to exercise the Merck Option but it may delay the effectiveness of such exercise. Upon exercise of a particular Merck Option, all Option Subject Compounds that are the subject of such Merck Option (*i.e.*, the POC Compound that is the subject of such Ophthalmology Merck Option together with all its associated Related Compounds, the Anti-[***] Collaboration Compounds and Anti-[***] Collaboration Compounds that are the subject of such Alternative Ophthalmology Merck Option, together with all their associated Related Compounds, the CVM Research Program Development Candidate that is the subject of such CVM Merck Option, together with all its associated Related Compounds or the [***] Research Program Development Candidate that is the subject of such [***] Merck Option, together with all its associated Related Compounds, as applicable, in each case, whether identified or discovered before or after such Option exercise) automatically become Optioned Compounds, and, for clarity, any such Optioned Compound and Related Compound shall cease to be a Tail Compound (to the extent applicable). The Parties acknowledge and agree that Merck exercised a Merck Option with respect to the compound referred

to by NGM as NGM313 on November 19, 2018 and as of such date; such compound became an Optioned Compound.

5.3.2 *Refused Candidates.* If Merck does not exercise its Ophthalmology Merck Option, CVM Merck Option or [***] Merck Option with respect to a particular set of Option Subject Compounds within the applicable Option Period, then the Merck Option as to all compounds in such set of Option Subject Compounds shall expire and such compounds shall thereafter be "**Refused Candidates**", and NGM will thereafter be free to develop and commercialize all such Refused Candidates (*i.e.*, the POC Compound that was the subject of such Merck Option and all of its associated Related Compounds, the CVM Research Program Development Candidate that is the subject of such Merck Option and all of its associated Related Compounds, or [***] Research Program Development Candidate that is the subject of such Merck Option and all of its associated Related Compounds), alone or with an Affiliate or Third Party, at its sole expense (as between the Parties), free of any obligation to Merck hereunder (except for royalties under Section 9.7 (subject to Section 4.9.3)). For clarity, if Merck does not exercise the Alternative Ophthalmology Merck Option within the applicable Option Period, then the Anti-[***] Collaboration Compounds and Anti-[***] Collaboration Compounds will not become Refused Candidates but will instead become Non-Qualifying Compounds unless selected by Merck as Ophthalmology Research Program Tail Compounds in accordance with Section 4.5.3.

5.3.3 *Technical Issues and Revival of Merck Option.* Notwithstanding anything to the contrary, if Merck does not exercise its Merck Option with respect to a particular POC Compound due to the fact that, although such POC Compound completed the POC Trial, there existed Technical Issues, then Merck shall inform NGM in writing of such Technical Issues and, thereafter, if during the Research Program Term or applicable Tail Period, if any, NGM elects to pursue (including resulting from discussions at the JEDDC, JLDDC or JEC) and completes another POC Trial with respect to such POC Compound, or completes a POC Trial with respect to a Related Compound to such failed POC Compound, or if such POC Compound or any such Related Compound is deemed to be a Tail Compound, then the Merck Option shall again be in full force and effect with respect to such POC Compound and/or Related Compound (and its Related Compounds), upon delivery of the Data Package, as set forth in Section 5.1. As used herein, "**Technical Issues**" means it is Merck's reasonable belief that the advancement of the POC Compound would not be warranted for technical, safety or efficacy reasons, including [***] or [***].

5.3.4 *Exercise following Expiration of the New Research Program Terms.* If upon the expiration of the CVM Research Program Term or expiration of any CVM Research Program Tail Period, a CVM Merck Option is pending, Merck shall have the full [***] time period to exercise such CVM Merck Option. If upon the expiration of the Ophthalmology Research Program Term or expiration of any Ophthalmology Research Program Tail Period, an Ophthalmology Merck Option or POC Trial is pending, Merck shall have the full [***] time period to exercise such Ophthalmology Merck Option. If upon the expiration of the [***] Research Program Term or expiration of any [***] Research Program Tail Period, a [***] Merck Option is pending, Merck shall have the full [***] time period to exercise such [***] Merck Option.

5.4 License Grants Upon Exercise of Merck Option.

5.4.1 *Grant.* On a Merck Option-by-Merck Option basis, and subject to the terms and conditions of this Agreement and effective only upon Merck's exercise of the Merck Option in accordance with Section 5.3 (provided that if Antitrust Approvals are required in connection with such exercise, then effective only upon receipt of such Antitrust Approvals), NGM shall be hereby deemed to have granted and hereby grants to Merck the exclusive, royalty-bearing right and license, with the right to grant sublicenses in accordance with Section 5.4.3, under all of NGM's rights, title and interest in and to the NGM IP, and NGM's interest in any Collaboration Technology, to research, Develop, use, manufacture (including making and having made) and Commercialize (including selling, offering for sale, importing and exporting) the Optioned Compounds and all Optioned Products that are the subject of each of such Merck Option, in the Field in the Territory; provided, however, that such right and license does not include any right or license to: (a) [***]; (b) [***]; or (c) [***].

5.4.2 *Unblocking License.* In the event that either the use, manufacturing (including making and having made) or Commercialization (including sell, offer for sale, import and export) by Merck of a particular Optioned Compound or Optioned Product (in each case in the form in which such Optioned Compound or Optioned Product was provided by NGM to Merck pursuant to this Agreement) in the Field in the Territory pursuant to this Agreement, would infringe during the Term a claim of an issued Patent Right which is Controlled by NGM or its Affiliates (subject to Section 14.3) and which is not covered by the grant in Section 5.4.1, NGM hereby grants, and NGM shall cause its Affiliates (subject to Section 14.3) to grant, to Merck, subject to the terms and conditions of this Agreement and subject to any exclusive license grants to Third Parties (which license grants occurred prior to initiation of the first Phase 2 Clinical Trial of the relevant

Optioned Compound or Optioned Product), a non-exclusive, with the right to grant and authorize sublicenses in accordance with Section 5.4.3, royalty-free license in the Territory during the Term under such issued Patent Right for Merck and its Related Parties to use, manufacture (including the making and having made) or Commercialize (including selling, offering for sale, importing and exporting) Commercialize Optioned Compounds and Optioned Products in the Field in the Territory.

5.4.3 *Sublicense Rights*. Merck may grant sublicenses of the license under Sections 5.4.1 and 5.4.2 to any Affiliate at any time; provided, however, in the case of a sublicense of the license under Section 5.4.2 that such Affiliate has received a sublicense of the license under Section 5.4.1 in accordance with this Section 5.4.3 with respect to the applicable Optioned Compound or Optioned Product. Merck may grant sublicenses of the license under Sections 5.4.1 and 5.4.2 to a Third Party; provided, however, that: (1) each such sublicense is in writing and is consistent with the applicable terms of this Agreement (including, to the extent applicable, retaining NGM's Co-Detailing Option); (2) each such sublicense terminates upon the termination of this Agreement in its entirety or as it relates to the particular Optioned Products that are the subject of such sublicense; (3) in the case of a sublicense of the license under Section 5.4.2 that such Third Party has received a sublicense of the license under Section 5.4.1 in accordance with this Section 5.4.3 with respect to the applicable Optioned Compound or Optioned Product; and (4) solely with respect to an NGM Optioned Product, [***] contained in Sections 5.4.1 and 5.4.2 with respect to such NGM Optioned Product in the US or worldwide (*i.e.*, a sublicense of all Commercialization rights in the US or throughout the world and in all Indications), and Merck may only grant such a sublicense [***] days after such notice and [***].

5.4.4 *Covenant*. NGM covenants that it will not: (i) take any action that would cause a lien, charge or encumbrance of NGM IP or NGM's interest in any Collaboration Technology; or (ii) assign, transfer, convey or otherwise grant to any Person: (a) any rights to any NGM IP or NGM's interest in any Collaboration Technology (or any rights to any intellectual property that would otherwise be included in the NGM IP or NGM's interest in any Collaboration Technology but for such action resulting in the loss of Control of such intellectual property rights), in any manner that is inconsistent with the exclusive licenses granted to Merck pursuant to Section 5.4.1 or option rights granted to Merck hereunder; or (b) any rights to any Optioned Compounds or Optioned Products that are inconsistent with the exclusive licenses granted to Merck pursuant to Section 5.4.1.

5.5 Transfer Following Option Exercise. On an Optioned Product-by-Optioned Product basis, following Merck's exercise of the Merck Option with respect to each such Optioned Product:

5.5.1 NGM shall transfer and assign to Merck or its designee all of the then existing INDs (if any) (together with a copy of all material documents submitted to the applicable Regulatory Authority in connection therewith for the Optioned Products), that relate to such Optioned Compound and/or Optioned Product, as applicable;

5.5.2 NGM shall deliver to Merck copies of all clinical data and adverse event reports (including all such adverse event reports contained in NGM's or its Affiliates' regulatory and/or safety databases) in the same form in which NGM or its Affiliates maintains such data or reports, as applicable, in each case, relating to such Optioned Compounds or Optioned Products;

5.5.3 NGM shall deliver to Merck, in the same form in which NGM maintains such items, copies of the material regulatory correspondence generated hereunder and owned by NGM or its Affiliates, which is in NGM's or its Affiliates' possession relating to the pre-clinical or clinical development of such Optioned Compounds or Optioned Products, as applicable;

5.5.4 NGM shall, at Merck's request, deliver to Merck all inventory (if any, and to the extent applicable) of GMP and non-GMP Optioned Products and bulk Optioned Compounds in the forms currently residing, as of such notice of termination, in NGM's (or its Affiliates' or its CMO's) inventory that are not necessary for NGM to perform its obligations hereunder; provided, however, that Merck covenants that it shall not use any non-GMP Optioned Product and/or bulk non-GMP Optioned Compound in humans for any purpose; and

5.5.5 NGM shall, at Merck's request, reasonably assist Merck in maintaining supply continuity for a reasonable period of time after Merck's exercise of the Merck Option in order to allow Merck to qualify and scale-up an alternative source of supply. Such assistance shall include, at Merck's request, the supply to Merck or its designee of GMP Optioned Products and Optioned Compounds and at a cost equal to NGM's fully allocated cost of goods sold, as consistently calculated, for such supplied Optioned Product or Optioned Compound (as applicable). Such assistance shall also include a paper manufacturing technology transfer in which NGM provides Merck or its designee with all documents and records, whether in paper or electronic form (and including all batch records, master batch records and SOPs) in NGM's or its Affiliate's or CMO's possession that are reasonably

necessary to manufacture the Optioned Product and/or Optioned Compound according to the then current specifications.

5.6 Optioned Target Exclusivity. Effective only upon exercise of a Merck Option and receipt of the Option Exercise Payment, NGM and its Affiliates (exclusive of an Acquiror and Affiliates of such Acquiror immediately prior to the Change of Control) shall not, itself or with any Affiliate or Third Party (including through granting a license or otherwise enabling any such activities), conduct any research, development (including pre-clinical studies and Clinical Studies), manufacturing or commercialization with respect to any compound that [***], for so long as Merck's license under Section 5.4.1 remains in effect with respect to such Optioned Compound.

5.7 [***] **by Merck Upon Non-Exercise of Merck Option**.

5.7.1 [***]. On a Non-Qualifying Compound-by-Non-Qualifying Compound, or Refused Candidate-by-Refused Candidate, basis, as applicable, subject to the terms and conditions of this Agreement (including Section 4.5, Section 5.3.2 and Section 9.7), Merck [***] such Non-Qualifying Compound or such Refused Candidate, as applicable, and products that incorporate or contain such Non-Qualifying Compound or Refused Candidate, as applicable, in each case in the Field in the Territory. For clarity, [***], with respect to [***] and Merck's interest in any Collaboration Technology, specific to [***] and Collaboration Technology that is embodied in the applicable Non-Qualifying Compound or Refused Candidate. Notwithstanding anything in Section 1.132, Section 1.133, Section 1.135, Section 1.136 or this Section 5.7.1 to the contrary, to [***] to Merck, Merck will notify NGM (which notice shall identify such [***] in connection with the Non-Qualifying Compound, or Refused Candidate, as applicable. If Merck [***], Merck will [***]. Any such efforts by Merck done solely [***] shall not be deemed to be a breach by Merck of its obligations hereunder. [***] shall cause such [***] to be excluded from the definition of the relevant [***].

5.7.2 [***]. NGM may [***] under Sections 5.7.1 to any Affiliate at any time. NGM [***]; provided, however, that each such [***] consistent with the applicable terms of this Agreement. NGM will notify Merck in writing regarding [***] and will also notify Merck in writing regarding the [***] to Merck in writing).

5.8 [***]

5.8.1 If NGM (a) determines that it will engage (or otherwise engages) in a formal partnering process to commercialize (or to develop and commercialize) any

Selected Oncology Collaboration Compound or any Other Collaboration Compound (except as by way of a Change of Control transaction) or (b) [***], NGM determines to engage (or otherwise engages) in negotiations with such Third Party with respect thereto, in each case of (a) and (b), [***], then NGM shall be obligated to provide Merck with notice of such partnering process in writing in accordance with Section 16.5 within [***] of such provision or determination (the "**Partnering Notice**"), [***]. Merck shall keep the terms of such Partnering Notice and any additional information provided pursuant to this Section 5.8 confidential consistent with the terms of Section 10.1, and, [***].

5.8.2 If Merck provides NGM with a written offer containing material terms relating to the commercialization or development and commercialization, as applicable, of such Selected Oncology Collaboration Compound or Other Collaboration Compound within [***] after its receipt of the Partnering Notice, then NGM shall reasonably participate in good faith non-exclusive negotiations with Merck with respect thereto. Neither Party shall be obligated to enter into any agreement with regard to such commercialization or development and commercialization, as applicable, rights with respect to any such Selected Oncology Collaboration Compound or Other Collaboration Compound. NGM shall not be prohibited from negotiating or executing an agreement with any other Third Party(ies) with respect to such commercialization or development and commercialization, as applicable, rights.

5.8.3 In the event Merck and NGM enter into a commercialization or development and commercialization, as applicable, agreement with respect to such Selected Oncology Collaboration Compound or Other Collaboration Compound, NGM would not be obligated to pay royalties on Net Sales of products that incorporate such Selected Oncology Collaboration Compound or Other Collaboration Compound pursuant to Section 9.7. When NGM presents any financial proposal submitted by Merck for such commercialization or development and commercialization, as applicable, rights to its Board of Directors (or a committee thereof) for consideration, NGM will [***]. If NGM and Merck do not execute an agreement for the commercialization or development and commercialization, as applicable of a Selected Oncology Collaboration Compound or Other Collaboration Compound, then NGM shall owe royalties to Merck with respect to products that incorporate or contain such Selected Oncology Collaboration Compound or Other Collaboration Compound as set forth in Section 9.7.

5.8.4 The rights and obligations pursuant to this Section 5.8 shall expire upon [***].

ARTICLE 6
SMALL MOLECULE COLLABORATION PROGRAM

6.1 License Grant by NGM.

6.1.1 *Research License*. As of the Original Effective Date, NGM hereby grants to Merck with respect to a given Collaboration Target, an exclusive license (even as to NGM, except to the extent required for NGM to perform its obligations under the Collaboration) under the NGM IP, and NGM's interest in any Collaboration Technology related thereto, to research, Develop, discover and identify Small Molecule Collaboration Compounds and Small Molecule Products that Modulate such Collaboration Target, and to make, have made and use any such Small Molecule Collaboration Compounds and Small Molecule Products in the Territory, which such license shall: (a) remain an exclusive, royalty-free (even as to NGM, except to the extent required for NGM to perform its obligations under the Collaboration) license if such Collaboration Target becomes an Optioned Target; and (b) convert to a non-exclusive, royalty-free license, at such time, if any, as such Collaboration Target becomes a Non-Qualifying Target.

6.1.2 *Commercial License.* As of the Original Effective Date, NGM hereby grants to Merck an exclusive (even as to NGM, except to the extent required for NGM to perform its obligations under the Collaboration) royalty-bearing license (subject to Section 9.6), under the NGM IP, and NGM's interest in any Collaboration Technology, with the right to grant and authorize sublicenses in accordance with Section 6.1.4, to: (i) manufacture (including making and having made) Small Molecule Collaboration Compounds and Small Molecule Products researched, Developed, used, discovered or identified pursuant to the license set forth in Section 6.1.1, in the Territory; and (ii) manufacture (including making and having made), use and Commercialize (including selling, offering for sale, importing and exporting) such Small Molecule Collaboration Compounds and Small Molecule Products in the Field in the Territory.

6.1.3 *Unblocking License.* In the event that use, manufacturing (including making and having made) or Commercialization (including sell, offer for sale, import and export) by Merck, or Merck's Related Parties of a particular Small Molecule Collaboration Compound or Small Molecule Product in the Field in the Territory pursuant to this Agreement, would infringe during the Term a claim of an issued Patent Right which is Controlled by NGM or its Affiliates (subject to Section 14.3) and which is not covered by the grant in Section 6.1.1 or 6.1.2, NGM hereby grants, and NGM shall cause its Affiliates (subject to Section 14.3) to grant, to Merck, subject to the terms and conditions of this Agreement and subject

to any exclusive license grants to Third Parties (which license grants occurred prior to initiation of the first Phase 2 Clinical Trial of the relevant Small Molecule Collaboration Compound or Small Molecule Product) a non-exclusive, with the right to grant and authorize sublicenses in accordance with Section 6.1.4, royalty-free license in the Territory during the Term under such issued Patent Right to use, manufacture (including making and having made) or Commercialize (including selling, offering for sale, importing and exporting) such Small Molecule Collaboration Compound in the Field in the Territory.

6.1.4 *Sublicenses.* Merck may grant sublicenses of the license under Sections 6.1.1, 6.1.2 and 6.1.3 to any Affiliate at any time; provided, however, in the case of a sublicense of the license under Section 6.1.3 that such Affiliate has a received sublicense of the license under Section 6.1.2 in accordance with this Section 6.1.4 with respect to the applicable Small Molecule Collaboration Compound. Merck may grant sublicenses of the license under Sections 6.1.1, 6.1.2 and 6.1.3 to a Third Party; provided, however, that: (1) each such sublicense is in writing and is consistent with the applicable terms of this Agreement; (2) each such sublicense terminates upon the termination of this Agreement as it relates to Small Molecule Collaboration Compounds and Small Molecule Products; (3) in the case of a sublicense of the license under Section 6.1.1 that such Third Party is solely permitted to perform research on behalf of Merck; and (4) in the case of a sublicense of the license under Section 6.1.3 that such Third Party has a received sublicense of the license under Section 6.1.2 in accordance with this Section 6.1.4 with respect to the applicable Small Molecule Collaboration Compound.

6.1.5 *Negative Covenant; No Implied Licenses*.

(a) Merck covenants that it will not knowingly use or practice any of NGM's intellectual property rights licensed to it under this Section 6.1, except for the purposes expressly permitted in the applicable license grant. Except as specifically set forth in this Agreement, neither Party shall acquire any license or other intellectual property interest, by implication or otherwise, in any Information disclosed to it under this Agreement or under any Know-How or patents or patent applications owned or Controlled by the other Party or its Affiliates.

(b) NGM covenants that it and its Affiliates will not: (i) take any action that would cause a lien, charge or encumbrance of NGM IP or NGM's or its Affiliate's interest in any Collaboration Technology; or (ii) assign, transfer, convey or otherwise grant to any Person: (a) any rights to any NGM IP or NGM's or its Affiliate's interest in any Collaboration

Technology (or any rights to any intellectual property that would otherwise be included in the NGM IP or NGM's or its Affiliate's interest in any Collaboration Technology but for such action resulting in the loss of Control of such intellectual property rights), in any manner that is inconsistent with the exclusive licenses granted to Merck pursuant to Section 6.1.2, or the other licenses granted to Merck pursuant to Section 6.1.1; or (b) any rights to any Small Molecule Collaboration Compound or Small Molecule Product that are inconsistent with the exclusive licenses granted to Merck pursuant to Section 6.1.2, or the other licenses granted to Merck pursuant to Section 6.1.1.

6.2 Conduct of Small Molecule Collaboration Compound Program. During the Term, Merck will perform, at its discretion and at its own cost and expense, any and all activities for the research, Development, use, discovery, identification, manufacturing (including making and having made) and Commercialization (including sell, offer for sale, import and export) of Small Molecule Collaboration Compounds and Small Molecule Products.

6.3 No NGM Development or Commercialization Right. The Parties acknowledge and agree that neither the NGM ANS Option nor the Co-Detailing Option set forth in ARTICLE 7 shall apply with respect to Small Molecule Collaboration Compounds or Small Molecule Products.

6.4 Information Regarding Merck's Efforts. The JEC shall serve as a forum for discussing the progress of any research being conducted by or on behalf of Merck with respect to any Small Molecule Collaboration Compounds, as set forth in Section 2.4. In addition, Merck will provide to NGM [***].

ARTICLE 7
COMMERCIALIZATION OF PRODUCTS; NGM OPTIONS

7.1 Development and Manufacture of Products. Merck, as between the Parties, shall have the sole right for all Development and manufacture of Optioned Compounds, subject to the NGM ANS Option.

7.2 Commercialization of Products That Are Not NGM Optioned Products. With respect to any Products as to which NGM has not exercised the NGM ANS Option, Merck shall have, as between the Parties, the sole right for Commercialization of such Products in the Field in the Territory.

7.3 Commercialization of NGM Optioned Products. Merck shall be solely responsible for Commercialization of NGM Optioned Products in the Field outside the Co-Detailing Territory, and Merck, as between the Parties, shall have the sole right for Commercialization of the NGM Optioned Product in the Field in the Co-Detailing Territory, subject to NGM's option to Co-Detail the NGM Optioned Product in the Co-Detailing Territory as set forth in this ARTICLE 7.

7.4 Development and Commercial Diligence for Products.

7.4.1 *Merck*. NGM understands and acknowledges that Merck does not seek to launch or continuously market and/or sell its products in each and every country of the Territory and may not launch or continuously market and/or sell to Develop and/or Commercialize Products in every country of the Territory; provided, however, that Merck shall use Commercially Reasonable Efforts during the Term to seek Marketing Authorization for [***] and to Commercialize [***] following receipt of Marketing Authorization of such Product [***], including the Co-Detailing of each NGM Optioned Product [***] in the Co-Detailing Territory with NGM as and to the extent NGM exercises its Co-Detailing Option and in accordance with the terms of the Co-Detailing Agreement. NGM acknowledges that Merck's obligations pursuant to this Section 7.4.1 may be satisfied by in whole or in part by Related Parties or permitted assignees.

7.4.2 *NGM*. If and to the extent NGM exercises its Co-Detailing Option with respect to an NGM Optioned Product, NGM shall [***] conduct such Co-Detailing, in accordance with this Agreement and the Co-Detailing Agreement.

