

Amended and Restated Services and Collaboration Agreement

by and between

ModernaTx, Inc.,

and

AstraZeneca AB

June 15, 2018

This Services and Collaboration Agreement (this "Agreement"), dated as of June 15, 2018 (the "Amendment Effective Date"), is made by and between ModernaTx, Inc., a Delaware corporation ("Moderna") and AstraZeneca AB, a company incorporated in Sweden under no. 556011-7482 with offices at SE-431 83 Mölndal, Sweden ("AstraZeneca"). Each of Moderna and AstraZeneca may be referred to herein as a "Party" or together as the "Parties."

WHEREAS, Moderna has developed expertise and technology useful for the discovery, development, Manufacture, characterization, or use of therapeutic products that function using mRNA;

WHEREAS, AstraZeneca is a biopharmaceutical company focused on identifying, Developing and Commercializing innovative therapeutic products;

WHEREAS, Moderna has provided certain Development and Manufacturing services under the Services and Collaboration Agreement made as of March 20, 2013 as amended on August 23, 2013, December 5, 2014, December 2, 2016, April 10, 2018 and May 14, 2018 (the "Original Services and Collaboration Agreement"), and the Parties have otherwise collaborated on the evaluation of mRNA Constructs [***] Polypeptides for certain Targets for the purpose of assisting AstraZeneca in determining whether or not to exercise its option rights under the original Option Agreement of the same date as amended on January 10, 2015, April 10, 2018 and May 14, 2018 with respect to certain mRNA Constructs, Polypeptides and Targets (the "Original Option Agreement" and together, the "Original Agreements");

WHEREAS, under the Original Agreements AstraZeneca exercised one of its Options and nominated an Optioned Product Candidate for the Target VEGF-A [***];

WHEREAS, the Parties wish to extend the Service Program with respect to certain Targets subject to revised terms;

WHEREAS, the Parties wish to amend and restate the Original Services and Collaboration Agreement as set forth herein. [***]; and

WHEREAS, concurrent with the execution of this Agreement, AstraZeneca and Moderna are entering into an Amended and Restated Option Agreement (the "A&R Option Agreement"), pursuant to which AstraZeneca will have an exclusive option (but not obligation) to purchase the rights to certain mRNA Constructs [***] up to [***] Polypeptides for certain Targets ([***] having already been purchased under the Original Option Agreement).

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and for other good and valuable consideration, the amount and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. Definitions.

The following terms and their correlatives will have the following meanings. Capitalized terms used but not defined herein have the meanings ascribed to such terms in the Transaction Agreements.

- 1.1. “A&R Option Agreement” has the meaning set forth in Recitals.
- 1.2. “Affiliate” of a Person means any other Person which (directly or indirectly) is controlled by, controls or is under common control with such Person. For the purposes of this definition, the term “control” (including, with correlative meanings, the terms “controlled by” and “under common control with”) as used with respect to a Person means (a) in the case of a corporation, direct or indirect ownership of voting securities entitled to cast more than fifty percent (50%) of the votes in the election of directors or (b) in the case of a non-corporate Person, direct or indirect ownership of more than fifty percent (50%) of the equity interests with the power to direct the management and policies of such entity.
- 1.3. “Agreement” has the meaning set forth in Recitals.
- 1.4. “Anti-Corruption Law” has the meaning set forth in Section 11.4(b).
- 1.5. “Approved Manufacturer” has the meaning set forth in paragraph 3(k) of Exhibit A-1 or in Exhibit A-2.
- 1.6. “AstraZeneca” has the meaning set forth in Recitals.
- 1.7. “AstraZeneca Anticipated Requirements” has the meaning set forth in Section 4.4(a).
- 1.8. “AstraZeneca Background Know-How” means any and all Know-How Controlled by AstraZeneca or its Affiliates as of the Signing Date or as to which AstraZeneca or its Affiliates obtains Control during the Services Program Term or until such time as no more Development Pool Services are performed, if later, that [***] excluding any AstraZeneca Collaboration Know-How.
- 1.9. “AstraZeneca Background Patents” means those Patents that are Controlled by AstraZeneca or its Affiliates as of the Signing Date or as to which AstraZeneca or its Affiliates obtains Control during the Services Program Term or until such time as no more Development Pool Services are performed, if later, that [***].
- 1.10. “AstraZeneca Background Technology” means the AstraZeneca Background Know-How and the AstraZeneca Background Patents.
- 1.11. “AstraZeneca Collaboration Know-How” means any and all Collaboration Know-How owned by AstraZeneca [***], including AstraZeneca’s right and interest in any Joint Collaboration Know-How.
- 1.12. “AstraZeneca Collaboration Patents” means any and all Patents that claim any of the AstraZeneca Collaboration Know-How, including AstraZeneca’s right and interest in any Joint Patents.
- 1.13. “AstraZeneca Collaboration Technology” means the AstraZeneca Collaboration Know-How and the AstraZeneca Collaboration Patents. For clarity, all AstraZeneca Collaboration Technology will be “Controlled” by AstraZeneca for purposes of this Agreement.
- 1.14. “AstraZeneca Indemnitees” has the meaning set forth in Section 8.5(b).
- 1.15. “AstraZeneca In-License” has the meaning set forth in Section 2.6(e)(i).
- 1.16. “AstraZeneca [***] Technology” means any Know-How, Materials and Patents [***].
- 1.17. “AstraZeneca [***] Technology” has the meaning set forth in Section 2.5(a)(i).
- 1.18. “AstraZeneca Program Director” has the meaning set forth in Section 3.1.
- 1.19. “AstraZeneca Technology” means collectively, AstraZeneca Background Technology and AstraZeneca Collaboration Technology (including any AstraZeneca [***] Technology).