7.5 NGM ANS Option. On a Product-by-Product basis (to the extent applicable), the following shall apply:

7.5.1 *Generally; Projected Budgets and Plans.* Not later than [***] months prior to the anticipated first dosing of the first patient in the first Phase 3 Clinical Trial for such Product, Merck shall provide to NGM: (a) an initial Product Development Plan and Budget; and (b) an initial Global Commercialization Plan, to the extent developed at such time (but, in any event including a high level launch plan and associated budget for estimated Allowable Expenses of such Product through the second year post launch). NGM shall have the right to review and comment upon such initial plans and budgets, which Merck may update at its discretion based on such feedback, and NGM shall have the option (the "**NGM ANS Option**"), subject to Section 7.5.6, upon written notice delivered within [***] days following receipt of the final iteration of such then current plans and budgets, which Merck shall identify as such when delivered to NGM (the "**Baseline**

Projected Plans and Budgets"), to elect to co-fund a portion, to be no less than twenty-five percent (25%) and no greater than fifty percent (50%), of the worldwide Development Costs and Allowable Expenses for such Product (such elected percentage, the "**NGM ANS Allocation**"), in exchange for a share of the Adjusted Net Sales for such Product, at a percentage equal to the NGM ANS Allocation; provided, however, that, in the event of a Competing Pharma Change of Control, NGM (or its Acquiror or other successor in interest) shall only be permitted thereafter to exercise the NGM ANS Option at the twenty-five percent (25%) NGM ANS Allocation, which NGM ANS Options shall remain subject to Section 7.5.6. For clarity, the Parties understand that the NGM ANS Option under this Agreement shall not apply to any Small Molecule Collaboration Compounds or Small Molecule Products. NGM acknowledges and agrees that the Baseline Projected Plans and Budgets (*i.e.*, the Product Development Plan and Budget and the Global Commercialization Plan) are estimates only and subject to revision in accordance with the terms and conditions of this Agreement.

7.5.2 *Advanced Amounts.* If NGM elects to exercise the NGM ANS Option, then, notwithstanding Section 7.5.1, and regardless of the level of NGM ANS Allocation elected by NGM, Merck would advance to NGM and/or absorb on behalf of NGM an amount equal to twenty-five percent (25%) of the total of the Development Costs and Allowable Expenses (the "**Advanced Amounts**"), which would be carried forward and recouped by Merck out of NGM's share of future Adjusted Net Sales from such Product as well as NGM's share of future Adjusted Net Sales from any and all other Products as to which NGM has exercised the NGM ANS Option; provided, however, that such Advanced Amounts are subject to an aggregate cap of Five Hundred Million United States Dollars ($500,000,000) across all NGM Optioned Products, unless otherwise agreed by the Parties. All Advanced Amounts shall be subject to an interest rate of eight percent (8%), compounded annually, and such accrued interest shall be considered part of the "Advanced Amounts" for purposes of this Agreement, except that such interest amounts shall not be included when determining whether the Advanced Amount cap set forth in the foregoing sentence has been met. Should NGM exercise the NGM ANS Option and elect an NGM ANS Allocation that is more than twenty-five percent (25%) (such amount over twenty-five percent (25%), the "**Self-Funded Allocation Amount**"), NGM would be solely responsible for funding such Self-Funded Allocation Amount of Development Costs and Allowable Expenses, as applicable. For example, if NGM exercises the NGM ANS Option and elects an NGM ANS Allocation Amount of forty percent (40%), Merck would advance and/or absorb an amount equal to twenty-five percent (25%) and NGM would fund directly fifteen percent (15%) of the total

Development Costs and Allowable Expenses for such NGM Optioned Product. NGM would have the right to prepay any Advanced Amounts at any time, including prior to First Commercial Sale of the applicable NGM Optioned Product.

7.5.3 *Opting-In to Amended Development Plans and Budgets over the Baseline.*

(a) Merck has the right to update the Baseline Projected Plans and Budgets in its discretion, provided that such update shall be discussed and reviewed at the next occurring JLDDC (with respect to the Product Development Plan and Budget) and/or JCC (with respect to the Global Commercialization Plan) meeting, as appropriate. In the event that the Development Costs or Allowable Expenses associated with such amended Product Development Plan and Budget and/or Global Commercialization Plan are more than [***] over the amount set forth in the Baseline Projected Plans and Budget or any then-current Revised Baseline Plans and Budget (such overage amount, the "**Baseline Budget Overage**"), following such discussion at such committee (and regardless of whether NGM's representatives on such JLDDC or JCC, as applicable, approve such proposed updated Product Development Plan and Budget), NGM shall have a period of [***] in which to determine and to reasonably request such additional information from Merck as it requires in order to determine, whether it elects to: (i) continue to co-fund such Baseline Budget Overage at the same NGM ANS Allocation level; (ii) co-fund such Baseline Budget Overage at a lesser level [***]; or (iii) not co-fund any portion of such Baseline Budget Overage. In the event that NGM, in its sole discretion, agrees pursuant to clause (i) or (ii) above to co-fund such Baseline Budget Overage, then such Product Development Plan and Budget and/or Global Commercialization Plan, as applicable, shall henceforth be deemed, collectively, the "**Revised Baseline Projected Plans and Budgets**." In the event that NGM does not elect to co-fund any such Baseline Budget Overage under clause (iii) above, or in the event of any portion of the Baseline Budget Overage that NGM elects not to co-fund under clause (ii) above, then Merck shall pay and/or absorb all such amounts (such amounts in either case, "**Unpaid Costs**"); provided, however, that, for clarity, NGM shall be responsible (as part of the Self-Funded Allocation Amount) for all amounts that are within [***] of the Baseline Projected Plans and Budgets or then-current Revised Baseline Projected Plans and Budgets, as applicable.

(b) In the event that there are Unpaid Costs associated with a given NGM Optioned Product, the NGM ANS Allocation for such NGM Optioned Product (and NGM's share of Development Costs and Allowable Expenses going forward thereafter) shall be reduced at the time of First Commercial Sale, and thereafter once per Calendar Year on or about the anniversary of the Original Effective Date, by replacing the NGM ANS Allocation with [***], where:

(i) [***]; and

(ii) [***];

with the resulting percentage being the NGM ANS Allocation to be in effect until the next such calculation; provided, however, that this Section 7.5.3, and the Unpaid Costs concept, shall only apply with respect to amendments to Baseline Projected Plans and Budgets or then-current Revised Baseline Projected Plans and Budgets (*i.e.*, amendments that NGM has not opted to co-fund, or has opted to ramp down on co-funding with respect to a given Baseline Budget Overage, under Section 7.5.3(a)) and NGM shall remain solely responsible for funding all Self-Funded Allocation Amounts (without limiting the Advanced Amount concept described in Section 7.5.2) described in the Baseline Projected Plans and Budgets or then-current Revised Baseline Projected Plans and Budgets, as the case may be.

7.5.4 *Payment of Development Costs.* In the event NGM exercises the NGM ANS Option with respect to a given Product, within [***] following the end of each Calendar Quarter during the Term, Merck shall deliver to NGM a written report (each, a "**Development Costs Report**") setting forth in detail, with supporting documentation for out of pocket costs in excess of [***], the Development Costs incurred by it (or its Affiliates) in such Calendar Quarter with respect to such NGM Optioned Product, by activity. The Development Costs Report shall also include any Development Costs incurred by Merck (or its Affiliates) in any of the preceding Calendar Quarters that were not previously included and accounted for in a prior Development Costs Reports. To the extent, there are any applicable Self-Funded Allocation Amounts, NGM shall pay to Merck its share, based upon the NGM ANS Allocation, of undisputed Development Costs within [***] of its receipt of the Development Costs Report, subject to Section 7.5.3 and Section 7.5.5.

7.5.5 *Sharing of Adjusted Net Sales.*

(a) In the event NGM exercises the NGM ANS Option with respect to a given Product, NGM shall receive an amount equal to the NGM ANS Allocation of all Adjusted Net Sales, subject to the calculations described in this Section 7.5.5 to account for Advanced Amounts, the unpaid Self-Funded Allocation Amounts of any Development Costs owed pursuant to Section 7.5.4, if any ("**Outstanding Development Payments**"), and the Allowable Expenses incurred by both Parties.

(b) Within [***] days after the end of each Calendar Quarter, each Party shall submit to the other Party a statement setting forth the Allowable Expenses, if any, it (or its Affiliates) incurred in such Calendar Quarter in connection with such NGM Optioned Product, or any Allowable Expenses incurred by such Party (or its Affiliates) in any of the preceding Calendar Quarters that were not previously included and accounted for in a prior Allowable Expense statement.

(c) Commencing with the First Commercial Sale of any such NGM Optioned Product, in each Calendar Quarter Merck shall notify NGM of any negative Adjusted Net Sales within [***] days after the end of such Calendar Quarter and: (i) if the Allowable Expenses incurred by NGM for such Calendar Quarter in connection with such NGM Optioned Product are less than its share of such negative Adjusted Net Sales in connection with such NGM Optioned Product, NGM shall pay the difference between the Allowable Expenses incurred by NGM and the NGM ANS Allocation of such negative Adjusted Net Sales within [***] after the end of such Calendar Quarter; provided, however, that to the extent NGM has not used up the entirety of the Advanced Amounts available to it, then the amounts under this clause (c) can count as part of the Advanced Amounts, if any (the aggregate of all such Advanced Amounts, including the amounts pursuant to this clause (c) and the Advanced Amounts advanced and/or absorbed by Merck under Section 7.5.2 in the context of Development Costs, the "**Total Deferred Costs**"); and (ii) if the Allowable Expenses incurred by NGM for such Calendar Quarter in connection with such NGM Optioned Product exceed its share of negative Adjusted Net Sales, Merck shall pay the difference between Merck's share of the Allowable Expenses incurred by NGM and the NGM ANS Allocation of such negative Adjusted Net Sales, less any Outstanding Development Payments, within [***] days after the end of such Calendar Quarter.

(d) For each Calendar Quarter in which Adjusted Net Sales in connection with such NGM Optioned Product is positive, Merck shall pay NGM the NGM

ANS Allocation of such amounts plus Merck's share of the Allowable Expenses incurred by NGM in such Calendar Quarter to the extent not covered by the positive portion of the NGM ANS Allocation, less deduction for any Total Deferred Costs and/or Outstanding Development Payments, to NGM within [***] days after the end of such Calendar Quarter. Sharing of Adjusted Net Sales shall extend under this Agreement for so long as such NGM Optioned Product is sold in the Territory, whether by Merck, its Affiliates, sublicensees or successors in interest.

7.5.6 *NGM ANS Allocation and Option Cap*. Notwithstanding the foregoing, or anything to the contrary herein, NGM's right to exercise the NGM ANS Option shall be limited as set forth in this Section 7.5.6. If, at the point in time when the NGM ANS Option becomes exercisable under Section 7.5.1 with respect to a particular Product, the sum of: (a) the Self-Funded Allocation Amounts actually incurred by NGM across all NGM Optioned Products as of such time; plus (b) the projected Self-Funded Allocation Amounts set forth in the Baseline Projected Plans and Budgets or the then-current Revised Baseline Projected Plans and Budgets, as the case may be, for NGM Optioned Products; plus (c) the Self-Funded Allocation Amount that NGM desires to elect with respect to such Product as set forth in the Baseline Projected Plans and Budgets for such Product as to which the NGM ANS Option has become exercisable, [***] (the "**NGM ANS Option Cap**"), then NGM shall not have the right to exercise the NGM ANS Option with respect to such Product (or any Products thereafter unless and until, as determined at the time any subsequent NGM ANS Option shall have otherwise become exercisable, the sum of the amounts set forth in items (a), (b) and (c) above do not equal or exceed the NGM ANS Option Cap). With respect to any Product(s) as to which NGM is unable to exercise the NGM ANS Option pursuant to this Section 7.5.6, such Products would be subject to the payment by Merck of the milestones and royalties set forth in ARTICLE 9. For clarity, with respect to any NGM Optioned Products existing as of the time that the NGM ANS Option Cap is reached, NGM shall have the right to continue sharing in Development Costs, Allowable Expenses and Adjusted Net Sales with respect to such NGM Optioned Products in accordance with the NGM ANS Allocation applicable to each such NGM Optioned Product at such time, regardless of the actual Self-Funded Allocation Amounts actually incurred by NGM in connection therewith.

7.6 Commercialization Plans for NGM Optioned Products.

7.6.1 *Initial Global Commercialization Plan*. For each NGM Optioned Product, an initial Global Commercialization Plan shall be prepared by Merck and submitted to the JCC for review and approval no later than [***] prior to [***].

7.6.2 *Updated Global Commercialization Plan*. Not later than [***] of each Calendar Year, Merck shall submit to the JCC for review and approval an updated Global Commercialization Plan for the [***] of such Calendar Year and attach to the minutes of the meeting of the JCC at which such Global Commercialization Plan or any amendment, modification or update is approved by the JCC. The Global Commercialization Plan will also include an estimated budget detailing the estimated Allowable Expenses for the Product in the Territory for such Calendar Year.

7.6.3 *Merck Control*. For clarity, pursuant to Section 2.9.8, Merck shall have final decision-making authority regarding any disputes in the JCC with respect to the Global Commercialization Plan, provided, however, that Merck will consider in good faith any issues or comments provided by NGM with respect to the Global Commercialization Plan at the JCC meeting at which such plan is reviewed.

7.7 Commercialization Responsibilities for NGM Optioned Products. Subject to NGM's rights in the event of exercise of its Co-Detailing Option and as specified in the Co-Detailing Agreement, and consistent with the Global Commercialization Plan, Merck will be solely responsible for all strategic and tactical planning and execution of Commercialization of NGM Optioned Products in the Territory, including the conduct of all pre-marketing, marketing, promotion, sales, distribution, import and export activities (including securing reimbursement, sales and marketing and conducting any post-marketing trials or post-marketing safety surveillance or maintaining databases).

7.7.1 Merck shall have all rights to determine pricing, reimbursement, discounting and other aspects of the sales of NGM Optioned Products in the Territory, at its sole discretion.

7.7.2 NGM's representatives on the JCC shall receive a copy of the Global Commercialization Plan in connection with their participation in the JCC and in sufficient time to review such plan prior to the JCC meeting to approve such plan.

7.7.3 Merck shall book all sales of the NGM Optioned Product in the Territory.

7.7.4 Unless and until NGM elects to exercise its Co-Detailing Option, Merck shall, as between the Parties, be solely responsible for the promotion and detailing of the

NGM Optioned Product in the Co-Detailing Territory. At all times, as between the Parties, Merck shall be responsible for all other aspects of the Commercialization of the NGM Optioned Product in the Co-Detailing Territory.

7.7.5 Without limiting the foregoing, Merck shall be responsible, as between the Parties, for the conduct of all sales, distribution, import and export activities for NGM Optioned Products (including securing reimbursement, and conducting any post-marketing trials or post-marketing safety surveillance, or maintaining databases).

7.7.6 Merck shall ensure that the plans, reports, and information prepared by Merck for consideration and comment by the JCC are sufficiently detailed in order to enable NGM, acting reasonably, to provide meaningful input with respect thereto.

7.8 Co-Detailing Option.

7.8.1 *Overview.* Subject to the terms and conditions of this Agreement and as specifically set forth in this Section 7.8, NGM (itself or through its Affiliate) shall have the option to Co-Detail the Product with Merck in the Co-Detailing Territory following First Commercial Sale of the Product in the Co-Detailing Territory. Such Co-Detailing shall be conducted pursuant to the Co-Detailing Agreement, to be entered into by the Parties as set forth in Section 7.8.4.

7.8.2 *Grant of Option.* NGM, either itself or through an Affiliate, shall have the option to Co-Detail each NGM Optioned Product through its own sales force in the Co-Detailing Territory in accordance with this Section 7.8.2 (the "**Co-Detailing Option**") and the Co-Detailing Agreement. Upon exercise by NGM, NGM may elect to provide up to twenty-five percent (25%) of the total requisite details for the NGM Optioned Product in the Co-Detailing Territory, as further set forth in Schedule 7.8.4; provided, however, that, in any event, NGM shall provide no less than [***] representatives. The term of such Co-Detailing shall extend for so long as Merck is actively detailing the NGM Optioned Product in the Co-Detailing Territory and the Co-Detailing Agreement remains in effect.

7.8.3 *Exercise of the Co-Detailing Option.* NGM may exercise the Co-Detailing Option, on an NGM Optioned Product-by-NGM Optioned Product basis, at its sole discretion, by written notice given to Merck within [***] following [***] with respect to such NGM Optioned Product. To better enable NGM to determine whether or not to exercise the Co-Detailing Option with respect to a given NGM Optioned Product, no later than [***] following [***] with respect to such NGM Optioned Product for such NGM Optioned Product in the Co-Detailing Territory,

Merck shall provide to NGM (including through meetings of the JLDDC and/or JCC, as and to the extent applicable), Merck's non-binding projected Allowable Expenses, including Selling Expenses, and associated initial Target Call List (as defined and described in Schedule 7.8.4) for such NGM Optioned Product through the second year post launch.

7.8.4 *Negotiation, Execution and Delivery of Co-Detailing Agreement.* On an NGM Optioned Product-by NGM Optioned Product basis, promptly following exercise by NGM of its Co-Detailing Option with respect to such NGM Optioned Product, the Parties shall commence the negotiation in good faith of an agreement containing the complete terms and conditions of such Co-Detailing based upon the terms and conditions specified in this Section 7.8.4 and Schedule 7.8.4 and other customary and appropriate terms and conditions, and enter into a mutually acceptable definitive written agreement therefor (each a, and collectively the, "**Co-Detailing Agreement**"). The Parties shall negotiate each Co-Detailing Agreement in good faith and with sufficient diligence as is required to execute and deliver such Co-Detailing Agreement no later than [***] after notice of exercise of the applicable Co-Detailing Option. In the event the Parties fail to execute and deliver such Co-Detailing Agreement prior to the expiration of such [***] period, the [***] of Merck (or the equivalent position) and the Chief Executive Officer (or his designee) of NGM shall meet and negotiate such Co-Detailing Agreement in good faith. For the avoidance of doubt, the inability of the Parties to execute and deliver such Co-Detailing Agreement prior to the expiration of such [***] period shall not cause NGM to lose the applicable Co-Detailing Option; provided, however, that, [***] or [***]. For clarity, nothing in this Section 7.8.4 shall limit the ability of the Parties to negotiate the terms and conditions of the Co-Detailing Agreement at any time, including prior to NGM's exercise of a Co-Detailing Option; provided, however, that, the Parties shall not execute, and NGM shall have no Detailing rights, until such time as NGM exercises a Co-Detailing Option.

7.8.5 *Co-Detailing Costs.* Each Party will bear the Selling Expenses it incurs in connection with its own field sales force, which such Selling Expenses shall be Allowable Expenses in the calculation of Adjusted Net Sales.

7.8.6 *Other Commercialization Activities.* At all times, as between the Parties, Merck shall be the responsible Party for all aspects of the Commercialization of the NGM Optioned Product in the Co-Detailing Territory other than Co-Detailing.

ARTICLE 8
GENERAL RESEARCH AND DEVELOPMENT REQUIREMENTS; COMPLIANCE WITH LAWS

8.1 Records and Inspection Rights.

8.1.1 *Records*. NGM shall maintain records, in sufficient detail and in good scientific manner appropriate for patent and regulatory purposes, which shall fully and properly reflect all work done and results achieved in the performance of the Research Program.

8.1.2 *Copies and Inspection of Records*. Merck shall have the right, not more than once per Calendar Year, during normal business hours and upon reasonable notice, to inspect all such records of NGM referred to in Section 8.1.1; provided, however, that such once annual limitation shall not apply with respect to any subsequent "for cause" audit. Merck shall maintain such records and the information disclosed therein in confidence in accordance with ARTICLE 10.

8.1.3 *Data Integrity*. NGM agrees that it shall carry out all Research Program activities and collect and record any data generated therefrom in a manner consistent with the requirements below:

(a) Data will be generated using sound scientific techniques and processes;

(b) Data will be accurately recorded in accordance with good scientific practices by persons conducting research hereunder;

(c) Data will be analyzed appropriately without bias in accordance with good scientific practices; and

(d) Data and results will be stored securely and can be easily retrieved.

8.1.4 *Inspections by Governmental Authority*. If any Regulatory Authority conducts or gives notice to a Party (or any of its Affiliate's or subcontractor's performing Collaboration activities) of its intent to conduct an inspection or audit at such Party's, or any of its Affiliate's or subcontractor's, facility(ies) in which the Collaboration is being conducted or to take any other regulatory action with respect to any of such Party's, or any of its Affiliate's or subcontractor's, Collaboration activities, such Party shall promptly notify the other Party prior to and promptly following complying with such a demand or request. Such inspected or audited Party agrees to promptly inform the other Party of the issuance of any FDA Form 483 or any equivalent regulatory action by any other

Regulatory Authority concerning any aspect of the Collaboration. Notwithstanding the foregoing, the provisions of this Section 8.1.4 shall only apply to facilities of Merck (or its Affiliates or subcontractors) to the extent the inspection relates to Collaboration activities or NGM Optioned Products.

8.2 Compliance with Law and Ethical Business Practices.

8.2.1 NGM shall conduct the Research Program, perform its obligations, and exercise its rights under this Agreement in accordance with all Laws including, solely if applicable, all current governmental regulatory requirements concerning Good Laboratory Practices and Good Manufacturing Practices. NGM shall notify Merck in writing of any deviations from such applicable regulatory or legal requirements. NGM certifies that it will not and has not employed or otherwise used in any capacity the services of any person or entity debarred under Section 21 USC 335a in performing any research, development or commercialization activities hereunder. NGM shall notify Merck in writing immediately if any such debarment occurs or comes to its attention, and shall, with respect to any person or entity so debarred, promptly remove such person or entity from performing any research, function or capacity related to the Research Program.

8.2.2 NGM acknowledges that Merck's corporate policy requires that its business must be conducted within the letter and spirit of the law. By signing this Agreement, NGM agrees to conduct the services contemplated herein in a manner that is consistent with both Law and good business ethics.

8.2.3 NGM shall not make any payment, either directly or indirectly, of money or other assets (hereinafter collectively referred as a "**Payment**"), to government or political party officials, officials of international public organizations, candidates for public office or representatives of other businesses or persons acting on behalf of any of the foregoing (hereinafter collectively referred as "**Officials**") where such Payment would constitute violation of any law. In addition, regardless of legality, NGM shall not make any Payment either directly or indirectly to Officials if such Payment is for the purpose of influencing decisions or actions with respect to the subject matter of this Agreement or any other aspect of NGM's business.

8.2.4 NGM certifies to Merck that as of the Original Execution Date NGM has screened itself, and its officers and directors, against the Exclusions Lists and it has informed Merck whether NGM or any of its officers or directors has been in Violation. After the execution of this Agreement, NGM shall notify Merck in writing immediately if any such Violation occurs or comes to its attention.

8.2.5 Each Party acknowledges that no employee of the other Party or its Affiliates shall have authority to give any direction, either written or oral, relating to the making of any commitment by such Party or its agents to any Third Party in violation of terms of this or any other provisions of this Agreement.

8.2.6 Each Party shall hold in confidence all data that identifies or could be used to identify an individual ("**Personal Data**"), except as required or permitted under this Agreement, or to the extent necessary to be disclosed to Regulatory Authority. In addition, each Party shall comply with all Laws with respect to the collection, use, storage, and disclosure of any Personal Data, including the U.S. Health Insurance Portability and Accountability Act (HIPAA) and the regulations promulgated thereunder. Each Party agrees to ensure that all appropriate technical and organization measures are taken to protect Personal Data against loss, misuse, and any unauthorized, accidental, or unlawful access, disclosure, alteration, or destruction, including without limitation, implementation and enforcement of administrative, technical, and physical security policies and procedures applicable to Personal Data. Merck and its Affiliates may use Personal Data received from NGM to create data sets that contain dates, ages, towns, cities, states and zip codes related to individuals ("**Research Data Sets**"), and may use and disclose the Research Data Sets, alone or in combination with data that cannot be used to identify an individual natural person ("**Non-Identifiable Data**"), for medical research, including research related to activities hereunder, and any filings of medical research study results with government Regulatory Authorities worldwide. Merck will: (a) not use or disclose Research Data Sets for any purpose other than as permitted by this Agreement, or as otherwise required by Law; (b) use appropriate safeguards to prevent the creation, use or disclosure of Research Data Sets other than as provided for by this Agreement; and (c) not use the Research Data Sets to identify any study subject or contact any study subject. Notwithstanding the foregoing, nothing in this Section 8.2.6 shall limit Merck's use or disclosure of Non-Identifiable Data.

8.3 **Use of Human Materials**. If any human cell lines, human tissue, human clinical isolates or similar human-derived materials ("**Human Materials**") have been or are to be collected by or on behalf of a Party for use in the Research Program, the collecting or using Party, as applicable, represents and warrants and covenants: (i) that it has complied, or shall comply, with all Laws relating to the collection and/or use of the Human Materials; and (ii) that it has obtained, or shall obtain, all necessary approvals and appropriate informed consents, in writing, for the collection and/or use of such Human Materials. The collecting or using Party, as applicable, shall provide documentation of such approvals and consents upon the other Party's request. Each Party further represents and warrants that such Human Materials collected by or on behalf of such Party may be

used in the Research Program as contemplated in this Agreement without any obligations to the individuals or entities ("**Providers**") who contributed the Human Materials, including any obligations of compensation to such Providers or any other Third Party for the intellectual property associated with, or use of, the Human Materials in the Research Program.

8.4 Animal Research. If animals are used in the Research Program, the Party using such animals will comply with the Animal Welfare Act or any other applicable local, state, national and international Laws relating to the care and use of laboratory animals. Each Party encourages the other Party to use the highest standards, such as those set forth in the Guide for the Care and Use of Laboratory Animals (NRC, 1996), for the humane handling, care and treatment of such research animals. All animals that are used in the course of the Research Program, or all products derived from those animals, such as eggs or milk, will not be used for food purposes, nor will these animals be used for commercial breeding purposes.

8.5 Product Complaints. Each Party shall be responsible for handling product complaints arising pursuant to its Development and Commercialization activities hereunder in compliance with Law. Each Party shall promptly provide the other Party with written notice of any such product complaint received by such Party, to the extent, such Party deems such product complaint material.

ARTICLE 9
PAYMENTS; ROYALTIES AND REPORTS

9.1 Research Funding; Extension Payments. In consideration for NGM's performance under the Research Program, Merck shall pay to NGM the research funding as set forth in ARTICLE 3 and ARTICLE 4. All such research funding payments shall be non-refundable (except as expressly set forth herein) and non-creditable. The Parties acknowledge that, upon Merck's exercise of its option to extend the Research Program by the First Extension Period, the Parties agreed that, in lieu of paying an extension payment of Twenty Million United States Dollars ($20,000,000.00) to NGM pursuant to the Original Agreement, Merck shall make [***] of [***] each. As of the A&R Effective Date, the Parties agree that (a) Merck has paid the first of such [***] and (b) Merck shall pay the remaining [***], totaling Sixteen Million United States Dollars ($16,000,000), to NGM on a [***] as part of the [***] Research Funding payments pursuant to Section 4.2.2(c) and such payments shall count towards the Research Funding Cap applicable to New Research Program Year 1. The Parties further acknowledge and agree that NGM has waived and Merck shall not have any obligation to pay any extension payment associated with the Second Extension Period pursuant to the Original Agreement.

9.2 Up-Front Fee. The Parties acknowledge that, in consideration of NGM's research efforts before the Original Effective Date, conduct of the Collaboration and the rights and licenses (including the licenses that were granted under the NP201 Program) and options thereto granted to Merck under this Agreement, Merck timely paid to NGM a non-refundable, non-creditable up-front fee in the aggregate amount of Ninety Four Million Four United States Dollars ($94,000,004.00) pursuant to the Original Agreement, allocated as follows: [***].

9.3 Equity Investment. The Parties acknowledge that, pursuant to and as further detailed in the Stock Purchase Agreement, Merck made an initial equity investment, at the Closing (as defined in the Stock Purchase Agreement), of One Hundred Five Million Nine Hundred Ninety-Nine Thousand and Nine Hundred Ninety-Six United States Dollars ($105,999,996.00) as payment for approximately fifteen percent (15%) of the fully diluted shares outstanding in NGM, and has certain other additional rights and obligations to purchase the capital stock of NGM.

9.4 Option Exercise Payment. Within thirty (30) days of each exercise by Merck of the Merck Option for an Option Subject Compound under Section 5.3, Merck shall pay to NGM the following non-refundable, non-creditable option exercise payments (a) Twenty Million United States Dollars ($20,000,000.00) in the event Merck exercises an Ophthalmology Merck Option and (b) Six Million United States Dollars ($6,000,000.00) in the event Merck exercises a CVM Merck Option or the [***] Merck Option (each, an "**Option Fee**"); provided, however, that, (i) the combined Option Fee for the exercise of the first Ophthalmology Merck Option for an Anti-C3 Collaboration Compound together with exercise of the Alternative Ophthalmology Merck Option shall be either (A) a total of Forty Million United States Dollars ($40,000,000) if at the time of such exercise no anti-[***] Collaboration Compound has been designated a Research Program Development Candidate or (B) a total of Forty-Five Million United States Dollars ($45,000,000) if at the time of such exercise one or more anti-[***] Collaboration Compound(s) has been designated a Research Program Development Candidate; and (ii) in the event that Antitrust Approvals are required, in connection with the exercise of a particular Merck Option, in accordance with Section 16.18.2, then such payment shall not be due until the later of [***] after such exercise or the receipt of such Antitrust Approvals; provided, further, that, if any requisite Antitrust Approval is not received or is no longer being sought, then: (A) Merck shall promptly notify NGM; (B) such Merck Option will be deemed to not have been exercised within the applicable Option Period; (C) no Option Fee will be due in connection with such Merck Option; (D) no rights or licenses will be granted pursuant to Section 5.4 in connection with such Merck Option; and (E) the relevant Option Subject Compound and its Related Compounds shall not become Optioned Compounds but instead shall be deemed to have been rejected by Merck for a Technical Issue (regardless of how such an issue is described in

Section 5.3.3) and shall be subject to Section 5.3.3. If Merck exercises an option pursuant to Section 5.3 for an Option Subject Compound that is a [***].

9.5 Milestone Payments for all Products.

9.5.1 *Development and Regulatory Milestones*.

(a) Merck shall pay to NGM the amounts set forth below, which shall be non-refundable and non-creditable, on the first achievement by or on behalf of Merck or any Related Party of each of the following milestone events for each CVM Research Program Development Candidate or [***] Research Program Development Candidate, as applicable; provided, however, that for any such Research Program Development Candidate that is advanced following and on account of failure of an earlier Research Program Development Candidate in the same Research Program (such newly advanced Research Program Development Candidate, a "**Back-up Research Program Development Candidate**"), Merck shall not be obligated to make milestone payment(s) to NGM with respect to the subsequent achievement by such Back-up Research Program Development Candidate of any milestone event that was previously achieved (and for which the applicable milestone payment was made to NGM) by the relevant failed Research Program Development Candidate; provided, further, that no additional milestone payments shall become due under this Section 9.5.1 with respect to any Research Program Development Candidate following NGM's election (if any) to exercise its NGM ANS Option under ARTICLE 7:

Milestone Event	**Milestone Payment**		
	First Indication	**Second Indication**	**Third Indication**
Upon first completion of a POC Trial for a CVM Research Program Development Candidate	$10,000,000	N/A	N/A
Upon first completion of a POC Trial for a [***] Research Program Development Candidate	$10,000,000	N/A	N/A

(b) Merck shall pay to NGM the amounts set forth below, which shall be non-refundable and non-creditable, on the first achievement by or on behalf of Merck or any Related Party of each of the following milestone events for each Program Compound (or Product containing or comprising such Program Compound, as applicable) or Small Molecule Collaboration Compound (or Small Molecule Product containing or comprising such Small Molecule Collaboration Compound, as applicable) (each, a "**Milestone Product**"); provided, however, that for any Milestone Product that is advanced following and on account of failure of an earlier Milestone Product (such newly advanced Milestone Product, a "**Back-up Product/Compound**"), Merck shall not be obligated to make milestone payment(s) to NGM with respect to the subsequent achievement by such Back-up Product/Compound of any milestone event that was previously achieved (and for which the applicable milestone payment was made to NGM) by the relevant failed Milestone Product; provided, further, that: (a) the milestone payments under this Section 9.5.1 for a Milestone Product shall be [***] for any [***] that [***]; and (b) no additional milestone payments shall become due under this Section 9.5.1 with respect to any Product following NGM's election (if any) to exercise its NGM ANS Option under ARTICLE 7:

Milestone Event	**Milestone Payment**		
	First Indication	**Second Indication**	**Third Indication**
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]
[***]	[***]	[***]	[***]

9.5.2 *Commercial Milestones*. For each Milestone Product, Merck shall pay to NGM the non-refundable, non-creditable amounts set forth below upon the first occurrence of such Milestone Product achieving each annual aggregate worldwide Net Sales threshold set forth below; provided, however, that: (a) the milestone payments under this Section 9.5.2 shall be [***] for any [***]; and (b) no milestone payments shall be due under this Section 9.5.2 with respect to any Product for which NGM exercised its NGM ANS Option under ARTICLE 7. For clarity, each commercial milestone is payable once per financial threshold per Milestone Product, such that no more than two commercial milestones shall be paid on any Milestone Product.

Aggregate Annual Net Sales of Milestone Product in the Territory in a Calendar Year	**Milestone Payment**
Net Sales of a Milestone Product exceed in a single Calendar Year [***]	[***]
Net Sales of a Milestone Product exceed in a single Calendar Year [***]	[***]

9.5.3 *Notification and Payment Upon Occurrence of Milestone Events*. Merck shall notify NGM in writing within: (i) [***] days following the achievement of each development or regulatory milestone; and (ii) within [***] days following the end of the Calendar Quarter in which any commercial milestone is achieved. All development and regulatory milestone payments will be paid to NGM within [***] days of achievement of such milestone. All commercial milestones will be paid within [***] days following the end of the Calendar Quarter in which any commercial milestone is achieved. If a clinical milestone event is skipped for a particular Milestone Product, such skipped milestone is payable upon achievement of the next clinical milestone event or regulatory milestone event; provided, however, that if such clinical milestone or regulatory milestone is skipped for an Indication because such clinical milestone or regulatory milestone is not required for such Indication due to another Indication of such Milestone Product having achieved such clinical milestone or regulatory milestone, then no such payment for such skipped milestone shall be payable.

9.5.4 *Single Payment Per Compound/Product*. Notwithstanding the foregoing, if a given milestone payment for a given milestone event for an Indication is paid with respect to a given Program Compound or Small Molecule Collaboration Compound, then such milestone payment shall not be payable again with respect to any subsequent achievement of the same milestone event for the same

Indication by a Product or Small Molecule Product containing or comprising such Program Compound or Small Molecule Collaboration Compound, and vice versa.

9.6 Royalties to NGM.

9.6.1 *Royalties Payable to NGM*. Subject to the terms and conditions of this Agreement, Merck shall pay to NGM tiered, non-refundable, non-creditable royalties on each Product, Program Compound (pursuant to Section 9.6.1(f)), Small Molecule Product and Small Molecule Collaboration Compound (pursuant to Section 9.6.1(f)) (each, a "**Royalty Product**"), calculated on a Royalty Product-by- Royalty Product and country-by-country (subject to Section 9.6.1(c)) basis, as set forth in this Section 9.6.1:

(a) Royalty Rates. Subject to Section 9.6.1(b) below, the royalty tiers below shall be on a Royalty Product-by-Royalty Product and country-by-country (subject to Section 9.6.1(c)) basis in those countries where: (i) [***] such Royalty Product is claimed in a Valid Patent Claim in such country; or (ii) such Royalty Product [***]; provided, however, that the following royalty rates shall be [***] for any [***]:

Aggregate Annual Net Sales of a Given Royalty Product in the Territory in a Calendar Year	**Royalty Rate**
The portion of Net Sales less than [***]	[***]
The portion of Net Sales greater than or equal to [***] but less than [***]	[***]
The portion of Net Sales greater than or equal to [***]	[***]

(b) Know-How Royalty. Notwithstanding the provisions of Section 9.6.1(a), in countries where: (i) the manufacture, sale or use of a Royalty Product would not infringe a Valid Patent Claim in such country; and (ii) [***], Merck shall pay royalty rates that shall be set at [***] of the applicable royalty rate determined according to Section 9.6.1(a).

(c) Determination of Royalty Tiers. Royalty tiers pursuant to Section 9.6.1(a) and 9.6.1(b) shall be calculated based on Net Sales of each Royalty Product in those countries in the Territory in which the Royalty Term remains in effect with respect to such Royalty Product and country; provided, however, that, the determination of whether the royalty shall be

calculated under Section 9.6.1(a) or Section 9.6.1(b) shall be determined on a country-by-country basis. For clarity: (i) the allocation within each royalty tier between Section 9.6.1(a) and Section 9.6.1(b) shall be based on the percentage of total Net Sales that qualify for the reduced royalty rate pursuant to Section 9.6.1(b); and (ii) from and after the expiration of the Royalty Term with respect to a given Royalty Product and country, sales of such Royalty Product in such country shall no longer be included in calculating the royalty tiers or royalty payments due hereunder.

(d) Royalty Term. Royalties on each Royalty Product at the rates set forth above shall commence upon the First Commercial Sale of such Royalty Product in a given country and shall continue on a Royalty Product-by-Royalty Product and country-by-country basis until the latest of: (a) the expiration of the last-to-expire Valid Patent Claim in such country with respect to such Royalty Product; (b) [***]; or (c) [***] anniversary of the First Commercial Sale of such Royalty Product in such country (the "**Royalty Term**").

(e) Royalty Conditions. All royalties are subject to the following conditions:

(i) that only one royalty shall be due with respect to the same unit of Royalty Product;

(ii) that no royalties shall be due upon the sale or other transfer among Merck or its Related Parties for resale purposes, but in such cases the royalty shall be due and calculated upon Merck's or its Related Party's Net Sales to the first independent Third Party;

(iii) no royalties shall accrue on the sale or other disposition of Royalty Product by Merck or its Related Parties for use in a Clinical Study; and

(iv) no royalties shall accrue on the disposition of Royalty Product in reasonable quantities by Merck or its Related Parties as samples (promotion or otherwise) or as donations (for example, to non-profit institutions or government agencies for a non-commercial purpose), provided, however, that Merck and its Related Parties do not receive any financial payment for such disposition.

(f) Royalties for Bulk Compound. In those cases in which Merck sells bulk Program Compound or Small Molecule Collaboration Compound, rather

than Product or Small Molecule Product, to Third Parties, and Merck is not being paid on sales of such Products or Small Molecule Products with respect to the applicable bulk Program Compound or Small Molecule Collaboration Compound sold to such Third Party, the royalty obligations of this Section 9.6.1 shall be applicable to Net Sales of such bulk Program Compound or Small Molecule Collaboration Compound, as applicable, and the definition of Net Sales shall apply to such bulk Program Compound and Small Molecule Collaboration Compound *mutatis mutandis*.

(g) Compulsory Licenses. If a compulsory license is granted to a Third Party with respect to Royalty Product in any country in the Territory with a royalty rate lower than the royalty rate provided by Section 9.6.1(a) or Section 9.6.1(b), as applicable, then the royalty rate to be paid by Merck on Net Sales in that country under Section 9.6.1(a) or Section 9.6.1(b) shall be reduced to the rate paid by the compulsory licensee.

(h) Third Party Patent Licenses. In the event that one or more patent licenses from other Third Parties are required by Merck or its Related Parties in order to make, have made, use, offer to sell, sell or import one or more Program Compounds, Products, Small Molecule Collaboration Compounds or Small Molecule Products, as applicable (hereinafter "**Third Party Patent Licenses**"), [***] actually paid under such Third Party Patent Licenses with respect to such Royalty Product by Merck or its Related Parties for a Calendar Quarter shall be creditable over time against the royalty payments due NGM by Merck with respect to the sale of the Royalty Product incorporating such Program Compound or Small Molecule Collaboration Compound (as applicable); provided, however, that in no event shall the royalties paid by Merck to NGM for such Calendar Quarter be reduced to less [***] of the amounts that would be owed pursuant to Section 9.6.1(a) or Section 9.6.1(b), as applicable, in the absence of such credit.

(i) Generic Competition. On a country-by-country and Royalty Product-by- Royalty Product basis, if during a given Calendar Quarter one or more Third Parties is: (a) selling a Generic Bioequivalent Product for such Product or Generic Small Molecule Product for such Small Molecule Product, as applicable, in such country; and (b) such sales of such Generic Bioequivalent Product(s) or Generic Small Molecule Product(s), as applicable, in such country are, in the aggregate (on a unit equivalent basis), greater than [***] of the number of units of such Product or such

Small Molecule Product, as applicable, sold in such country during such period, then, from and after such Calendar Quarter during which clauses (a) and (b) are satisfied, the royalties due for sales of such Product or Small Molecule Product, as applicable, in such country shall be reduced to [***] of the amount that would otherwise have been due under Section 9.6.1(a); provided, however, that such reduction shall not be cumulative with any reductions permitted under Section 9.6.1(h) above. For clarity, [***].

9.7 Royalties to Merck. Subject to Section 4.9.3 and the other terms and conditions of this Agreement and except as set forth in Section 5.8, NGM shall pay to Merck certain non-refundable and non-creditable royalties calculated on a product-by-product and country-by-country basis, as set forth in this Section 9.7. NGM shall pay Merck a quarterly royalty on worldwide Net Sales of any product that incorporates or contains a Refused Candidate or a Non-Qualifying Compound, with [***], in each case (a) and (b), as follows:

Stage of Development	**Royalty Rate**
Refused Candidate or Non-Qualifying Compound prior to [***] such Refused Candidate or Non-Qualifying Compound [***] of such Refused Candidate or Non-Qualifying Compound, as applicable	[***]
Refused Candidate or Non-Qualifying Compound after [***] such Refused Candidate or Non-Qualifying Compound [***] of such Refused Candidate or Non-Qualifying Compound, as applicable	[***]

The royalty-related obligations and rights set forth in Sections 9.7 through Section 9.11, inclusive, shall be applicable to Net Sales of such products containing Refused Candidates or Non-Qualifying Compounds, and the definition of Net Sales shall apply to such products *mutatis mutandis*.

9.8 Reports; Payment of Royalty. During the term of this Agreement following the First Commercial Sale of a Royalty Product, Merck shall furnish to NGM a quarterly written report for each Calendar Quarter showing in reasonable detail, on a Royalty Product-by-Royalty Product basis, the Net Sales of all Royalty Products subject to royalty payments sold by Merck and its Related Parties in the Territory during the reporting period and the royalties payable under this Agreement. Reports shall be due on the [***] day following the close of each Calendar Quarter. Royalties shown to have accrued by each royalty report shall be due and payable on the date such royalty report is due. Merck shall keep complete and accurate records in sufficient detail to enable the royalties payable hereunder to be determined.

9.9 Audits.

9.9.1 Upon the written request of a Party ("**Auditing Party**") and not more than once in each Calendar Year, the other Party ("**Auditee**") shall permit an independent certified public accounting firm of nationally recognized standing selected by the Auditing Party and reasonably acceptable to the Auditee, at the Auditing Party's expense, to have access during normal business hours to such of the books and records of Auditee as may be reasonably necessary to verify the accuracy of the royalty reports, Adjusted Net Sales payments (including any reports or calculations relating to any NGM ANS Option exercised by NGM), or any other amounts payable hereunder for any Calendar Year ending not more than [***] prior to the date of such request. The accounting firm shall provide a written report to the Auditing Party that discloses only information necessary to verify whether the royalty reports or other financial reports furnished by the Auditee or the amount of payments by the Auditee under this Agreement are correct or incorrect, the amount of any discrepancy and basis for the accounting firm's conclusion (if applicable) that there was a discrepancy. No other information shall be provided to NGM.

9.9.2 If such accounting firm correctly identifies a discrepancy made during such period, the appropriate Party shall pay the other Party the amount of the discrepancy within [***] days of the date the Auditing Party delivers to the Auditee such accounting firm's written report so correctly concluding, or as otherwise agreed upon by the Parties. The fees charged by such accounting firm shall be paid by the Auditing Party; provided, however, that, if such audit uncovers an underpayment of amounts by the Auditee that exceeds [***], then the fees of such accounting firm shall be paid by the Auditee.

9.9.3 Merck shall include in each sublicense granted by it pursuant to this Agreement a provision requiring the sublicensee to make reports to Merck, to keep and maintain records of sales made (or any other applicable financial information) pursuant to such sublicense and Merck shall use Commercially Reasonable Efforts to include in each such sublicense the sublicensee's grant of access to such records by NGM's independent accountant to the same extent required of Merck under this Agreement; provided, however, that if Merck cannot obtain such audit rights for NGM, then Merck shall (to the extent permitted under such sublicense) audit such sublicensee upon NGM's reasonable request, and at NGM's sole cost and expense, and Merck shall promptly share such audit results with NGM, including providing a copy of any audit report (subject to any applicable confidentiality provisions).

9.9.4 Upon the expiration of [***] following the end of any Calendar Year, the calculation of royalties or other amounts payable with respect to such Calendar Year shall be binding and conclusive upon an Auditing Party, and the Auditee and its Affiliates (in the case of Merck, its Related Parties) shall be released from any liability or accountability with respect to royalties or other applicable payments for such Calendar Year.

9.9.5 The Auditing Party shall treat all financial information subject to review under this Section 9.9 or under any sublicense agreement in accordance with the confidentiality and non-use provisions of this Agreement, and shall cause its accounting firm to enter into an acceptable confidentiality agreement with the Auditee and/or its Affiliates or Related Parties, as applicable, obligating it to retain all such information in confidence pursuant to such confidentiality agreement.

9.10 Payment Exchange Rate. All payments to be made by Merck to NGM under this Agreement shall be made in United States Dollars by bank wire transfer in immediately available funds to such bank account in the United States as may be designated in writing by NGM from time to time. In the case of sales outside the United States, the rate of exchange to be used in computing the monthly amount of currency equivalent in United States Dollars due NGM shall be made at the monthly rate of exchange utilized by Merck in its worldwide accounting system.

9.11 Taxes.

9.11.1 Each Party shall be solely liable for all income and other taxes (including interest) ("**Taxes**") imposed upon any payments made by the other Party ("**Payer**") to such Party ("**Payee**") under this Agreement ("**Agreement Payments**").

9.11.2 If Law requires the withholding of Taxes, the Payer shall, subject to Section 9.11.3, make such withholding payments and shall subtract the amount thereof from the Agreement Payments. The Payer shall submit to the Payee appropriate proof of payment of the withheld Taxes as well as the official receipts within a reasonable period of time. The Payer shall provide the Payee reasonable assistance in order to allow the Payee to obtain the benefit of any present or future treaty against double taxation which may apply to the Agreement Payments.

9.11.3 The Parties agree that, as of the Original Execution Date, each Payer is not required by the Laws of the US to deduct or withhold taxes on the Agreement Payments. If an incremental withholding or deduction obligation arises as a result of any action by the Payer, including any assignment, sublicense, change of place

of incorporation or failure to comply with Laws or filing or record retention requirements (a "**Withholding Tax Action**"), then the sum payable by the Payer (in respect of which such deduction or withholding is required to be made) shall be increased to the extent necessary to ensure that the Payee receives a sum equal to the sum that it would have received had no such Withholding Tax Action occurred. Otherwise, the sum payable by the Payer (in respect of which such deduction or withholding is required to be made) shall be made to the Payee after deduction of the amount required to be so withheld or deducted.

ARTICLE 10
CONFIDENTIALITY AND PUBLICATION

10.1 **Nondisclosure Obligation**. All Information disclosed by one Party to the other Party hereunder or pursuant to the Prior CDA shall be maintained in confidence by the receiving Party and shall not be disclosed to any Third Party or used for any purpose except as set forth herein without the prior written consent of the disclosing Party, except to the extent that such Information:

10.1.1 is known by the receiving Party at the time of its receipt, and not through a prior disclosure by the disclosing Party, as documented by the receiving Party's business records;

10.1.2 is in the public domain by use and/or publication before its receipt from the disclosing Party, or thereafter enters the public domain through no fault of the receiving Party;

10.1.3 is subsequently disclosed to the receiving Party by a Third Party who may lawfully do so and is not under an obligation of confidentiality to the disclosing Party;

10.1.4 is developed by the receiving Party independently of Information received from the disclosing Party, as documented by the receiving Party's business records;

10.1.5 is disclosed to governmental or other regulatory agencies in order to obtain patents or to gain or maintain approval to conduct clinical trials or to market Products or Small Molecule Products, but such disclosure may be only to the extent reasonably necessary to obtain patents (subject to the applicable provisions of ARTICLE 12) or authorizations;

10.1.6 is deemed necessary by Merck to be disclosed to Related Parties, agent(s), consultant(s) and/or other Third Parties for any and all purposes Merck and its Affiliates deem necessary or advisable in the ordinary course of business in the

exercise and performance of its rights and obligations under and in accordance with this Agreement (including the exercise of licenses granted to Merck hereunder) on the condition that such Third Parties agree to be bound by confidentiality and non-use obligations that substantially are no less stringent than those confidentiality and non-use provisions contained in this Agreement; provided, however, that the term of confidentiality for such Third Parties shall be no less than [***]; or

10.1.7 is deemed necessary by NGM to be disclosed to employees, agent(s) and consultant(s), and/or other Third Parties for any and all purposes NGM and its Affiliates deem necessary or advisable for NGM to conduct the Collaboration, or to exercise and perform its rights and obligations under and in accordance with this Agreement (including the exercise of licenses granted to NGM hereunder) or for NGM's scientific advisory board to perform its ordinary roles and responsibilities on the condition that such Third Parties agree to be bound by confidentiality and non-use obligations that substantially are no less stringent than those confidentiality and non-use provisions contained in this Agreement; provided, however, that the term of confidentiality for such Third Parties shall be no less than [***];

10.1.8 is deemed necessary by a Party [***]; provided, however, that the term of confidentiality for such investor, acquiror, merger partner or other financial partner shall be no less than [***]; or

10.1.9 is deemed necessary by counsel to the receiving Party to be disclosed to such Party's attorneys, independent accountants or financial advisors for the sole purpose of enabling such attorneys, independent accountants or financial advisors to provide advice to the receiving Party, on the condition that such attorneys, independent accountants and financial advisors agree to be bound by the confidentiality and non-use obligations contained in this Agreement; provided, however, that the term of confidentiality for such attorneys, independent accountants and financial advisors shall be no less than [***].

10.1.10 Any combination of features or disclosures shall not be deemed to fall within the foregoing exclusions merely because individual features are published or available to the general public or in the rightful possession of the receiving Party unless the combination itself and principle of operation are published or available to the general public or in the rightful possession of the receiving Party.

10.1.11 If a Party is required by judicial or administrative process to disclose Information that is subject to the non-disclosure provisions of this Section 10.1 or

Section 10.2, such Party shall promptly inform the other Party of the disclosure that is being sought in order to provide the other Party an opportunity to challenge or limit the disclosure obligations. Information that is disclosed by judicial or administrative process shall remain otherwise subject to the confidentiality and non-use provisions of this Section 10.1 and Section 10.2, and the Party disclosing Information pursuant to Law or court order shall take all steps reasonably necessary, including seeking an order of confidentiality, to ensure the continued confidential treatment of such Information.

10.2 Program Compound and Product Specific Information. Without limiting the provisions of Section 10.1, NGM agrees to keep all NGM Know-How and Collaboration Inventions relating solely or primarily to a Program Compound or Product confidential, subject to Section 10.1.2. Such obligation, however, shall not apply to any such NGM Know-How or Collaboration Inventions: (a) to the extent and as of the time, if any, that the Program Compound or Product to which they solely or primarily relate becomes, or upon termination under ARTICLE 13, a Reversion Product; or (b) to the extent relating to any Non-Qualifying Compounds, Non-Qualifying Targets or Refused Candidates.

10.3 Publication. Neither Merck nor NGM may publish or present results of the Collaboration without the prior written consent of the other Party. Each such Party shall provide the non-publishing Party with a copy of the proposed manuscript or presentation that includes results of the Collaboration at least [***] days prior to submission for publication or presentation. If the proposed manuscript or presentation contains information of the non-publishing Party that is subject to the use and nondisclosure restrictions under this ARTICLE 10, the publishing Party agrees to remove such information from the proposed publication or disclosure. Further, if the non-publishing Party believes the publication or disclosure of such results would be unfairly damaging to its ongoing research, Development or commercialization with respect to Program Compounds, Products, Small Molecule Collaboration Compounds or Small Molecule Products (if Merck is the non-publishing Party) or any Refused Candidates, Non-Qualifying Compounds, Non-Qualifying Targets, Reversion Compounds or Reversion Products (if NGM is the non-publishing Party, as of such time as they become such) and the non-publishing Party has a reasonable basis for not publishing or presenting such results, then, upon request of the non-publishing Party, the results shall not be published or presented until the matter is resolved. If the matter cannot be resolved between the Parties by mutual agreement, it shall be resolved in accordance with Section 16.7.

10.4 Use of Names. No Party shall use the name, trademark, trade name or logo of the other Party, its Affiliates or their respective employee(s) in any publicity, promotion, news release or disclosure relating to this Agreement or its subject matter, without the prior express written permission of the other Party, except as may be required by Law or

otherwise expressly permitted in this Agreement; except that where a Party has consented to a specific use of its name, trademark, trade name or logo by the other Party, such other Party shall have the right again to use such name, trademark, trade name or logo for such same specific use, without the consent of the other Party.

10.5 Exceptions to Confidentiality Obligations. A receiving Party may disclose Information of the disclosing Party if the receiving Party obtains the disclosing Party's prior written consent to disclose the identified Information. Moreover, the receiving Party may disclose Information of the disclosing Party solely to the extent required to be disclosed by the receiving Party to comply with applicable Law (including securities laws or regulations and the applicable rules of any public stock exchange) or to defend or prosecute litigation or comply with an order of a court or other government order; provided, however, that the receiving Party notifies the disclosing Party of such order insofar as possible and provides reasonable assistance in obtaining a protective order or confidential treatment preventing or limiting the disclosure and/or requiring that the Information so disclosed be used only for the purposes for which the Law required, or for which the order was issued. For the avoidance of doubt: (i) Merck may disclose NGM's Information as reasonably necessary for making regulatory filings in connection with the Development or Commercialization of Products or Small Molecule Products hereunder; (ii) NGM may disclose Merck's Information as reasonably necessary for making regulatory filings in connection with: (a) the Development or Commercialization of any Reversion Compound or Reversion Product; or (b) the development or commercialization of any Refused Candidate or Non-Qualifying Compound; and (iii) a Party controlling prosecution of any Patent Rights pursuant to this Agreement may disclose the other Party's Information to Patent Offices in connection with such permitted prosecution.

10.6 Confidentiality of Agreement Terms. Each Party agrees not to, and to cause its Affiliates not to, disclose to any Third Party any terms of this Agreement without the prior written consent of the other Party hereto, except each Party and its Affiliates may disclose the terms of this Agreement: (a) to advisors (including financial advisors, attorneys and accountants), actual or potential acquirors or bona fide potential investors, and others on a need to know basis, in each case under appropriate confidentiality provisions substantially equivalent to those in this Agreement; or (b) to the extent necessary to comply with applicable Laws and court orders (including securities laws or regulations and the applicable rules of any public stock exchange).

10.7 Publicity.

10.7.1 *Initial Press Releases*. The Parties have agreed on the contents of a press release regarding this Agreement, which is attached hereto as Schedule 10.7.1, to be issued by NGM promptly after the A&R Effective Date. For clarity, neither Party

shall issue any such press release regarding this Agreement unless the form of such release has been mutually agreed upon by the Parties.

10.7.2 *Further Publicity*.

(a) Investor Information. Each disclosing Party acknowledges that the other Party receiving the disclosing Party's Information hereunder may, from time to time, be required by Law or rule of any stock exchange, such as Forms 8-K, 10-Q and 10-K, including as may be required by Law in connection with an initial public offering (IPO) ("**Required Disclosure**"), to publicly disclose the terms of this Agreement, or significant results or developments regarding any Products, to keep its investors reasonably informed of the achievement of milestones, significant events in the Development of Optioned Products and Commercialization activities and the like, and that such Required Disclosures may pertain to Information of the other Party that is not otherwise permitted to be disclosed under this ARTICLE 10. To the extent Merck discloses to NGM information related to events or circumstances involving the Development or Commercialization of any Product that NGM believes is insufficient to allow it to accurately determine the materiality of such information and whether is constitutes a Required Disclosure, Merck shall consider in good faith NGM's reasonable questions with respect to such event so as to better enable it to assess such materiality.

(b) Public Disclosure Review Procedure. With respect to any Required Disclosure, except for the initial press release described in Section 10.7.1, the receiving Party (the "**Requesting Party**") shall provide the other Party (the "**Reviewing Party**") with a draft of the Content (as defined in the next sentence) of the draft Required Disclosure for review, at least [***] Business Days in advance of the issuance of the filing of the Required Disclosure. The word "**Content**" in this Section 10.7.2(b) means any information relating to the activities contemplated by this Agreement, and does not include any other business information of the Requesting Party or information pertaining to the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995 relating to "forward-looking statements." The Reviewing Party may notify the Requesting Party of any reasonable objections or suggestions that the Reviewing Party may have regarding the Content in the Required Disclosure provided for review under this Section, and the Requesting Party shall reasonably consider any such objections or suggestions that are provided in a timely manner. The principles to be observed with respect to disclosures of information in a

Required Disclosure shall include accuracy, disclosure of factual, rather than speculative information, compliance with applicable Law and regulatory guidance documents, reasonable sensitivity to potential negative reactions of a Regulatory Authority, reasonable sensitivity to commercial information of value to competitors and the need to keep investors informed regarding the Requesting Party's business. The Requesting Party shall use commercially reasonable efforts to adopt the reasonable requests of the Reviewing Party with respect to its Information and the Requesting Party shall remove such Information from the Required Disclosure if such Information is not required to be disclosed by Law. Notwithstanding the foregoing, NGM shall have the right to disclose in a press release the occurrence of the following research and development events arising from the Research Program: (1) achievement of any milestone event set forth in Section 9.5.1; (2) Merck's exercise of a Merck Option; and (3) NGM's exercise of an NGM ANS Option; provided, however, that NGM provides to Merck the Content of any such press release in the manner provided above, and, in the case where such Content does not also constitute a Required Disclosure, Merck approves such Content with respect to the particulars included pertaining to the events in clauses (1), (2) or (3), as applicable.

ARTICLE 11
REPRESENTATIONS AND WARRANTIES

11.1 Representations and Warranties of Each Party. Each Party represents and warrants to the other Party that as of the Original Effective Date, the A&R Effective Date and as of the date that Merck exercises each Merck Option:

11.1.1 it has the full right, power and authority to enter into this Agreement and to perform its obligations hereunder; and

11.1.2 this Agreement has been duly executed by it and is legally binding upon it, enforceable in accordance with its terms and does not conflict with any agreement, instrument or understanding, oral or written, to which it is a party or by which it may be bound, nor violate any material Law of any court, governmental body or administrative or other agency having jurisdiction over it.

11.2 NGM Representations and Warranties. NGM represents and warrants to Merck that, except as set forth in Schedule 11.2, as of the date or dates specifically set forth below with respect to a given subsection under this Section 11.2 (or if no such date or dates is specifically set forth with respect to a given such subsection, as of the Original Execution

Date, as of the A&R Effective Date and as of the date that NGM provides the Data Package for each Merck Option), and solely to the extent that the representations and warranties pertain to the applicable Optioned Compound or Optioned Product for such Merck Option or the intellectual property rights that would be licensed to Merck in connection with the exercise of such Merck Option, in each case subject to the written disclosures provided by NGM to Merck in writing in the Data Package for the applicable Merck Option, provided that, at NGM's request, Merck will enter into a common interest agreement prior to the provision of such Data Package:

11.2.1 to NGM's knowledge, issued patents contained in the NGM Patents exist and are not invalid or unenforceable, in whole or in part;

11.2.2 it has the full right, power and authority to grant the options and licenses granted under this Agreement;

11.2.3 it has not previously assigned, transferred, conveyed or otherwise encumbered its right, title and interest in: (i) the NGM Patents (or in any intellectual property rights that but for such assignment, transfer, conveyance or encumbrance would qualify as NGM Patents); and (ii) as of the date of provision of the applicable Data Package, the quantities of Optioned Compounds and Optioned Products in its or its Affiliate's possession that are the subject of the applicable Merck Option, in each case of (i) and (ii), in any manner that would conflict with the rights granted to Merck hereunder;

11.2.4 as of the date of provision of the applicable Data Package, it and its Affiliates have not previously granted to any Person any right, which is in force as of such date, to (a) manufacture or commercialize any Optioned Compound or Optioned Product that is the subject of the applicable Merck Option, except non-exclusive rights to contract manufacturers or other vendors engaged by NGM or its Affiliate to manufacture such Optioned Compound or Optioned Product, or (b) research or develop any Optioned Compound or Optioned Product that is the subject of the applicable Merck Option, except non-exclusive rights to contract research organizations or other vendors engaged by NGM or its Affiliate to research or develop such Optioned Compound or Optioned Product, in each case of (a) and (b), on NGM's or its Affiliate's behalf.

11.2.5 to NGM's knowledge, it is the sole and exclusive owner of: (i) as of the Original Execution Date and the A&R Effective Date, the NGM Patents in its or its Affiliate's possession; and (ii) as of the date of provision of the applicable Data Package, the NGM Patents and material NGM Know-How that would be licensed in connection with the exercise of such Merck Option, and the quantities of

Optioned Compounds and Optioned Products in its or its Affiliate's possession that are the subject of such Merck Option, in each case of (i) and (ii), all of which are free and clear of any liens, charges and encumbrances, and, no other person, corporate or other private entity, or governmental entity or subdivision thereof, has or shall have any claim of ownership whatsoever (except where NGM Controls the relevant Patent Rights or Know-How through any in-license) with respect to any such NGM Patents, material NGM Know-How, or quantities of Optioned Compounds or Optioned Products;

11.2.6 there are no claims, judgments or settlements against or owed by NGM (or any of its Affiliates), and no pending or (to NGM's knowledge) threatened claims or litigation, relating to: (i) as of the Original Execution Date and the A&R Effective Date, the NGM Patents; or (ii) as of the date of provision of the applicable Data Package, the NGM Patents and material NGM Know-How that would be licensed to Merck in connection with the exercise of such Merck Option, and the Optioned Compounds and Optioned Products that are the subject of such Merck Option;

11.2.7 NGM has: as of the date of provision of the applicable Data Package, disclosed to Merck all material information, in existence and known by NGM or its Affiliates as of such date, regarding the Optioned Compounds and Optioned Products that are the subject of such Merck Option and the NGM Patents and material NGM Know-How that would be licensed to Merck in connection with the exercise of such Merck Option;

11.2.8 NGM has, as of the date of NGM's provision of the Data Package for the applicable Merck Option, disclosed to Merck the existence of any patent opinions in NGM's or its Affiliate's possession (or that NGM or an Affiliate has previously had prepared but that is no longer in its actual possession) related to the Optioned Compounds and Optioned Products that are the subject of such Merck Option and the NGM Patents that claim or cover the composition of matter, manufacture or use of the Optioned Compound or Optioned Product that is the subject of such Merck Option;

11.2.9 as of the Original Execution Date, Exhibit B-1, and as of the A&R Effective Date, Exhibit B-2, sets forth true, correct and complete lists of the NGM Patents and such list contains all application numbers and filing dates, registration numbers and dates, jurisdictions and owners; and (ii) as of the date of NGM's provision of the Data Package for the applicable Merck Option, NGM has provided written lists of all NGM Patents that cover or claim the composition of matter,

manufacture or use of the Optioned Compound or Optioned Product that is the subject of such Merck Option;

11.2.10 to NGM's knowledge, without any particular investigation, as of the date of provision of the applicable Data Package, the making (but not with respect to any particular method of manufacture) and composition of matter of the Optioned Compounds that are the subject of such Merck Option exercise and the applicable POC Compound in the form in which it was administered in the applicable POC Trial, in each case, do not, and will not, interfere with or infringe or misappropriate any Patent Rights, Know-How or other intellectual property rights owned or possessed by any Third Party;

11.2.11 as of the Original Execution Date, the Existing Collaboration Agreements are the only agreements to which NGM (or any of its Affiliates) is a party granting: (i) commercial rights to any antibody, peptide or other large molecule, or small molecule; or (ii) exclusive development rights to any human DNA sequence, RNA sequence, protein or peptide, in each case of clauses (i) and (ii), arising out of, or identified through, NGM's research and development activities;

11.2.12 (a) as of the Original Execution Date, all information and data provided by or on behalf of NGM to Merck on or before the Original Execution Date in contemplation of the Original Agreement and as of the date of provision of the Data Package with respect to the applicable Merck Option, all information and data provided in such Data Package was and is true and accurate and complete in all material respects, and NGM has not failed to disclose any material information or data in its or its Affiliate's possession or otherwise known to it or its Affiliate that would reasonably be expected to cause the information and data that has been disclosed to be misleading in any material respect; and (b) as of the A&R Effective Date, all information and data provided by or on behalf of NGM to Merck on or before the A&R Effective Date in contemplation of the negotiation of this Agreement was and is true and accurate and complete in all material respects, and NGM has not failed to disclose any material information or data in its or its Affiliate's possession or otherwise known to it or its Affiliate that would reasonably be expected to cause the information and data that has been disclosed to be misleading in any material respect;

11.2.13 as of the Original Execution Date, and as of the date of provision of the applicable Data Package, NGM, on a group-wide basis (*i.e.*, taking into account all Affiliates and all Persons with a twenty percent (20%) or greater stake in the voting securities of NGM or its Affiliates) did not generate Brazilian turnover of 75 million reals in its last completed fiscal year;

11.2.14 as of the A&R Effective Date, NGM has disclosed all Collaboration Targets that were identified pursuant to the Original Research Program and Schedules 1.51(b) and 4.5.1, collectively, together with [***], set forth a true and complete list of such Collaboration Targets; and

11.2.15 as of the A&R Effective Date, Schedule 1.51(b) sets forth a true and complete list of all Designated Ophthalmology Collaboration Targets, CVM Collaboration Targets, and Optioned Targets, and Schedule 4.5.1 sets forth a true and complete list of all Non-Qualifying Targets.

11.3 Disclaimer. EACH PARTY HEREBY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES IN CONNECTION WITH THE TRANSACTIONS CONTEMPLATED HEREIN NOT EXPRESSLY MADE IN THIS AGREEMENT TO THE MAXIMUM EXTENT PERMITTED UNDER APPLICABLE LAWS, INCLUDING WITH RESPECT TO THE COMPOUNDS, PRODUCTS, OR ANY TECHNOLOGY OR OTHER INTELLECTUAL PROPERTY LICENSED OR GRANTED UNDER THIS AGREEMENT, INCLUDING ANY WARRANTY OF NON-INFRINGEMENT, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. FOR THE AVOIDANCE OF DOUBT, NOTHING CONTAINED IN THIS SECTION 11.3 SHALL OPERATE TO LIMIT OR INVALIDATE ANY EXPRESS WARRANTY CONTAINED HEREIN.

ARTICLE 12
INTELLECTUAL PROPERTY

12.1 Ownership of Collaboration Technology.

12.1.1 All Collaboration Inventions shall be solely owned by the Party that solely discovered or invented such Collaboration Invention, or jointly owned by the Parties if discovered or invented jointly by NGM and Merck, or their respective Affiliates or Related Parties or Third Parties working on their behalf or on behalf of their Affiliates or Related Parties.

12.1.2 Collaboration Patents shall be solely owned by the Party that solely owns the Collaboration Invention covered or claimed by such Collaboration Patent, or jointly owned by the Parties if the Parties jointly own such covered or claimed Collaboration Invention.

12.1.3 At each meeting of the IP Working Group, the Parties shall each disclose in writing the development, making, conception or reduction to practice of any

Collaboration Invention, whether patentable or not, occurring since the prior such meeting.

12.1.4 As used in this Section 12.1 or other provisions referencing inventorship of the Parties, the terms NGM, Merck, Affiliates and Third Party shall include such party's employees, agents, contractors or any other such persons on such Party's behalf. Inventorship shall be determined according to US patent law for purposes of determining ownership. Each Party shall contractually bind such persons conducting work on their behalf to assign all intellectual property to such Party in accordance with the terms and intent of this Agreement.

12.2 Filing, Prosecution and Maintenance of Patents.

12.2.1 As between the Parties, NGM shall be responsible for preparing, filing, prosecuting and maintaining the NGM Patents and those Collaboration Patents solely owned by NGM ("**NGM Prosecuted Patents**"). [***].

12.2.2 As between the Parties, Merck shall have the sole right, at its sole expense and in its sole discretion, to prepare, file, prosecute and maintain the Merck Patent Rights and Merck Product Patents. As between the Parties, Merck shall have the first right, at its sole expense and in its sole discretion, to prepare, file, prosecute and maintain the Collaboration Patents solely owned by Merck ("**Merck Collaboration Prosecuted Patents**"), except for Merck Tail Period Patents, with respect to which Merck shall have the sole right. If Merck does not elect to file or proposes to abandon any Merck Collaboration Prosecuted Patent (other than a Merck Tail Period Patent), Merck shall notify NGM (at least [***] days prior to any filing or payment due date, or any other due date that requires action in order to avoid loss of rights, in connection with such Merck Collaboration Prosecuted Patent) and NGM shall have the right to continue the prosecution of such Patent Rights at its sole expense. If NGM assumes preparation, filing, prosecution, maintenance and enforcement of any such Patent Rights pursuant to this Section 12.2.2, Merck shall execute such documents and perform such acts, in a timely manner, at NGM's request and Merck's expense, as may be reasonably necessary to permit NGM to assume the preparation, filing, prosecution, maintenance and enforcement of such Patent Rights. Notwithstanding the forgoing, with respect to Collaboration Patents that are jointly owned by the Parties and that primarily claim or cover a Small Molecule Collaboration Compound (as opposed to a Collaboration Compound), Merck shall have the first right to prepare, file, prosecute, maintain and enforce such Patent Rights.

12.2.3 With respect to Collaboration Patents that are jointly owned by the Parties ("**Joint Collaboration Patents**"), NGM shall have the first right to prepare, file, prosecute, maintain and enforce such Patent Rights, which shall be deemed NGM Prosecuted Patents for purposes of Sections 12.2.1 and 12.2.5.

12.2.4 In the case of Merck Collaboration Prosecuted Patents (including Joint Collaboration Patents that are prosecuted by Merck pursuant to Section 12.2.2 but excluding Merck Collaboration Prosecuted Patents that claim or cover a Collaboration Invention conceived or reduced to practice by or on behalf of Merck or its Affiliates or subcontractors, as a result of activities undertaken as part of the Collaboration during the [***] Research Program Tail Period or the CVM Research Program Tail Period (such Merck Collaboration Prosecuted Patents, the "**Merck Tail Period Patents**")), Merck shall give NGM an opportunity to review the text of the patent application before filing, shall implement NGM's reasonable comments with respect thereto and shall supply NGM with a copy of the application as filed, together with notice of its filing date and serial number. Merck shall keep NGM advised of the status of such patent filings and, upon NGM's request, shall provide advance copies of any papers related to the filing, prosecution and maintenance of such patent filings, shall implement NGM's reasonable comments with respect thereto and shall promptly give notice to NGM of the grant, lapse, revocation, surrender, invalidation or abandonment of any such patent filings. If Merck proposes to abandon any Joint Collaboration Patents that Merck initiated prosecution of pursuant to Section 12.2.2, then it shall notify NGM (at least [***] days prior to any filing or payment due date, or any other due date that requires action in order to avoid loss of rights, in connection with such Patent Rights) and NGM shall have the right to continue the preparation, filing, prosecution and maintenance of such Patent Rights, which shall be deemed NGM Prosecuted Patents for purposes of Sections 12.2.1 and 12.2.5. If NGM assumes preparation, filing, prosecution and maintenance of any such Patent Rights pursuant to this Section 12.2.4, then Merck shall execute such documents and perform such acts, in a timely manner, at NGM's request and expense, as may be reasonably necessary to permit NGM to assume the preparation, filing, prosecution and maintenance of such Patent Rights.

12.2.5 In the case of NGM Prosecuted Patents (including any Joint Collaboration Patents) except for [***], NGM shall give Merck an opportunity to review the text of the application before filing, shall implement Merck's reasonable comments with respect thereto and shall supply Merck with a copy of the application as filed, together with notice of its filing date and serial number. NGM shall keep Merck advised of the status of such patent filings and upon

Merck's request, shall provide advance copies of any papers related to the filing, prosecution and maintenance of such patent filings, shall implement Merck's reasonable comments with respect thereto and shall promptly give notice to Merck of the grant, lapse, revocation, surrender, invalidation or abandonment of any such patent filings. If NGM does not elect to file or proposes to abandon any such NGM Prosecuted Patents (including any Joint Patents), then it shall notify Merck (at least [***] days prior to any filing or payment due date, or any other due date that requires action in order to avoid loss of rights, in connection with such Patent Rights) and Merck shall have the right to continue the preparation, filing, prosecution and maintenance of such Patent Rights at its sole expense. If Merck assumes preparation, filing, prosecution and maintenance of any such Patent Rights pursuant to this Section 12.2.5, then NGM shall execute such documents and perform such acts, in a timely manner, at Merck's request and expense, as may be reasonably necessary to permit Merck to assume the preparation, filing, prosecution and maintenance of such Patent Rights.

12.3 Interference, Opposition, Reexamination and Reissue.

12.3.1 Each Party shall, within [***] of learning of such event, inform the other Party of any request for, or filing or declaration of, any interference, derivation proceeding, supplemental examination, post grant review proceeding, inter partes review proceedings, opposition, reissue or reexamination relating to NGM Patents, Collaboration Patents or Merck Collaboration Prosecuted Patents being prosecuted or maintained by such Party pursuant to Section 12.2 (other than Merck Tail Period Patents). Merck and NGM shall thereafter consult and cooperate fully to determine a course of action with respect to any such proceeding. The non-prosecuting Party shall have the right to review and approve any submission to be made in connection with such proceeding.

12.3.2 Each Party shall not initiate any reexamination, derivation proceeding, supplemental examination, post grant review proceeding, inter partes review proceedings, interference or reissue proceeding relating to NGM Patents, Collaboration Patents or Merck Collaboration Prosecuted Patents being prosecuted or maintained by such Party pursuant to Section 12.2 (other than Merck Tail Period Patents), to the extent such proceeding could be reasonably anticipated to have an impact on the license and rights granted under this Agreement, without the prior written consent of the other Party, which consent shall not be unreasonably withheld, conditioned or delayed.

12.3.3 The prosecuting Party shall keep the non-prosecuting Party informed of developments in any such action or proceeding, including, to the extent

permissible by Law, consultation and approval of any settlement, the status of any settlement negotiations and the terms of any offer related thereto. Each Party shall bear the expense of any interference, opposition, re-examination or re-issue proceeding relating to Patent Rights being prosecuted or maintained by such Party pursuant to Section 12.2.

12.4 Enforcement and Defense of Patent Rights.

12.4.1 Each Party shall give the other Party notice, promptly after becoming aware, of any infringement of Collaboration Patents (other than Merck Tail Period Patents) or NGM Patents that claim or cover Products, Program Compounds, Small Molecule Products or Small Molecule Collaboration Compounds (collectively, "**Collaboration Compound Patents**"), where such infringement concerns the manufacture, importation, use, offer for sale or sale of a Program Compound, Product, Small Molecule Collaboration Compound or Small Molecule Product in the Field in the Territory (a "**Licensed Infringement**"). Merck and NGM shall thereafter consult and cooperate fully to determine a course of action, including the commencement of legal action by either or both Merck and NGM, to terminate such Licensed Infringement. However, Merck, upon notice to NGM, shall have the first right to initiate and prosecute such legal action at its own expense and in the name of Merck and, if necessary, NGM, or to control the defense of any declaratory judgment action relating to such Licensed Infringement; provided, however, [***]. Merck shall promptly inform NGM if it elects not to exercise such first right and NGM shall thereafter have the right to either initiate and prosecute such action or to control the defense of such declaratory judgment action in the name of NGM and, if necessary, Merck. Each Party shall have the right to be represented by counsel of its own choice.

12.4.2 In the event that Merck elects not to initiate and prosecute an action with respect to a Licensed Infringement as provided in Section 12.4.1, and NGM elects to do so, the costs of any agreed-upon course of action to terminate such Licensed Infringement, including the costs of any legal action commenced or the defense of any declaratory judgment, shall be borne solely by NGM; provided, however, that [***].

12.4.3 For any action to terminate any Licensed Infringement, in the event that the Party electing to initiate or prosecute such action in accordance with Section 12.4.1 is unable to initiate or prosecute such action solely in its own name, the other Party will join such action voluntarily and will execute and cause its Affiliates and Related Parties to execute all documents necessary for such Party to initiate litigation to prosecute and maintain such action. In connection with any such

action, the Parties will cooperate fully and will provide each other with any information or assistance that either may reasonably request, at the expense of the requesting Party. Each Party shall keep the other informed of developments in any such action or proceeding, including, to the extent permissible by Law, consultation on and approval of any settlement, the status of any settlement negotiations and the terms of any offer related thereto.

12.4.4 Any recovery obtained by either or both Merck and NGM in connection with or as a result of any action to terminate any Licensed Infringement contemplated by this Section 12.4, whether by settlement or otherwise, shall be shared in order as follows:

(a) the Party that initiated and prosecuted the action shall recoup all of its costs and expenses incurred in connection with the action;

(b) the other Party shall then, to the extent possible, recover its costs and expenses incurred in connection with the action; and

(c) the amount of any recovery remaining shall be [***].

12.4.5 Subject to the foregoing provisions of this Section 12.4, as between the Parties, NGM shall have the sole right to take action with respect to any infringement of Patent Rights owned by NGM (including NGM Patents and Collaboration Patents that are not Collaboration Compound Patents), and the first right to take action with respect to Collaboration Patents that are jointly owned by the Parties and are not Collaboration Compound Patents and Merck shall have the sole right to take action with respect to any infringement of Patent Rights owned by Merck (including Merck Tail Period Patents), in each case, that is not a Licensed Infringement.

12.4.6 NGM shall inform Merck of any certification regarding any NGM Patent or Collaboration Patent under which Merck is granted a license under Sections 5.4, and 6.1.1 through 6.1.4, inclusive, that it has received pursuant to either 21 U.S.C. §§355(b)(2)(A)(iv) or (j)(2)(A)(vii)(IV) or its successor provisions or any similar provisions in a country in the Territory other than the US, in each case where the certification pertains to the potential sale of a Product or Small Molecule Product, and shall provide Merck with a copy of such certification within [***] of receipt. NGM's and Merck's rights with respect to the initiation and prosecution of any legal action as a result of such certification or any recovery obtained as a result of such legal action shall be as defined in Sections 12.4.1 through 12.4.4; provided, however, that Merck shall exercise its first right to initiate and prosecute any

action and shall inform NGM of such decision within [***] of receipt of the certification, after which time NGM shall have the right to initiate and prosecute such action. Regardless of which Party has the right to initiate and prosecute such action, both Parties shall, as soon as practicable after receiving notice of such certification, convene and consult with each other regarding the appropriate course of conduct for such action. The non-initiating Party shall have the right to be kept fully informed and participate in decisions regarding the appropriate course of conduct for such action, and the right to join and participate in such action.

12.5 Patent Term Restoration. The Parties shall cooperate with each other, including to provide necessary information and assistance as the other Party may reasonably request, in obtaining patent term restoration or supplemental protection certificates or their equivalents in any country in the Territory where NGM Patents and/or Collaboration Compound Patents exist, to the extent they relate to Program Compounds, Products, Small Molecule Collaboration Compounds or Small Molecule Products, as the case may be. In the event that elections with respect to obtaining such patent term restoration or supplemental protection certificates or their equivalents in any country in the Territory are to be made, Merck shall have the right to make the election with respect to NGM Patents and/or Collaboration Compound Patents that solely relate to Program Compounds, Products, Small Molecule Collaboration Compounds or Small Molecule Products. Subject to Merck's rights in the previous sentence, each Party shall have the right to make the election with respect to other Patent Rights owned by such Party. In each case, the other Party agrees to abide by such election.

12.6 Biosimilar or Interchangeable Biological Products. Notwithstanding anything herein to the contrary, within [***] after the receipt of Marketing Authorization of a Product or Small Molecule Product that has been licensed in the US as a biological product under 42 U.S.C. 262(a) (or successor laws or regulations), and as may be amended from time to time thereafter, the Parties shall consult as to potential strategies with respect to unexpired US Patent Rights Controlled by either Party and that claim or cover the Product or Small Molecule Product. Specifically, in anticipation of a receipt by the Party who is the reference product sponsor of the Product or Small Molecule Product ("**Reference Product Sponsor**") of a biosimilar or interchangeable product application filed by a subsection (k) applicant pursuant to the Biologics Price Competition and Innovation Act of 2009 (Public Law 111-148) (or successor laws or regulations), the Parties will discuss the Reference Product Sponsor's likely course of action with regard to each such US Patent Right in the procedural steps set forth under 42 USC §262(l) (or successor laws or regulations), including a general plan for timely communication between the Parties in light of the statutory response deadlines.

12.7 Joint Research Agreements. The Parties agree to cooperate and to take reasonable actions to maximize the protections available under the safe harbor provisions of 35 U.S.C. 102(c) for US Patent Rights.

ARTICLE 13
TERM AND TERMINATION

13.1 Term and Expiration. This Agreement shall be effective as of the A&R Effective Date and unless terminated earlier pursuant to Sections 13.2 or 13.4, this Agreement shall continue in full force and effect, on a Product-by-Product or Small Molecule Product-by-Small Molecule Product, as applicable, basis until expiration of the Royalty Term (for those Products and Small Molecule Products that are not NGM Optioned Products) or until Merck ceases to receive any Adjusted Net Sales (for NGM Optioned Products) hereunder with respect to such Product or Small Molecule Product (the "**Term**"). This Agreement has been executed by the Parties as of the A&R Effective Date, with the Parties' mutual intent that on the A&R Effective Date, the Original Agreement shall be amended and restated in its entirety as set forth in, and thereupon superseded by, this Agreement. For clarity, the terms and conditions of the Original Agreement apply to the period between the Original Execution Date and the A&R Effective Date. The Term shall expire on the date this Agreement has expired in its entirety with respect to all Products and Small Molecule Products in the Territory. Upon expiration of this Agreement on a Product-by-Product or Small Molecule Product-by-Small Molecule Product (but not as to any NGM Optioned Product), as applicable, basis, Merck's licenses pursuant to Sections 5.4, or 6.1.1 through 6.1.4, inclusive, as applicable to such Product or Small Molecule Product, shall become a fully paid-up, perpetual and irrevocable license.

13.2 Unilateral Termination by Merck.

13.2.1 *No Early Termination of Research Program for Convenience.* Without limiting Section 13.3, Merck shall not have the right to terminate early the Research Program for convenience; it being understood that Merck shall not be obligated to extend the Research Program beyond the Initial Research Program Term.

13.2.2 *[Reserved]*.

13.2.3 *Termination of Small Molecule Collaboration Program Only*. Notwithstanding anything contained herein to the contrary, Merck shall have the right at any time to terminate this Agreement solely with respect to any given Small Molecule Product by giving [***] days' advance written notice to NGM. Any such

termination shall not result in termination of the Research Program or any other Small Molecule Product.

13.2.4 *Termination of Optioned Products*. Merck shall have the right to terminate this Agreement with respect to all Optioned Compounds and Optioned Products associated with each particular Merck Option exercise (with or without cause) at any [***], by giving: (i) [***] advance written notice to NGM where all such terminated Optioned Products are not NGM Optioned Products; and (ii) [***] advance written notice to NGM where any such Optioned Product is an NGM Optioned Product, in each case, which notice will indicate whether the termination is the result of a Safety Issue; provided, however, that, in the event that Merck indicates that such termination is the result of a Safety Issue, Section 13.7 shall apply.

13.2.5 *Termination of Agreement in its Entirety*. At any time following expiration or termination (as provided for in this ARTICLE 13) of the Research Program Term and Tail Period, if any, Merck shall have the right to terminate this Agreement in its entirety (with or without cause) at any time other than during the conduct of a Clinical Study with respect to any Program Compound or Product (except that Merck may terminate this Agreement in its entirety during the conduct of a Clinical Study if a Safety Issue arises during such study), by giving: (i) [***] advance written notice to NGM when no Optioned Product exists as of such time, or there is no NGM Optioned Product as of such time; and (ii) [***] advance written notice to NGM when there is one or more NGM Optioned Products existing as of such time, in each case, which notice will indicate whether the termination of this Agreement with respect to any given Optioned Product is the result of a Safety Issue; provided, that, in the event that Merck indicates that there exists a Safety Issue with respect to a particular Optioned Product terminated as a result of such termination in the entirety, Section 13.7 shall apply.

13.3 **Termination of Optioned Products or Small Molecule Products by Merck for Cause**. Merck shall have the right to terminate this Agreement solely with respect to a given Optioned Product or Small Molecule Product at any time during the Term of this Agreement upon written notice if NGM is in material breach of its obligations hereunder with respect to such Optioned Product or Small Molecule Product, as applicable, and has not cured such breach within [***] after notice requesting cure of the breach; provided, however, in the event of a good faith dispute with respect to the existence of such a material breach relating to such Optioned Product or Small Molecule Product, as applicable, the [***] cure period shall be tolled until such time as the dispute is resolved pursuant to Section 16.7. For clarity, this Agreement shall remain in full force and effect with respect to any subject matter that is not the subject of such termination.

13.4 Early Termination of Research Program by Merck. Notwithstanding anything contained herein to the contrary, Merck shall have the right to terminate the Research Program solely in the following events:

13.4.1 *Change of Control.* Upon [***] advance written notice to NGM, in the event of a Change of Control of NGM pursuant to Section 14.1; or

13.4.2 *Principal Investigator.* In the event Dr. Jin-Long Chen ceases to direct research at NGM, but only as and to the extent set forth in Section 4.6 during the Initial Research Program Term; or

13.4.3 *Breach.* In the event NGM is in breach of its material obligations [***] with respect to the Research Program, and has not cured such breach within [***] after delivery to NGM of a notice of such material breach, and requesting cure of the breach; provided, however, in the event of a good faith dispute with respect to the existence of such a material breach, the [***] cure period shall be tolled until such time as the dispute is resolved pursuant to Section 16.7.

13.5 **Termination of Optioned Products or Small Molecule Products by NGM for Cause**. NGM shall have the right to terminate this Agreement solely with respect to a given Optioned Product or Small Molecule Product at any time during the Term of this Agreement, other than during the conduct of a Clinical Study with respect to such Optioned Product or Small Molecule Product, upon written notice if Merck is in material breach of its obligations hereunder with respect to such Optioned Product or Small Molecule Product, as applicable, and has not cured such breach within [***] after notice requesting cure of the breach; provided, however, in the event of a good faith dispute with respect to the existence of such a material breach relating to such Optioned Product or Small Molecule Product, as applicable, the [***] cure period shall be tolled until such time as the dispute is resolved pursuant to Section 16.7. For clarity, this Agreement shall remain in full force and effect with respect to any subject matter that is not the subject of such termination.

13.6 **Effect of Termination**. The Parties acknowledge and agree that to the extent this Agreement is only terminated with respect to a given program, compound, product and/or target, then the following effects of termination, as applicable, shall only apply with respect to such program, compound, product and/or target, as is the subject of such termination.

13.6.1 *Effect of Termination by Merck pursuant to Sections 13.3 (for NGM's breach).* The following provisions shall apply if Merck terminates for NGM's uncured material breach pursuant to Section 13.3. For clarity, the following provisions do

not limit, and may be effective in conjunction with, Sections 13.6.6(c), (d) and (e), in the event that the Research Program is terminated in accordance with Section 13.4.3.

(a) *[Reserved]*.

(b) All licenses and rights granted by Merck to NGM hereunder with respect to the terminated Optioned Product or Small Molecule Product, as applicable, will terminate and such licenses and rights shall revert to Merck and NGM and its Affiliates and sublicensees shall have no further rights to use any Merck IP with respect thereto or to exercise any further NGM ANS Option with respect to the terminated Products, and any terminated Products or Small Molecule Products would be subject to the milestones and royalties set forth in ARTICLE 9, unless prior to such termination, NGM exercised an NGM ANS Option with respect to such terminated Product. For clarity, in the event that NGM has exercised one or more NGM ANS Options with respect to the terminated Products prior to the time of termination, such NGM ANS Options shall remain in effect; provided, however, that if NGM has also exercised any Co-Detailing Options with respect to the terminated NGM Optioned Products prior to the time of such termination, all such Co-Detailing Options shall be deemed terminated and of no further force or effect and NGM shall no longer have any right to Co-Detail any terminated NGM Optioned Product(s).

(c) Sections 5.4, and 6.1.1 through 6.1.4, inclusive, shall survive and all other provisions of this Agreement applicable to such licenses, including Merck's payment obligations to NGM therefor, and any Collaboration Compounds or Products and Patent Rights related thereto shall survive; provided, however, that the JEDDC or JLDDC, as applicable, shall no longer have within its purview any, Optioned Product (as to which such termination applies) or Small Molecule Product (as to which such termination applies), as the case may be, depending upon which is being terminated, and Merck would not have any further reporting obligations with respect thereto to NGM except for: (i) applicable royalty reports, if any; and (ii) applicable reports pertaining to NGM Optioned Products.

(d) NGM shall, within [***] after the effective date of such termination of an Optioned Product or a Small Molecule Product, as the case may be, return or cause to be returned to Merck all Information disclosed by Merck in tangible form, and all substances or compositions delivered or provided by

Merck as well as any other material provided by Merck in any medium, in each case, related thereto.

13.6.2 *Effect of Termination by Merck pursuant to Section 13.2.5 (for convenience, Agreement in its entirety) or by NGM pursuant to Section 13.5 (for Merck's breach)*. The following provisions shall apply if Merck terminates this Agreement in its entirety for convenience pursuant to Section 13.2.5, or if NGM terminates this Agreement with respect to an Optioned Product or Small Molecule Product for Merck's uncured material breach pursuant to Section 13.5; provided, however, that, in the event of any such termination of this Agreement in its entirety or by NGM pursuant to Section 13.5, Section 13.6.4 shall control with respect to any Small Molecule Collaboration Compounds and Small Molecule Products that are included in the subject of such termination.

(a) Where such termination occurs [***], in accordance with accepted pharmaceutical industry norms and ethical practices, of any then on-going Clinical Studies with respect to the Product subject to such termination, and the terms of Section 13.7 shall apply.

(b) All licenses and rights granted by NGM to Merck under this Agreement with respect to such terminated Optioned Product(s) will terminate and such licenses and rights shall revert to NGM (except for those licenses and rights, if any, that expressly survive any such termination hereunder, including those necessary for Merck to perform its obligations under this Section 13.6.2).

(c) Merck shall [***] with respect to the applicable Reversion Compounds and Reversion Products or Optioned Product(s), as the case may be: [***], it being agreed and understood that Merck retains all rights [***]. Notwithstanding anything in Section 1.138 or this Section 13.6.2(c) to the contrary, to the extent that [***], Merck will notify NGM (which notice shall identify [***] and set forth the terms and conditions [***] and, at NGM's request, will use reasonable efforts [***]. If Merck is unable to obtain such [***], Merck will [***]. Any such efforts by Merck done solely to [***] shall not be deemed to be a breach by Merck of its obligations hereunder. Inability of Merck [***] to be excluded from [***]. In partial consideration for [***], NGM shall pay to Merck: (1) [***] for such Reversion Compound or Reversion Product if, as of the effective date of such termination with respect thereto, [***] with respect to such Reversion Compound or Reversion Product, [***] if such Reversion Compound or Reversion Product [***], and [***] or [***]; and

(2) [***] for such Reversion Compound or Reversion Product if, as of the effective date of such termination with respect thereto, [***] with respect to such Reversion Compound or Reversion Product, [***], and [***].

(d) Merck shall transfer and assign to NGM or its designee (to the extent assignable and in accordance with Laws, and if not assignable, then Merck shall permit NGM or its designee to access in accordance with Laws) all of the then existing (as of the date of notice of termination) INDs, NDAs and Marketing Authorizations (if any) (together with a copy of all material documents submitted to the applicable Regulatory Authority in connection therewith for the Reversion Products), in each case, that are owned by and in the possession of Merck or its Affiliates and that relate solely and exclusively to the Reversion Compound and/or Reversion Product, as applicable; provided, however, that NGM shall execute a letter releasing Merck and its Affiliates of all liabilities arising after the effective date of such assignment arising from the developing, using, manufacturing (including making and having made) and/or commercializing (including selling, offering for sale, importing and exporting) of the Reversion Compound and/or Reversion Product; provided, further, that NGM demonstrates that it holds, and will execute a letter, agreeing to continue to hold during the time it researches, develops and commercializes, and [***] thereafter, product liability insurance that is adequate to cover (and is consistent with normal business practices of prudent companies similarly situated) any product liability arising from such Reversion Compound and/or Reversion Product, as applicable. For the purposes of this Section 13.6.2(d) and Section 13.6.2(e) Marketing Authorizations shall exclude pricing approval and government reimbursement approvals.

(e) Notwithstanding the foregoing provisions of this Section 13.6.2, all of the foregoing (including any INDs, NDAs and other Marketing Authorizations, if any) provided by Merck pursuant to this Section 13.6.2 shall be provided on a one-time basis and on an "as is" basis (without any representations and warranties) and shall only be provided as they exist as of the effective date of termination.

(f) Merck shall deliver to NGM copies of, or otherwise make available to NGM, all clinical data and adverse event reports (including all such adverse event reports contained in Merck's or its Affiliates' regulatory and/or safety databases) owned by Merck or its Affiliates, which is in Merck's or its Affiliates' possession (and in the same form in which Merck or its Affiliates maintains such data or reports, as applicable), in

each case, relating to the Reversion Compounds or Reversion Products and reasonably necessary for NGM to continue to conduct the research, development and/or commercialization of the Reversion Compounds and Reversion Products, as applicable.

(g) Merck shall deliver to NGM, in the same form in which Merck maintains such items, copies of the material regulatory correspondence generated hereunder and owned by Merck or its Affiliates, which is in Merck's or its Affiliates' possession relating to the pre-clinical or clinical development of the Reversion Compounds or Reversion Products, as applicable.

(h) Subject to Section 13.6.2(k), Merck shall, at NGM's request, deliver to NGM all inventory (if any, and to the extent applicable) of GMP and non-GMP Reversion Products and bulk Reversion Compounds on an "as is" basis (without any representations and warranties) in the forms currently residing, as of such notice of termination, in Merck's inventory, in each case owned by Merck (or its Affiliate) and that is in Merck's (or its Affiliates) possession or control. In connection therewith, NGM shall pay to Merck, within [***] after invoice therefor, an amount equal to Merck's (or its Affiliate's, as applicable) fully allocated costs of goods sold for such inventory [***]; provided, however, that NGM covenants that it shall not use any bulk non-GMP Reversion Product and/or non-GMP Reversion Compound in humans for any purpose, and provided, further, that NGM shall execute a letter releasing Merck from, and indemnifying Merck from and against, all liabilities arising from the use, sale or import of such transferred inventory of Reversion Product and/or Reversion Compound.

(i) To the extent Reversion Compounds or Reversion Products, as applicable, were being manufactured by Merck (or its Affiliate) as of the time of termination, [***]. [***] shall include, at NGM's request, the provision to NGM or its designee [***] Reversion Product or Reversion Compound (as applicable), until the earlier of: (i) [***]; or (ii) [***] after the termination effective date. Such [***] during the first [***] after the termination effective date. NGM shall have the right to sublicense the license under Section 13.6.2(c) to a manufacturer designated by NGM and reasonably acceptable to Merck with respect to the right to make and have made the Reversion Product and/or Reversion Compound for the purpose of NGM exercising the license granted to NGM under Section 13.6.2(c) and Merck shall promptly thereafter [***] and shall execute such additional documents as is reasonably necessary to effectuate the intent of the foregoing Section 13.6.2(i).

(j) No later than [***] days after the effective date of such termination of this Agreement under Section 13.2.5 or Section 13.5, as applicable, each Party shall return or cause to be returned to the other Party all Information in tangible form received from the other Party and all copies thereof related to such terminated Optioned Product; provided, however, that each Party may retain any Information reasonably necessary or useful for such Party's continued practice under any license(s) that survive or are granted upon such termination, and may keep one copy of Information received from the other Party in its confidential files for record purposes.

(k) Notwithstanding the foregoing provisions of this Section 13.6.2, if Merck (or any of its Affiliates, sublicensees or distributors) is selling terminated Products as of the time of such termination of this Agreement, then the licenses set forth in Section 5.4 shall not terminate, but shall become non-exclusive and survive for a period of [***] in order for Merck and its Affiliates, sublicensees and distributors, at their discretion, during the [***] period immediately following the effective date of termination, to sell any terminated Products remaining in inventory (including to finish and sell any work-in-progress of such Products) in accordance with the terms of this Agreement (including amounts payable by Merck to NGM pursuant to ARTICLE 9), in each case utilizing such licenses.

(l) Merck shall assign all Product-specific trademarks used during the Term by Merck and its Related Parties solely and exclusively in connection with the sale or marketing of the Reversion Products or Reversion Compounds subject to such termination (the "**Reversion Trademarks**"), to NGM for use in connection with the sale or marketing of Reversion Products and Reversion Compounds in the Field in the Territory, effective as of the effective date of such termination of this Agreement; provided, however, that NGM may at its option reject such assignment in whole or in part. The Reversion Trademarks shall not include rights to any trade name, trademark or trade dress of Merck or any of its Affiliates; provided, further, that NGM shall and hereby does grant Merck the right to use the Reversion Trademarks for its activities permitted in Section 13.6.2(k), for the six (6) month period referred to in Section 13.6.2(k).

(m) Notwithstanding the foregoing, Merck's [***] under Sections 13.6.2(d) through (i), inclusive, shall pertain only to those Reversion Compounds that have progressed to the stage of IND filing or later, as of the effective date of such termination.

13.6.3 *[Reserved]*.

13.6.4 *Effect of Termination by NGM pursuant to Section 13.5 (Merck breach) or by Merck pursuant to Section 13.2.3 or 13.2.5 (convenience) as such Termination Applies to Small Molecule Products*. The following provisions shall apply if: (i) Merck terminates this Agreement with respect to a given Small Molecule Product pursuant to Section 13.2.3 for convenience, or Merck terminates this Agreement in its entirety for convenience pursuant to Section 13.2.5; or (ii) NGM terminates a Small Molecule Product pursuant to Section 13.5 for Merck's uncured material breach.

(a) Merck [***], in accordance with accepted pharmaceutical industry norms and ethical practices, of any then on-going Clinical Studies with respect to such terminated Small Molecule Product.

(b) All licenses and rights granted by NGM to Merck hereunder with respect to such Small Molecule Product will terminate and such licenses and rights shall revert to NGM.

(c) Notwithstanding the foregoing provisions of this Section 13.6.4, if Merck (or any of its Affiliates, sublicensees or distributors) is selling terminated Small Molecule Products as of the time of such termination of this Agreement, then the licenses set forth in Sections 6.1.2 through 6.1.4, inclusive, shall not terminate, but shall become non-exclusive and survive for a period of [***] in order for Merck and its Affiliates, sublicensees and distributors, at their discretion, during the [***] period immediately following the effective date of termination, to sell any terminated Small Molecule Products remaining in inventory (including to finish and sell any work-in-progress of such Small Molecule Products) in accordance with the terms of this Agreement (including amounts payable by Merck to NGM pursuant to ARTICLE 9), in each case utilizing such licenses.

(d) For the avoidance of doubt, upon such termination of such Small Molecule Product, Merck shall retain all rights to and interest in the Small Molecule Products.

13.6.5 *Effect of Termination Regarding Optioned Products by Merck pursuant to Section 13.2.4*. The following provisions shall apply if Merck terminates this Agreement for convenience with respect to all Optioned Compounds and Optioned Products associated with a particular Merck Option pursuant to Section 13.2.4.

(a) Where such termination occurs [***], in accordance with accepted pharmaceutical industry norms and ethical practices, of any such on-going Clinical Study with respect to such terminated Optioned Product. For clarity, other than termination in connection with a Safety Issue, Merck does not have the right to terminate this Agreement under Section 13.2.4 while a Clinical Study is on-going.

(b) All licenses and rights granted by NGM to Merck hereunder with respect to such terminated Optioned Product(s) will terminate and such licenses and rights shall revert to NGM (except for those licenses and rights that expressly survive any such termination hereunder).

(c) The terms and conditions of (including each Party's rights and obligations under) Sections 13.6.2(c) – (i), inclusive, and (k), (l) and (m) shall apply to all terminated Optioned Compounds and all terminated Optioned Product(s) that are Reversion Products, *mutatis mutandis*.

13.6.6 *Effect of Termination of Research Program by Merck pursuant to Section 13.4*. The following provisions shall apply if Merck terminates early the Research Program pursuant to Section 13.4.

(a) In the event of termination by Merck following the occurrence of a Significant Event under Section 13.4.2: subject to Merck undertaking Early Development activities pursuant to Section 4.1.8, NGM shall continue to conduct all then-ongoing activities that are in Early Development with respect to all Collaboration Compounds, to the extent Merck elects to continue funding the same; and if Merck so elects to continue such funding, upon completion of the first POC Trial with respect to each such Collaboration Compound, the Merck Option rights, and obligations, under ARTICLE 5 would remain in effect, including all associated payment obligations with respect to the POC Compound and its Related Compounds, or, if Merck does not so elect to continue such funding (or if Merck elects to continue such funding but does not actually fund such activities), then, at its expense, and at its election, NGM shall be responsible for the conduct of any or all of such ongoing Clinical Studies under the Research Program, in which event Merck shall have no further rights, and no Merck Option shall exist, with respect to such Collaboration Compounds, which shall become Non-Qualifying Compounds. To the extent then-ongoing, all research activities that are not Early Development activities under the Research Program shall terminate effective upon such effective date of termination, and Merck shall have no obligation to pay

for any External Costs or work performed by the NGM FTEs with respect to the Research Program after the effective date of such termination including the Research Funding for the Research Program after such date with respect thereto, and the licenses and rights granted by Merck to NGM in Section 4.1.9(a) will terminate and such licenses and rights shall revert to Merck and NGM and its Affiliates and sublicensees shall have no further rights to use any such Merck IP as contemplated by Section 4.1.9(a), except to the extent needed to conduct the activities set forth above in this Section 13.6.6(a).

(b) In the case of termination by Merck under Section 13.4.1 (NGM Change of Control): NGM shall be responsible, at Merck's expense and subject to subsection (g) below, upon Merck's election in writing, for transitioning any Clinical Studies then-being conducted under any Early Development activities under the Research Program to Merck or its designee, in which event the terms and conditions (including each Party's rights and obligations) of Sections 13.6.2(d) through 13.6.2(i), inclusive, shall apply to all such Development Candidates, *mutatis mutandis*, subject only to transfers and the like being provided by NGM to Merck (and not by Merck to NGM), or, where Merck does not so elect to have transitioned to it any such Clinical Studies, NGM shall be responsible for an orderly wind-down, in accordance with accepted pharmaceutical industry norms and ethical practices, of any such Clinical Studies or continuing any such Clinical Studies, at its own expense. Where Merck assumes the conduct of such Clinical Studies, upon completion of the first POC Trial with respect to any POC Compound, the Merck Option would remain in effect and be exercisable as set forth in ARTICLE 5, as though NGM had conducted such POC Trial, except that no Data Package shall be due from NGM with respect to such POC Trial, and Merck shall be required to exercise the Merck Option in the same timeframe as provided in Section 5.3.1, with such [***] period commencing once Merck has available to it the same information as would have been contained in the Data Package for such POC Compound. In addition, to the extent then-ongoing, all research activities that are not Clinical Studies under the Research Program shall terminate, effective upon such effective date of termination, unless Merck elects to proceed to effect a transfer of certain program activities pursuant to Section 14.2.1, and in any event Merck shall have no obligation to pay for any External Costs or such work performed by the NGM FTEs with respect to the Research Program after the effective date of such termination including the Research Funding for

the Research Program after such date with respect thereto, and the licenses and rights granted by Merck to NGM in Section 4.1.9(a) will terminate and such licenses and rights shall revert to Merck and NGM and its Affiliates and sublicensees shall have no further rights to use any such Merck IP as contemplated by Section 4.1.9(a), except to the extent needed to conduct the activities set forth above in this Section 13.6.6(b).

(c) In the case of termination by Merck under Section 13.4.3 (NGM breach), to the extent then-ongoing, the Research Program shall terminate effective upon such effective date of termination, and Merck shall have no obligation to pay for any External Costs or work performed by the NGM FTEs with respect to the Research Program after the effective date of such termination including the Research Funding for the Research Program after such date and the licenses and rights granted by Merck to NGM in Section 4.1.9(a) will terminate and such licenses and rights shall revert to Merck and NGM and its Affiliates and sublicensees shall have no further rights to use any such Merck IP as contemplated by Section 4.1.9(a). In addition, NGM shall be responsible at its own expense, upon Merck's election in writing and subject to subsection (g) below, for transitioning any Clinical Studies then-being conducted under any Early Development activities under the Research Program to Merck or its designee, in which event the terms and conditions (including each Party's rights and obligations) of Sections 13.6.2(b) through (i), inclusive, shall apply to all such Development Candidates, *mutatis mutandis*, subject only to transfer and the like being provided by NGM to Merck (and not by Merck to NGM) or, (2) where Merck does not so elect to have transitioned to it any such Clinical Studies, NGM shall be responsible for an orderly wind-down, in accordance with accepted pharmaceutical industry norms and ethical practices, of any such Clinical Studies or continuing any such Clinical Studies, at its own expense. Where Merck assumes such Clinical Studies, upon completion of the first POC Trial with respect to any POC Compound, the Merck Option would remain in effect and be exercisable as set forth in ARTICLE 5 as though NGM had conducted such POC Trial, except that no Data Package shall be due from NGM with respect to such POC Trial, and Merck shall be required to exercise the Merck Option in the same timeframe as provided in Section 5.3.1, with such [***] period commencing once Merck has available to it the same information as would have been contained in the Data Package for such POC Compound, but NGM would no longer have available to it the NGM ANS Option with

respect to such POC Compounds and they would be subject to the milestones and royalties set forth in ARTICLE 9.

(d) Any Merck Options then-pending as of the effective date of any such termination (*i.e.*, after delivery of Data Package) would remain in effect for the length of the Option Period.

(e) NGM hereby grants to Merck a non-exclusive, royalty-free license, under any and all Patent Rights and Know-How that are Controlled by NGM or any of its Affiliates (subject to Section 14.3), solely for Merck to conduct such activities as may be undertaken by it pursuant to Section 13.6.6(a), (b) or (c), as applicable. Merck may grant sublicenses of the license set forth in this Section 13.6.6(e) to Third Parties who are acting on Merck's behalf in the conduct of such activities; provided, however, that: (A) each such sublicense is in writing and is consistent with the applicable terms of this Agreement; (B) each such sublicense terminates upon the termination of this Agreement; and (C) each sublicense solely permits the use of such sublicensed Patent Rights and Know-How within the scope of the license granted by NGM pursuant to this Section 13.6.6(e). For the avoidance of doubt: (i) the license set forth in this Section 13.6.6(e) does not include any right to sell products to Third Parties; and (ii) Merck may not use the NGM intellectual property rights licensed under this Section 13.6.6(e) other than to perform the activities as may be undertaken by it pursuant to Section 13.6.6(a), (b) or (c), as applicable.

(f) All licenses then granted to Merck under Section 5.4 to Optioned Compounds and Optioned Products, under Section 6.1 with respect to Small Molecule Collaboration Compounds and Small Molecule Products, and under Section 14.2.1, to the extent applicable, shall survive and continue unaffected under this Agreement.

(g) In the event that Merck has elected to assume the conduct of Clinical Studies under either Section 13.6.6(b) or (c) above, but terminates Development of the applicable Collaboration Compounds prior to completion of the first POC Trial, such Collaboration Compounds shall become Non-Qualifying Compounds.

13.6.7 *Survival.* Subject to the remainder of this Section 13.6.7, all rights and obligations of the Parties hereunder shall terminate as of the date of expiration or termination of this Agreement, but such expiration or termination shall not relieve the Parties of any obligation accruing upon or prior to such termination. Any

expiration or termination of this Agreement shall be without prejudice to the rights of either Party against the other accrued or accruing under this Agreement upon or prior to termination. The provisions of ARTICLE 1 (to the extent necessary to give meaning to other surviving provisions), ARTICLE 9 (with respect to Merck, those payments accrued before the date of expiration or termination, and with respect to NGM, those payments due under Section 9.7), ARTICLE 10 (for a period of [***] from the effective date of such expiration or termination), ARTICLE 15 and ARTICLE 16 and Sections 3.2, 4.2.5 (for a period of [***] from the effective date of such expiration or termination), 4.5, 4.9.3, 5.3.2, 5.6 (to the extent applicable), 5.7 (subject to NGM's payment of amounts due under and in accordance with Section 9.7), 8.5, 11.3, 12.1.1, 12.1.2, 12.1.4 (second sentence only), 12.2.3, 12.2.4 (only with respect to Joint Collaboration Patents), 12.2.5 (only with respect to Joint Collaboration Patents), 13.1 (last sentence only), 13.6 (to the extent applicable and subject to the final sentence of this Section 13.6.7), and 14.4.1(b) shall survive the expiration or termination of this Agreement, and all definitions relating to the foregoing, shall survive any termination of this Agreement. Without limiting the foregoing, promptly following any termination or expiration of this Agreement with respect to the Research Program, NGM shall pay to Merck any advanced Research Funding that is not used as of the effective date of such expiration or termination. For clarity, to the extent this Agreement is only terminated with respect to a given program, compound, product and/or target, then the foregoing Section 13.6.7 (including the surviving rights and obligations, including particular Articles or Sections of this Agreement, that survive a given termination, as applicable) shall only apply with respect to such program, compound, product and/or target as is the subject of such termination.

13.6.8 *Effect on Advanced Amounts of Termination by Merck for NGM Breach.* Only in the event that Merck terminates this Agreement pursuant to Section 13.3 for uncured material breach by NGM with respect a particular NGM Optioned Product and as of the time of such termination, there exist no other NGM Optioned Products then notwithstanding Section 7.5.2, NGM shall be obligated to pay to Merck all outstanding Advanced Amounts (and all accrued interest thereon) in [***] installments over the [***] period following the effective date of such termination; provided, however, that if, after NGM has commenced repaying Merck the outstanding Advanced Amounts in accordance with the foregoing, there exists an NGM Optioned Product, then NGM shall be entitled to cease repaying the Advanced Amounts in accordance with the foregoing and Merck shall thereafter seek recoupment of the remaining unpaid Advanced Amounts (and all accrued interest thereon) in accordance with Section 7.5.2 (*i.e.*, out of

NGM's share of future Adjusted Net Sales from such NGM Optioned Product as well as NGM's share of future Adjusted Net Sales from any and all other Products as to which NGM has exercised the NGM ANS Option) for so long as there remains an NGM Optioned Product. For clarity, if Merck terminates this Agreement for convenience for any or all NGM Optioned Products or this Agreement expires or terminates for any other reason, NGM shall *not* be obligated to pay to Merck any outstanding Advanced Amounts as a result of such termination or expiration, it being understood that all Advanced Amounts are provided to NGM on a non-recourse basis, and except as provided in the first sentence of this Section 13.6.8 or in Section 14.2.3, are only to be recouped by Merck in accordance with Section 7.5.2 and/or Section 7.5.5, as applicable, out of Adjusted Net Sales of any NGM Optioned Products.

13.7 **Safety Issues**. Notwithstanding the foregoing, as used in this Agreement, a Reversion Compound or Reversion Product and any rights granted thereto to NGM shall not include any Program Compound or Product the Development or Commercialization of which, as of the effective date of termination hereunder, has been terminated in its entirety by Merck for any Safety Issue, except as provided in the last sentence of this Section 13.7; provided, that, with respect to any Program Compound or Product terminated by Merck for a Safety Issue, if NGM desires nonetheless to pursue such terminated Program Compound or Product in a different manner or in a different form than that pursued by Merck, the Parties shall discuss the feasibility of repurposing such Program Compound or Product in such a way as to address the Safety Issue and NGM shall have the right to pursue such alternative development of such Program Compound or Product subject to Merck's consent, not to be unreasonably withheld, conditioned or delayed. For clarity, where a termination occurs during [***], in accordance with all Laws and Merck's standard practices in such circumstances.

ARTICLE 14
CHANGE OF CONTROL; ACQUISITIONS

14.1 **Change of Control of NGM**. In the event that there is *any* Change of Control of NGM or an NGM Affiliate that Controls any of the NGM IP or other assets required for the Collaboration (including Collaboration Technology), then NGM shall provide written notice to Merck at least [***] prior to the closing of such Change of Control and Merck shall have the one-time right, at Merck's election, upon written notice at any time during the [***] after the closing of such Change of Control, to unilaterally terminate the Research Program Term and Tail Period, if any, and the Research Program, as set forth in Section 13.4.1, in its entirety or with respect to one or more Collaboration Targets (and related Collaboration Compounds).

14.2 Competitive Changes of Control.

14.2.1 *Competing Pharma Change of Control of NGM*. In addition to Merck's right under Sections 14.1, 14.2.2 and 14.4, as applicable, in the event only of a Competing Pharma Change of Control, Merck shall have the one-time right, at Merck's election, upon written notice at any time during the [***] after the closing of such Competing Pharma Change of Control, to unilaterally implement some or all of the following revisions to this Agreement:

(a) Program Transfer. If Merck elects to terminate the Research Program as provided in Section 14.1 upon [***], then Merck shall have [***]. If, in addition, in such case Merck desires to [***]. Promptly following Merck's provision of such notice, [***]. Any such Research Program Development Candidate that [***]. In furtherance of the foregoing, NGM [***]. For clarity, [***].

(b) No Additional Payment of Advances. Merck may determine that no further Advanced Amounts shall be provided to NGM or its Acquiror for any NGM Optioned Products as of such time or any NGM Optioned Products arising in the future;

(c) Payment of Existing Advances. Merck may require that NGM or its successor in interest resulting from such Competing Pharma Change of Control repay any then-outstanding Advanced Amounts (and all accrued interest thereon) in [***] installments over the [***] period following the closing of such Competing Pharma Change of Control;

(d) Co-Detailing Rights. Merck may terminate NGM's Co-Detailing rights under Section 7.8.2; provided, however, that if the Competing Pharma Change of Control occurs after First Commercial Sales in the Co-Detailing Territory, such termination would be subject to reasonable (in no event less than [***]) wind-down of NGM's Co-Detailing activities;

(e) Committee Participation. Merck may terminate and/or restrict NGM's participation on the JEC, JEDDC, JLDDC, JCC or any other joint committee under this Agreement; and

(f) Information. Merck may limit its obligations to provide NGM with any Information regarding the Development, manufacture or Commercialization of Products and Small Molecule Products in the Territory, to annual high level summary reports, and which Information

shall remain subject to the confidentiality provisions of ARTICLE 10, which high level summary reports will henceforth be substituted for any royalty report under Section 9.8 or calculation of Adjusted Net Sales with respect to any NGM Optioned Product. In addition, Merck may limit NGM's rights to review any such high-level summaries and reports to senior levels within NGM.

14.2.2 *Competitive Product Acquisition*. In addition to Merck's right under Sections 14.1, 14.2.1 and 14.4, as applicable, if NGM (or its Affiliates) acquires a Third Party that is, or in the event of a Change of Control involving NGM (or any of its Affiliates) where the Acquiror (or any of its Affiliates) is, researching, developing, commercializing, manufacturing or otherwise has any rights to any compound that Modulates an Optioned Target in a manner that satisfies the applicable Physiologically Relevant Threshold and belongs to the same Modulation Category as the Optioned Compound(s) with respect to such Optioned Target, Merck shall have the right, at Merck's election, upon written notice at any time during the [***] after the closing of such acquisition or Change of Control, as applicable, to unilaterally implement some or all of the following revisions to this Agreement with respect to such Optioned Target (and the applicable Modulation Category); provided, however, that if NGM or such Acquiror (and its Affiliates), as applicable, elects within [***] days following the date of such acquisition or Change of Control, as applicable, to terminate (and certifies to Merck in writing of such termination and thereafter does in fact terminate) its activities with respect to the research, development, commercialization and manufacture of such compound that Modulates such Optioned Target as described above, then: (1) Merck shall have no right to implement any of the following with respect to such Optioned Target (and the applicable Modulation Category); and (2) NGM or such Acquiror (and its Affiliates), as applicable, would thereafter be bound by the terms of Section 5.6 (notwithstanding anything to the contrary therein) with respect to such Optioned Target (and the applicable Modulation Category):

(a) No Additional Payment of Advances. Merck may determine that no further Advanced Amounts shall be provided to NGM or its Acquiror for any NGM Optioned Products associated with such Optioned Target (and the applicable Modulation Category) as of such time or any NGM Optioned Products associated with such Optioned Target (and the applicable Modulation Category) arising in the future;

(b) Payment of Existing Advances. Merck may require that NGM or such Third Party repay any then-outstanding Advanced Amounts (and all

accrued interest thereon) for any NGM Optioned Products associated with such Optioned Target (and the applicable Modulation Category) in [***] installments over the [***] period following the closing of such acquisition;

(c) Co-Detailing Rights. Merck may terminate NGM's Co-Detailing rights under Section 7.8.2 with respect to any NGM Optioned Products associated with such Optioned Target (and the applicable Modulation Category); provided, however, that if such acquisition occurs after First Commercial Sales in the Co-Detailing Territory, such termination would be subject to reasonable (in no event less than [***]) wind-down of NGM's Co-Detailing activities with respect to such NGM Optioned Products;

(d) Committee Participation. Merck may terminate and/or restrict NGM's participation on the JEC, JEDDC, JLDDC, JCC or any other joint committee under this Agreement as such participation pertains to such Optioned Target and any NGM Optioned Products associated with such Optioned Target (and the applicable Modulation Category); and

(e) Information. Merck may limit its obligations to provide NGM with any Information regarding the Development, manufacture or Commercialization of such Optioned Target and any NGM Optioned Products associated with such Optioned Target (and the applicable Modulation Category), to annual high level summary reports, and which Information shall remain subject to the confidentiality provisions of ARTICLE 10, which high level summary reports will henceforth be substituted for any royalty report under Section 9.8 or calculation of Adjusted Net Sales with respect to any applicable NGM Optioned Product. In addition, Merck may limit NGM's rights to review any such high-level summaries and reports to senior levels within NGM.

14.2.3 *Sensitive Information.* In both cases described in Sections 14.2.1 and 14.2.2, upon the written request of Merck, the Parties, including NGM's Acquiror, shall enter into good faith discussions regarding the adoption and implementation of reasonable procedures to be agreed upon in writing to restrict access to Confidential Information of Merck that is related to: (i) in the case of Section 14.2.1, the Development and Commercialization of Compounds, Products, Small Molecule Collaboration Compounds and Small Molecule Products; or (ii) in the case of Section 14.2.2, the relevant Optioned Target and any NGM Optioned Products associated with such Optioned Target (and the

applicable Modulation Category) (collectively, as applicable, "**Sensitive Information**") to those personnel of NGM having had access to and knowledge of Sensitive Information prior to the Competing Pharma Change of Control or acquisition, as applicable, except to the extent reasonably necessary for NGM and its Affiliates to continue to exercise its rights or perform its obligations under this Agreement or as required by Law. If the Parties do not implement such reasonable procedures within [***] days of negotiation, then Merck shall not be required to disclose any additional Sensitive Information to NGM after such [***] period, except for royalty reports owed pursuant to Section 9.8. The purposes of such procedures shall be to prohibit the use of Sensitive Information for competitive reasons against Merck and its Related Parties and Compounds or Products, including the development or commercialization of competing products.

14.3 Change of Control and Effect on Licensed Intellectual Property, Collaboration Compounds and Collaboration Targets. If either Party (or, in the case of NGM, any Affiliate of NGM that Controls any of the NGM IP or other assets required for the Collaboration (including Collaboration Technology)) undergoes a Change of Control with a Third Party (such Third Party, hereinafter referred to as an "**Acquiror**"), then: (a) the intellectual property of such Acquiror held or developed by such Acquiror (whether prior to or after such acquisition), shall be excluded from the Merck IP (and [***]) and NGM IP, and any other intellectual property licensed to the other Party; (b) the antibodies, peptides, other large molecules and small molecules discovered or identified by such Acquiror (whether prior to or after such acquisition) shall be excluded from the Collaboration Compounds; and (c) the human DNA sequences, RNA sequences, proteins and peptides identified and the subject of research under and/or validated by such Acquiror (whether prior to or after such acquisition) shall be excluded from the Collaboration Targets; provided, however, that no Collaboration Technology, Merck IP or NGM IP may be used in conjunction with any of the foregoing (a), (b) or (c), and should any Collaboration Technology, Merck IP or NGM IP be used in conjunction with any of the foregoing (a), (b) or (c), then the relevant subject matter of (a), (b) or (c), as applicable, shall be deemed excluded from this Section 14.3 and such subject matter shall be treated in a manner consistent with any other intellectual or property rights of a Party hereunder (*e.g.*, potentially subject to license to the other Party). For clarity, this Section 14.3 shall have no effect on: (i) the intellectual property rights Controlled immediately prior to the date of such Change of Control by a Party or by any Person that is an Affiliate of a Party immediately prior to the date of such Change of Control; (ii) the antibodies, peptides, other large molecules and small molecules discovered or identified prior to the date of such Change of Control by a Party or by any Person that is an Affiliate of a Party immediately prior to the date of such Change of Control; or (iii) the human DNA sequences, RNA sequences, proteins and peptides identified and the subject of

research under and/or validated prior to the date of such Change of Control by a Party or by any Person that is an Affiliate of a Party immediately prior to the date of such Change of Control.

14.4 Certain Competitive Acquisitions of or by a Party. Without limiting Sections 14.1, 14.2 and 14.3:

14.4.1 *Research Program and Tail Period.*

(a) If, during the Research Program Term or the applicable Tail Period, NGM (or its Affiliates) acquires a Third Party that is, or in the event of a Change of Control involving NGM (or any of its Affiliates) where the Acquiror (or any of its then-Affiliates) is, researching, developing, manufacturing or otherwise has any rights to any compound that Modulates a Collaboration Target that has reached a stage that [***] (for clarity, if such program has not reached such stage, then Section 14.4.1(c) shall control), then the Acquiror (or NGM, as applicable) will within [***] after the effective date of such Change of Control or acquisition, as applicable, be required to elect one of the following: (i) provide Merck with data demonstrating that all of the antibodies, peptides or other large molecule or small molecule compounds in such program do not Modulate a Collaboration Target that is then-subject to the obligations of Section 4.6.1 or Section 4.6.2 in a manner that satisfies the applicable Physiologically Relevant Threshold, in which case the Acquiror (or NGM, as applicable) may continue such program independent of this Agreement; (ii) notify Merck in writing that it is deeming the antibodies, peptides or other large molecule or small molecule compounds in such program that Modulate such Collaboration Target in a manner that satisfies the applicable Physiologically Relevant Threshold to be Collaboration Compounds and the relevant intellectual property and technology of such Third Party, solely with respect thereto, to be Collaboration Technology, in which case such antibodies, peptides or other large molecule or small molecule compounds shall be deemed for all purposes under this Agreement to be Collaboration Compounds, subject to the milestones, royalties and other payments that accrue thereon under this Agreement in the event Merck exercises the Merck Option with respect thereto, and subject in such event to the NGM ANS Option with respect thereto (as and to the extent available with respect to such Collaboration Compound); (iii) notify Merck in writing that it is planning to divest such program (provided, however, that if such program is not divested within [***] thereafter, then subsection (ii) will apply to such program unless the Acquiror (or NGM, as applicable) discontinues such

program until the end of the Research Program Term and applicable Tail Period, if any, and provides written notice thereof to Merck before the end of such [***] period); or (iv) notify Merck in writing that NGM will, and hereby does, transfer to Merck, in accordance with Section 14.4.1(b), all Collaboration Compounds that Modulate such Collaboration Target that is then subject to the obligations of Section 4.6.1 or Section 4.6.2, in a manner that satisfies the applicable Physiologically Relevant Threshold (collectively, "**Transferred Compounds**"). Notwithstanding the foregoing, if any Collaboration Target referred to above in this Section 14.4.1(a) is one as to which NGM has not conducted or had conducted on its behalf any research or Development activities during the [***] prior to the effective date of a Change of Control of, or acquisition by, NGM of a Third Party, as demonstrated by competent written proof to Merck within [***] of such Change of Control of, or acquisition by, NGM of such Third Party, and provided that any such Collaboration Target [***], upon NGM's request, Merck shall meet and discuss such "abandoned" Collaboration Target, and the terms and conditions under which such Acquiror and/or NGM may pursue independent of the Collaboration, any antibodies, peptides or other large molecule or small molecule compounds that Modulate such abandoned target.

(b) In furtherance of the foregoing Section 14.4.1(a)(iv), to the extent that the Acquiror (or NGM, as applicable) elects to proceed under Section 14.4.1(a)(iv):

(i) NGM shall, and hereby does (and NGM shall cause its Affiliates to, and on their behalf hereby does), assign to Merck, or its designee, all Transferred Compounds and all Know-How and Patents Rights Controlled by NGM or its Affiliates immediately prior to the closing of such acquisition or Change of Control, as applicable, that solely relate to the Transferred Compounds and products containing or comprising Transferred Compounds ("**Transferred Products**");

(ii) to the extent the Know-How and Patents Rights Controlled by NGM or its Affiliates immediately prior to the closing of such acquisition or Change of Control, as applicable, relate to both the Transferred Compounds and other subject matter, NGM hereby grants Merck, on behalf of NGM and any such Affiliates, a fully-paid up, irrevocable and perpetual, sublicenseable and transferrable license under and with respect to such Know-How and Patent

Rights to: (1) research, Develop, use and manufacture (including making and having made) Transferred Compounds and Transferred Products in the Field in the Territory; and (2) Commercialize (including sell, offer for sale, import and export) Transferred Compounds and Transferred Products in the Field in the Territory;

(iii) the Research Program shall terminate with respect to Transferred Compounds and Transferred Products, and Merck shall have no obligation to pay for any External Costs or work performed by the NGM FTEs with respect to the relevant portion of the Research Program after the effective date of such transfer including the Research Funding for the relevant portion of the Research Program after such date and the relevant portion of the licenses and rights granted by Merck to NGM in Section 4.1.9(a) will terminate and such licenses and rights shall revert to Merck and NGM and its Affiliates and sublicensees shall have no such further rights to use any such Merck IP as contemplated by Section 4.1.9(a). In addition, NGM shall be responsible at its own expense, upon Merck's election in writing, for transitioning any Clinical Studies then-being conducted on the Transferred Compounds under any Early Development activities under the Research Program to Merck or its designee, in which event the terms and conditions (including each Party's rights and obligations) of Sections 13.6.2(d) through 13.6.2(i), inclusive, shall apply to all such Transferred Compounds, *mutatis mutandis*, subject only to transfer and the like being provided by NGM to Merck (and not by Merck to NGM); and

(iv) NGM shall have no further rights or interests in the Transferred Compounds or Transferred Products, including no right to: (1) receive any royalties or milestones or other amounts in connection with any Transferred Compounds or Transferred Products (or to exercise any NGM ANS Option with respect to any Transferred Compounds or Transferred Products); (2) receive any reports regarding any Transferred Compounds or Transferred Products; or (3) subject any Transferred Compounds or Transferred Products to any committee oversight.

(c) If, during the Research Program Term or the applicable Tail Period, NGM (or its Affiliates) acquires a Third Party that is, or in the event of a Change

of Control involving NGM (or any of its Affiliates) where the Acquiror (or any of its Affiliates immediately prior to the date of such acquisition or Change of Control) is, researching, developing, manufacturing or otherwise has any rights to any compound that Modulates a Collaboration Target and [***] has not reached a stage that [***], then the Acquiror shall not be subject to the obligations set forth in Section 4.6.1 and Section 4.6.2 solely with respect to those antibodies, peptides or other large molecule or small molecule compounds that: (A) [***]; and (B) [***]; provided, however, that NGM and such Acquiror (or the relevant Affiliates of such Persons) promptly following the effective date of such Change of Control establish and enforce internal processes and procedures to strictly segregate the research and development of such antibodies, peptides or other large molecule or small molecule compounds from those being researched and Developed under the Research Program; provided, further, that (i) no Collaboration Technology, Merck IP or NGM IP may be used by such Acquiror (or any of its Affiliates immediately prior to the date of such acquisition or Change of Control), or its employees, contractors or other agents, nor shall any such Persons receive, obtain or otherwise be provided with, or have access to or have any right to use, any Collaboration Technology, Merck IP or NGM IP. In furtherance of the foregoing, NGM shall maintain security practices, including appropriate administrative, physical and technical safeguards, including underlying operating system and network security controls and other firewalls, which are reasonably acceptable to Merck and that are designed to ensure that Collaboration Technology, Merck IP and NGM IP is not accessed by, used by, received by, obtained by or otherwise provided to, such Acquiror (or any of its Affiliates immediately prior to the date of such acquisition or Change of Control), or its employees, contractors or other agents. Notwithstanding the foregoing Section 14.4.1(c), at NGM's option, NGM or such Acquiror may subject any program that would otherwise be subject to this Section 14.4.1(c) to Section 14.4.1(a) (and by extension Section 14.4.1(b), to the extent applicable).

(d) For clarity, this Section 14.4.1 solely applies, to the extent applicable, to Third Party programs existing at the time of the relevant acquisition or Change of Control, and does not apply to any Optioned Target (which is addressed under Section 14.2.2).

14.4.2 *No Prohibition.* For clarity, nothing in this Agreement shall prohibit NGM or Merck from undergoing any Change of Control.

ARTICLE 15
INDEMNIFICATION; LIMITATION ON LIABILITY

15.1 Indemnification by Merck. Merck hereby agrees to indemnify, hold harmless and defend NGM, its Affiliates and their respective officers, directors, agents, employees, successors and assigns (collectively, the "**NGM Indemnified Parties**") against any and all losses, costs, expenses, fees or damages arising out of or relating to claims, allegations, suits, actions or proceedings asserted by any Third Party, whether governmental or private, arising out of or relating to: (i) the breach of any of Merck's covenants, representations or warranties under this Agreement; (ii) the research, development, manufacture, use, sale or other disposition of any Program Compound (but excluding any Program Compound contained in or comprising an NGM Optioned Product from and after the date of NGM's exercise of the NGM ANS Option with respect to such NGM Optioned Product), Product (but excluding any NGM Optioned Product from and after the date of NGM's exercise of the NGM ANS Option with respect to such NGM Optioned Product), Small Molecule Collaboration Compound or Small Molecule Product by or on behalf of Merck or its Related Parties (except, for clarity, NGM and its Affiliates); or (iii) the negligence or willful misconduct by Merck, its Related Parties or their respective officers, directors, agents or employees, in performing any obligations under this Agreement; provided, however, that Merck shall not be required to indemnify, hold harmless or defend any NGM Indemnified Party against any claim to the extent that NGM has an obligation to indemnify the Merck Indemnified Parties under Section 15.2(i) or (iii) or Section 13.6.2(h).

15.2 Indemnification by NGM. NGM agrees to indemnify, hold harmless and defend Merck, its Affiliates and their respective officers, directors, agents, employees, successors and assigns (collectively, the "**Merck Indemnified Parties**") against any and all losses, costs, expenses, fees or damages arising out of or relating to claims, allegations, suits, actions or proceedings asserted by any Third Party, whether governmental or private, arising out of or relating to: (i) the breach of any of NGM's covenants, representations or warranties under this Agreement; (ii) the research, development, manufacture, use, sale or other disposition of any Program Compound (but excluding any Program Compound contained in or comprising an NGM Optioned Product from and after the date of NGM's exercise of the NGM ANS Option with respect to such NGM Optioned Product), Product (but excluding any NGM Optioned Product from and after the date of NGM's exercise of the NGM ANS Option with respect to such NGM Optioned Product), Excluded Compound, Reversion Compound or Reversion Product by or on behalf of NGM or its Affiliates or licensees (except, for clarity, Merck and its Affiliates), or Refused Candidate or Non-Qualifying Compound; (iii) the negligence or willful misconduct by NGM, its Affiliates or their respective officers, directors, agents or employees, in performing any obligations under this Agreement; or (iv) the Existing Collaboration Agreements, including any

amounts that may be payable by NGM in connection therewith; provided, however, that NGM shall not be required to indemnify, hold harmless or defend any Merck Indemnified Party against any claim to the extent that Merck has an obligation to indemnify the NGM Indemnified Parties under Section 15.1(i) or (iii).

15.3 Procedure. If either Party is seeking indemnification under Section 15.1 or 15.2 (the "**Indemnified Party**"), it shall inform the other Party (the "**Indemnifying Party**") of the claim giving rise to the obligation to indemnify pursuant to such Section as soon as reasonably practicable after receiving notice of the claim (provided, however, any delay or failure to provide such notice shall not constitute a waiver or release of, or otherwise limit, the Indemnified Party's rights to indemnification under, as applicable, Section 15.1 or 15.2, except to the extent that such delay or failure materially prejudices the Indemnifying Party's ability to defend against the relevant claims). The Indemnifying Party shall have the right to assume the defense of any such claim for which it is obligated to indemnify the Indemnified Party. The Indemnified Party shall cooperate with the Indemnifying Party and the Indemnifying Party's insurer as the Indemnifying Party may reasonably request, and at the Indemnifying Party's cost and expense. The Indemnified Party shall have the right to participate, at its own expense and with counsel of its choice, in the defense of any claim or suit that has been assumed by the Indemnifying Party. The Indemnifying Party shall not settle any claim without the prior written consent of the Indemnified Party, not to be unreasonably withheld, conditioned or delayed. The Indemnified Party shall not settle or compromise any such claim without the prior written consent of the Indemnifying Party, which it may provide in its sole discretion. If the Parties cannot agree as to the application of Section 15.1 or 15.2 to any claim, pending resolution of the dispute pursuant to Section 16.7, the Parties may conduct separate defenses of such claims, with each Party retaining the right to claim indemnification from the other Party in accordance with Section 15.1 or 15.2 upon resolution of the underlying claim.

15.4 LIMITATION OF LIABILITY. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR INDIRECT DAMAGES (INCLUDING LOST PROFITS) ARISING FROM OR RELATING TO THIS AGREEMENT (INCLUDING BREACH OF THIS AGREEMENT) OR THE EXERCISE OF ITS RIGHTS HEREUNDER, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 15.4 IS INTENDED TO AND SHALL NOT LIMIT OR RESTRICT (1) [***] OR (2) [***].

15.5 Insurance. Each Party shall procure and maintain insurance, including product liability insurance (or self-insure but solely with respect to Merck), adequate to cover its obligations hereunder and that is consistent with normal business practices of prudent

companies similarly situated. It is understood that such insurance shall not be construed to create a limit of either Party's liability with respect to its indemnification obligations under this ARTICLE 15 or otherwise. Each Party shall provide the other Party with written evidence of such insurance upon request. Each Party shall provide the other Party with written notice at least [***] days prior to the cancellation, non-renewal or material change in such insurance or self -insurance that materially adversely affects the rights of the other Party hereunder.

ARTICLE 16
MISCELLANEOUS

16.1 **Force Majeure**. Neither Party shall be held liable to the other Party nor be deemed to have defaulted under or breached this Agreement for failure or delay in performing any obligation under this Agreement to the extent such failure or delay is caused by or results from causes beyond the reasonable control of the affected Party, potentially including embargoes, war, acts of war (whether war be declared or not), acts of terrorism, insurrections, riots, civil commotions, strikes, lockouts or other labor disturbances, fire, floods or other acts of God, or acts, omissions or delays in acting by any governmental authority or the other Party. The affected Party shall notify the other Party of such force majeure circumstances as soon as reasonably practical, and shall promptly undertake all reasonable efforts necessary to cure such force majeure circumstances.

16.2 **Assignment**. Except as provided in this Section 16.2, this Agreement may not be assigned or otherwise transferred, nor may any right or obligation hereunder be assigned or transferred, by either Party without the consent of the other Party; provided, however, that either Party may, without such consent, assign this Agreement and its rights and obligations hereunder in whole or in part to an Affiliate (provided, further, that the assigning Party shall remain liable for the performance or non-performance of such Affiliate) or, subject to ARTICLE 14, in connection with the transfer or sale of all or substantially all of its assets related to the subject matter of this Agreement, or in the event of its merger or consolidation or change in control or similar transaction. Any attempted assignment not in accordance with this Section 16.2 shall be void. Any permitted assignee shall assume all assigned obligations of its assignor under this Agreement.

16.3 **Rights in Bankruptcy**. All licenses and rights to licenses granted under or pursuant to this Agreement by a Party are, and shall otherwise be deemed to be, for purposes of Section 365(n) of the US Bankruptcy Code (the "**Code**"), licenses of rights to "intellectual property" as defined under Section 101(335A) of the Code. The Parties agree that each Party, as a licensee of certain rights under this Agreement, shall retain and may fully exercise all of its rights and elections under the Code, and that upon

commencement of a bankruptcy proceeding by or against a Party under the Code (such Party, the "**Bankrupt Party**"), the other Party shall be entitled to a complete duplicate of or complete access to (as the other Party deems appropriate), any intellectual property licensed to such other Party and all embodiments of such intellectual property, which, if not already in such other Party's possession, shall be promptly delivered to it: (i) upon any such commencement of a bankruptcy proceeding upon such other Party's written request therefor, unless the Bankrupt Party elects to continue to perform all of its obligations under this Agreement; or (ii) if not delivered under clause (i), following the rejection of this Agreement by the Bankrupt Party upon written request therefor by the other Party.

16.4 **Severability**. If any one or more of the provisions contained in this Agreement is held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby, unless the absence of the invalidated provision(s) adversely affects the substantive rights of the Parties. The Parties shall in such an instance use their best efforts to replace the invalid, illegal or unenforceable provision(s) with valid, legal and enforceable provision(s) that, insofar as practical, implement the purposes of this Agreement.

16.5 **Notices**. All notices that are required or permitted hereunder shall be in writing and sufficient if (a) delivered personally, (b) sent by electronic mail (and promptly confirmed by personal delivery, registered or certified mail or overnight courier as set forth herein), (c) sent by nationally-recognized overnight courier or (d) sent by registered or certified mail, postage prepaid, return receipt requested, addressed as follows:

if to NGM, to:	NGM Biopharmaceuticals Inc. 333 Oyster Point Boulevard, South San Francisco, CA 94080 Attention: General Counsel Email: [***]
and:	Cooley LLP 3175 Hanover Street Palo Alto, CA 94304 Attention: Marya Postner Email: mpostner@cooley.com
if to Merck, to:	Merck Sharp & Dohme Corp. One Merck Drive P.O. Box 100 Whitehouse Station, NJ 08889-0100 Attention: Office of Secretary Email: [***]
And	Merck Sharp & Dohme Corp. 2000 Galloping Hill Road Mail Stop K-15-352 Kenilworth, NJ 07033 Attention: VP, Transactions, Business Development & Licensing, MRL Email: [***]

or to such other address(es) as the Party to whom notice is to be given may have furnished to the other Party in writing in accordance herewith. Any such notice shall be deemed to have been given: (a) when delivered if personally delivered on a Business Day (or if delivered or sent on a non-Business Day, then on the next Business Day); (b) on the Business Day after dispatch if sent by nationally-recognized overnight courier; (c) on the fifth (5th) Business Day following the date of mailing, if sent by mail; or (d) on the date of transmission when sent by electronic mail before 5:00 pm local time at the recipient's location on a Business Day (and otherwise on the next Business Day).

16.6 **Applicable Law**. This Agreement shall be governed by and construed in accordance with the laws of the State of New York and the patent laws of the US without reference to any rules of conflict of laws.

16.7 Dispute Resolution.

16.7.1 The Parties shall negotiate in good faith and use reasonable efforts to settle any dispute, controversy or claim arising from or related to this Agreement or the breach thereof. If the Parties do not fully settle, and a Party wishes to pursue the matter, [***].

16.7.2 [***].

16.7.3 [***].

16.7.4 [***].

16.7.5 The Parties agree that, in the event of a good faith dispute over the nature or quality of performance under this Agreement, neither Party may terminate this Agreement until final resolution of the dispute [***]. The Parties further agree that any payments made pursuant to this Agreement pending resolution of the dispute shall be refunded if an arbitrator or court determines that such payments are not due.

16.7.6 As used in this Section, the term [***].

16.8 Entire Agreement; Amendments. This Agreement, together with the Schedules and Exhibits hereto, contains the entire understanding of the Parties with respect to the subject matter hereof. Any other express or implied agreements and understandings, negotiations, writings and commitments, either oral or written, in respect to the subject matter hereof are superseded by the terms of this Agreement as of the A&R Effective Date; provided that (a) the Original Agreement shall have been in effect and shall govern the Parties' rights and obligations with respect to the subject matter of this Agreement between the Original Execution Date and the A&R Effective Date; and (b) this Agreement shall govern the Parties' rights and obligations with respect to the subject matter of this Agreement from and after the A&R Effective Date. The Schedules and Exhibits to this Agreement are incorporated herein by reference and shall be deemed a part of this Agreement. This Agreement may be amended, or any term hereof modified, only by a written instrument duly executed by authorized representative(s) of both Parties hereto.

16.9 Notwithstanding anything to the contrary in the foregoing, the Parties agree, effective as of the Original Effective Date, that the mutual nondisclosure agreement between the Parties dated January 27, 2014, as amended (collectively, the "**Prior CDA**"), was superseded by the Original Agreement, and that disclosures made prior to the Original Effective Date pursuant to the Prior CDA and disclosures of Confidential Information

made pursuant to the Original Agreement shall be subject to the confidentiality and non-use provisions of this Agreement as if made under this Agreement.

16.10 Headings. The captions to the several Articles, Sections and subsections hereof are not a part of this Agreement, but are merely for convenience to assist in locating and reading the several Articles and Sections hereof.

16.11 Independent Contractors. It is expressly agreed that NGM and Merck shall be independent contractors and that the relationship between the two Parties shall not constitute a partnership, joint venture or agency. Neither NGM nor Merck shall have the authority to make any statements, representations or commitments of any kind, or to take any action, that shall be binding on the other Party, without the prior written consent of the other Party.

16.12 Waiver. The waiver by either Party hereto of any right hereunder, or of any failure of the other Party to perform, or of any breach by the other Party, shall not be deemed a waiver of any other right hereunder or of any other breach by or failure of such other Party whether of a similar nature or otherwise.

16.13 Cumulative Remedies. No remedy referred to in this Agreement is intended to be exclusive, but each shall be cumulative and in addition to any other remedy referred to in this Agreement or otherwise available under Law.

16.14 Waiver of Rule of Construction. Each Party has had the opportunity to consult with counsel in connection with the review, drafting and negotiation of this Agreement. Accordingly, the rule of construction that any ambiguity in this Agreement shall be construed against the drafting Party shall not apply.

16.15 Certain Conventions. Any reference in this Agreement to an Article, Section, subsection, paragraph, clause, Schedule or Exhibit shall be deemed to be a reference to an Article, Section, subsection, paragraph, clause, Schedule or Exhibit, of or to, as the case may be, this Agreement, unless otherwise indicated. Unless the context of this Agreement otherwise requires: (a) words of any gender include each other gender; (b) words such as “herein”, “hereof”, and “hereunder” refer to this Agreement as a whole and not merely to the particular provision in which such words appear; (c) words using the singular shall include the plural, and vice versa; and (d) the words “include” or “including” shall be construed as incorporating “but not limited to” or “without limitation”.

16.16 Business Day Requirements. In the event that any notice or other action or omission is required to be taken by a Party under this Agreement on a day that is not a Business Day,

then such notice or other action or omission shall be deemed to be required to be taken on the next occurring Business Day.

16.17 Counterparts. This Agreement may be signed in any number of counterparts (facsimile and electronic transmission included), each of which shall be deemed an original, but all of which shall constitute one and the same instrument. After facsimile or electronic transmission, the Parties agree to execute and exchange documents with original signatures.

16.18 HSR Act.

16.18.1 *Original Agreement.* The Parties acknowledge and agree that under the Original Agreement the HSR Conditions were met on March 17, 2015.

16.18.2 *Merck Option Exercise*. Prior to any exercise of any Merck Option pursuant to this Agreement, each of Merck and NGM shall make any necessary merger control filings under any applicable competition or antitrust laws, including pursuant to the HSR Act, with any applicable governmental authority and shall obtain the necessary approvals or clearances or the applicable waiting period shall have expired or been terminated ("**Antitrust Approvals**"); provided, however, that each of Merck and NGM shall cooperate as may be reasonably requested to ensure any such Antitrust Approvals are obtained.

16.19 Other Activities. The Parties acknowledge that each of them may now or in the future engage in research, manufacturing, development or commercialization activities that utilize technologies similar to or involve products competitive with those contemplated by this Agreement. Except as may be expressly provided in Section 5.6 with respect to NGM, nothing in this Agreement, including any obligation to use Commercially Reasonable Efforts to Develop or Commercialize Optioned Compounds or Products or any restriction on the use of Confidential Information, shall create any obligation not to research, manufacture, develop or commercialize any product or any obligation to utilize a separate sales force for Products or Small Molecule Products. Neither Party shall be prevented from using any publicly available research results or other information (including any publicly available information of the other Party) to the same extent as Third Parties generally are legally permitted to do so. Each Party agrees to inform its key personnel assigned to perform activities hereunder of the limitations on use of Confidential Information contained in this Agreement, instruct such personnel to comply with such restrictions, and where appropriate, impose firewalls or other appropriate measures to minimize the potential for misuse of information. However, each Party has limited resources, and as a result, it is anticipated that personnel assigned to activities hereunder may also participate in other activities that may utilize technologies similar to

or involve products competitive with those contemplated by this Agreement. In particular, it is anticipated that personnel in sales, marketing, clinical and regulatory functions, regardless of level, will participate in multiple programs and that management personnel will by nature of their leadership positions participate in multiple programs.

16.20 Extension to Affiliates; Merck's Use of Subcontractors.

16.20.1*Extension to Affiliates*. Each Party shall have the right to extend the rights, licenses, immunities and obligations granted or imposed in this Agreement to one or more of its Affiliates. All applicable terms and provisions of this Agreement shall apply to any such Affiliate to which this Agreement has been extended to the same extent as such terms and provisions apply to such Party. Each Party shall remain fully liable for any acts or omissions, including financial liabilities, of such Affiliates. To the extent that this Agreement imposes obligations on any Affiliates of a Party, such Party agrees to cause its Affiliates to perform such obligations.

16.20.2*Merck's Use of Subcontractors*. Without limiting Merck's rights pursuant to Section 16.20.1, Merck shall be entitled to utilize the services of any Third Parties to perform discrete elements of its Research Program activities; provided, however, that it shall: (i) remain at all times fully liable for its responsibilities under the Research Program and shall ensure that each subcontractor complies with the terms and conditions of this Agreement; and (ii) ensure that Merck is able to provide NGM with the same rights with respect to any intellectual property rights or materials (e.g., a cell line) arising from the subcontracted activities as it would have if Merck performed such activities under this Agreement.

16.21 [***]. During the period commencing on the A&R Effective Date and ending on the earlier of: [***]:

16.21.1 [***];

16.21.2 [***];

16.21.3 [***];

16.21.4 [***];

16.21.5 [***];

16.21.6 [***]; or

16.21.7 [***].

16.21.8 Notwithstanding the foregoing, (A) [***], (B)[***] and (C) [***]; provided, however, [***].

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IN WITNESS WHEREOF, the Parties have executed this Agreement as of the A&R Effective Date.

MERCK SHARP & DOHME CORP.	**NGM BIOPHARMACEUTICALS, INC.**
BY:_____	BY:_____
NAME:_____	NAME:_____
TITLE:_____	TITLE:_____

[***]

Exhibit 10.2

NGM BIOPHARMACEUTICALS, INC.
2018 EQUITY INCENTIVE PLAN

STOCK OPTION GRANT NOTICE

NGM Biopharmaceuticals, Inc. (the "***Company***") has awarded to Participant an option to purchase up to the number of shares of Common Stock set forth below (the "***Option***") under its 2018 Equity Incentive Plan (the "***Plan***").

Participant:	_____
Date of Grant:	_____
Number of Shares Subject to Option:	_____
Type of Grant:	Nonstatutory Stock Option
Exercise Price (Per Share):	_____
Total Exercise Price:	_____
Vesting Commencement Date:	Date of Grant
Vesting Schedule:	Subject to Participant's Continuous Service through each applicable vesting date and to the potential vesting acceleration described in Section 2 of the attached Option Terms and Conditions (the "***Terms***"), the Option will vest as follows: [**Initial Grant**] [One-third of the shares will vest on the first anniversary of the Vesting Commencement Date, and the remaining shares will vest in eight (8) successive, approximately equal quarterly installments over a two-year period thereafter, such that the Option will be fully vested on the third anniversary of the Vesting Commencement Date.] [**Annual Grant**] [The shares will vest in four (4) successive, approximately equal quarterly installments, with the final installment vesting on the earlier of (i) the first anniversary of the Vesting Commencement Date and (ii) the day prior to the Company's next annual stockholder meeting.]
Exercise Schedule:	Same as Vesting Schedule
Expiration Date:	_____

Participant Acknowledgements: By Participant's acceptance of this Option, Participant understands and agrees that the Option is governed by this Stock Option Grant Notice (this "***Grant Notice***"), and the provisions of the Plan and the Terms, all of which are made a part of this document. The Grant Notice and the Terms are collectively referred to as the "***Option Agreement***" applicable to the Option. Participant further acknowledges that the Option comprises the entire understanding between Participant and the Company regarding the acquisition of stock in the Company and supersedes all prior oral and written agreements, promises and/or representations on that subject with the exception of other equity awards previously granted to Participant and Common Stock previously issued to Participant.

Participant further consents to receive Plan documents by electronic delivery and to participate in the Plan through an online or electronic system established and maintained by the Company or another third party designated by the Company.

NGM BIOPHARMACEUTICALS, INC.

By: _____
Signature

Title: _____

Date: _____

PARTICIPANT:

_____
Signature

Date: _____

OPTION TERMS AND CONDITIONS

1. GENERAL. These Option Terms and Conditions (these "***Terms***") apply to a particular stock option grant (the "***Option***") granted by NGM Biopharmaceuticals, Inc. (the "***Company***"), and are incorporated by reference in the Stock Option Grant Notice (the "***Grant Notice***") corresponding to that particular grant. The recipient of the Option identified in the Grant Notice is sometimes referred to as "***Participant***." The effective date of grant of the Option as set forth in the Grant Notice is referred to as the "***Date of Grant***". The Option has been granted to Participant in addition to, and not in lieu of, any other form of compensation otherwise payable or to be paid to Participant. The Grant Notice and these Terms are collectively referred to as the "***Option Agreement***" applicable to the Option. Capitalized terms are defined in the Plan if not defined in the Option Agreement.

2. VESTING.

(a) The Option will vest as provided in Participant's Grant Notice. Vesting will cease upon the termination of Participant's Continuous Service. Notwithstanding the foregoing, if a Change in Control occurs and Participant's Continuous Service has not terminated as of immediately prior to such Change in Control, then the vesting and exercisability of the Option will be accelerated in full as of immediately prior to such Change in Control.

(b) If any payment or benefit Participant would receive from the Company or otherwise in connection with a Change in Control or other similar transaction (a "***280G Payment***") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "***Excise Tax***"), then any such 280G Payment (a "***Payment***") shall be equal to the Reduced Amount. The "***Reduced Amount***" shall be either (x) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the Payment, whichever amount (i.e., the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in Participant's receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction shall occur in the manner (the "***Reduction Method***") that results in the greatest economic benefit for Participant. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "***Pro Rata Reduction Method***").

Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the Payment being subject to taxes pursuant to Section 409A of the Code that would not otherwise be subject to taxes pursuant to Section 409A of the Code, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, shall be modified so as to avoid the imposition of taxes pursuant to Section 409A of the Code as follows: (A) as a first priority, the modification shall preserve to the greatest extent possible, the greatest economic benefit for Participant as determined on an after-tax basis; (B) as a second priority, Payments that are contingent on future events (e.g., being terminated without cause), shall be reduced (or eliminated) before Payments that are not contingent on future events; and (C) as a third priority, Payments that are "deferred compensation" within the meaning of Section 409A of the Code shall be reduced (or eliminated) before Payments that are not deferred compensation within the meaning of Section 409A of the Code.

Unless Participant and the Company agree on an alternative accounting firm, the accounting firm engaged by the Company for general tax compliance purposes as of the day prior to the effective date of the change of control transaction triggering the Payment shall perform the foregoing calculations. If the accounting firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the change of control transaction, the Company shall appoint a nationally recognized accounting firm to make the determinations required hereunder. The Company shall bear all expenses with respect to the determinations by such accounting firm required to be made hereunder. The Company shall use commercially reasonable efforts to cause the accounting firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to Participant and the Company within fifteen (15) calendar days after the date on which Participant's right to a 280G Payment becomes reasonably likely to occur (if requested at that time by Participant or the Company) or such other time as requested by Participant or the Company.

If Participant receives a Payment for which the Reduced Amount was determined pursuant to clause (x) of the first paragraph of this Section 2(b) and the Internal Revenue Service determines thereafter that some portion of the Payment is subject to the Excise Tax, Participant shall promptly return to the Company a sufficient amount of the Payment (after reduction pursuant to clause (x) of the first paragraph of this Section 2(b) so that no portion of the remaining Payment is

subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) in the first paragraph of this Section 2(b), Participant shall have no obligation to return any portion of the Payment pursuant to the preceding sentence.

3. EXERCISE AND METHOD OF PAYMENT.

(a) Participant may generally exercise the vested portion of the Option by delivery of payment of the exercise price and applicable withholding taxes and other required documentation to the Stock Plan Administrator in accordance with the option exercise procedures established by the Stock Plan Administrator, which may include an electronic submission. Please review Sections 5(f), 5(j) and 10(e) of the Plan, which may restrict or prohibit Participant's ability to exercise the Option during certain periods. Participant may exercise the Option only for whole shares of Common Stock.

(b) Participant may pay the exercise price by cash, check, bank draft or money order, or any other method provided in Section 5 of the Plan *if permitted by the Company at the time of exercise*.

4. TERM. Participant may not exercise the Option before the Date of Grant or after the expiration of the Option's term. The term of the Option expires upon the earliest of the following:

(a) immediately upon the termination of Participant's Continuous Service for Cause;

(b) twelve (12) months after the termination of Participant's Continuous Service (i) due to Participant's Disability or (ii) for any other reason other than Cause or Participant's death;

(c) eighteen (18) months after Participant's death if Participant dies either during Participant's Continuous Service;

(d) the Expiration Date indicated in Participant's Grant Notice; and

(e) the day before the tenth (10th) anniversary of the Date of Grant.

Notwithstanding the foregoing, if Participant dies during the period provided in subsection (b) above, the term of the Option shall not expire until the earlier of (i) eighteen (18) months after Participant's death, (ii) any termination of the Option in connection with a Change in Control, (iii) the Expiration Date indicated in the Grant Notice, or (iv) the day before the tenth anniversary of the Date of Grant. Additionally, the post-termination exercise period of the Option may be extended as provided in Section 5(f) of the Plan.

5. TRANSFERABILITY. Except as otherwise provided in the Plan, the Option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during Participant's life only by Participant.

6. RESPONSIBILITY FOR TAXES.

(a) Participant may not exercise the Option unless the Tax-Related Items of the Company and/or any Affiliate, including Participant's employer are satisfied. By accepting the Option, Participant agrees that the Company or an Affiliate may satisfy any applicable tax withholding obligations for Tax-Related Items at its sole election as provided in Section 8 of the Plan. Further, if Participant is subject to Tax-Related Items in more than one jurisdiction, Participant acknowledges that the Company and/or an Affiliate may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(b) Neither the Company nor any Affiliates make any representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Option, and are under no obligation to structure the Option to reduce or eliminate Participant's liability for Tax-Related Items or achieve any particular tax result. Participant acknowledges that, regardless of any action the Company or any Affiliate takes with respect to any or all Tax-Related Items, the ultimate liability for all Tax-Related Items is and remains Participant's responsibility and may exceed the amount actually withheld by the Company or an Affiliate. In the event that the amount of the Company's withholding obligation was greater than the amount withheld by the Company, Participant agrees to indemnify and hold the Company harmless from any failure by the Company to withhold the proper amount. Participant further acknowledges and agrees not to make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates for Tax-Related Items arising from the Option.

9. NOTICES. Any notice or request required or permitted in the plan or this Option Agreement (including any attachments) will be given in writing to each of the other parties hereto and will be deemed effectively given on the earlier of (i) the date of personal delivery, including delivery by express courier, or delivery via electronic means, or (ii) the date that is five (5) days after deposit in the United States Post Office (whether or not actually received by the addressee), by registered or certified mail with postage and fees prepaid, addressed to the Company at its primary executive offices, attention: Stock Plan Administrator, and addressed to Participant at the address as on file with the Company at the time notice is given.

10. GOVERNING PLAN DOCUMENT. The Option is subject to all the provisions of the Plan, including but not limited to the general provisions in Section 9 of the Plan, and the provisions in Section 10 of the Plan regarding the impact of certain transactions on the Option. The Option is further subject to all interpretations, amendments, rules and regulations, which may be adopted from time to time, pursuant to the Plan. If there is any conflict between the provisions of the Option and those of the Plan, the provisions of the Plan will control.

11. GOVERNING LAW. The interpretation, performance and enforcement of this Option Agreement will be governed by the law of the State of Delaware without regard to that state's conflicts of laws rules.

Exhibit 31.1

CERTIFICATION BY THE CHIEF EXECUTIVE OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, David J. Woodhouse, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of NGM Biopharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 5, 2021

By: /s/ David J. Woodhouse

David J. Woodhouse, Ph.D.
Chief Executive Officer and Director
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION BY THE CHIEF FINANCIAL OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Siobhan Nolan Mangini, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of NGM Biopharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 5, 2021

By: /s/ Siobhan Nolan Mangini

Siobhan Nolan Mangini
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. § 1350), David J. Woodhouse, Chief Executive Officer of NGM Biopharmaceuticals, Inc. (the "Company"), and Siobhan Nolan Mangini, Chief Financial Officer of the Company, each hereby certifies that, to the best of his or her knowledge:

1. The Company's Quarterly Report on Form 10-Q for the period ended June 30, 2021, to which this Certification is attached as Exhibit 32.1 (the "Periodic Report"), fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

2. The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 5, 2021

The undersigned have set their hands hereto as of the 5th day of August, 2021.

/s/ David J. Woodhouse

David J. Woodhouse, Ph.D.
Chief Executive Officer and Director
(Principal Executive Officer)

/s/ Siobhan Nolan Mangini

Siobhan Nolan Mangini
Chief Financial Officer
(Principal Financial Officer)

This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of NGM Biopharmaceuticals, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.