1.20. “BLA” means a Biologics License Application filed with the FDA or an equivalent application to any Regulatory Authority (including an NDA or its foreign equivalent) requesting Regulatory Approval for a new product, including for Product.

1.21. “Business Combination” means with respect to a Party, any of the following events: (a) any Third Party (or group of Third Parties acting in concert) acquires (including by way of a tender or exchange offer or issuance by such Party), directly or indirectly, beneficial ownership or a right to acquire beneficial ownership of shares of such Party representing fifty percent (50%) or more of the voting shares (where voting refers to being entitled to vote for the election of directors) then outstanding of such Party; (b) such Party consolidates with or merges into another corporation or entity which is a Third Party, or any corporation or entity which is a Third Party consolidates with or merges into such Party, in either event pursuant to a transaction in which more than fifty percent (50%) of the voting shares of the acquiring or resulting entity outstanding immediately after such consolidation or merger is not held by the holders of the outstanding voting shares of such Party immediately preceding such consolidation or merger; or (c) such Party sells, transfers, leases or otherwise disposes of all or substantially all of its assets to a Third Party.

1.22. “Business Day” means any day other than a Saturday or Sunday on which banking institutions in New York, US, London, England, and Stockholm, Sweden are open for business.

1.23. “Calendar Quarter” means the respective periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 and December 31.

1.24. “cGMP” means current good manufacturing practices and regulatory requirements, as specified in regulations promulgated from time to time by the FDA for the manufacture and testing of pharmaceutical products.

1.25. “CMC” has the meaning set forth in Section 5.4.

1.26. “Collaboration Know-How” means all Know-How and Materials conceived, discovered, developed or otherwise made by or on behalf a particular Party or any of its Affiliates and Sublicensees (solely or jointly by or on behalf a particular Party or any of its Affiliates and Sublicensees) in the course of performing activities under or in connection with [***], but excluding [***], AstraZeneca [***] Technology.

1.27. “Collaboration mRNA Constructs” [***] means [***].

1.28. “Collaboration Patents” means any and all Patents that claim any of the Collaboration Know-How.

1.29. “Collaboration Technology” means the Collaboration Know-How and Collaboration Patents.

1.30. “Commercialization” means (a) any and all activities directed to the Manufacturing, marketing, detailing, promotion and securing of reimbursement of a product after Regulatory Approval has been obtained (including making, having made, using, importing, selling and offering for sale such product), and will include post-approval clinical studies, post-launch marketing, promoting, detailing, marketing research, distributing, customer service, administering commercially selling, having sold or otherwise disposing or offering to dispose of such product, importing, exporting or transporting such product for commercial sale, and all regulatory compliance with respect to the foregoing, and (b) otherwise marketing, selling or exploiting commercially a product.

1.31. “Commercially Reasonable Efforts” means the carrying out of obligations by a Party [***], using that level of efforts and resources which [***].

1.32. “Confidential Information” has the meaning set forth in Section 7.1(a).

1.33. “Confidentiality Agreement” means the Reciprocal Confidentiality Agreement between the Parties made effective as of October 30, 2012.

1.34. “Continuation Criteria” means, as the context requires, [***] as described in [***].

1.35. “Contract Year” means each three hundred sixty five (365) or three hundred sixty six (366) day (as applicable) period beginning on the Implementation Date or an anniversary of the Implementation Date, as applicable, occurring prior to the end of the Term.

1.36. “Control” or “Controlled” means, with respect to any Know-How, Material or Patent, the possession (whether by ownership, license or sublicense, other than by [***]) by a Party of the ability to assign or grant to the other Party the licenses, sublicenses or rights to access and use such Know-How, Material or Patent as provided for in the Transaction Agreements, without requiring the payment of any royalties or other consideration therefor or violating the terms of any agreement or other arrangement with any Third Party in existence as of the time such Party would be required hereunder to grant such license, sublicense, or rights of access and use. For clarity, Know-How, Materials and Patents (a) that are [***], and (b) Know-How, Materials and Patents that are licensed to Moderna pursuant to a Moderna In-License are not “Controlled” for purposes of the Transaction Agreements unless and only after such Moderna In-License is converted into a Moderna Collaboration In-License pursuant to Section 2.6(c) and [***] For clarity, [***].

1.37. “Cover” or “Covered” or “Covering”, with reference to (a) a Patent, means [***], and (b) Know-How, means [***].

1.38. “[***] Criteria” means the [***] criteria for selection of a lead candidate suitable for [***], such criteria to be specified [***] in the Services Plan for each Research Polypeptide.

1.39. “Development” means research and preclinical and clinical drug development activities, including: research, test method development and stability testing, toxicology, formulation, optimization, modification, enhancement, improvement, process development, qualification and validation, Manufacture scale-up, development-stage Manufacturing, quality assurance/quality control, holding/keeping (whether for disposal or otherwise), clinical studies, statistical analysis and report writing, the preparation and submission of Regulatory Filings, regulatory affairs with respect to the foregoing and all other activities necessary or reasonably useful or otherwise requested or required by a Regulatory Authority as a condition or in support of obtaining or maintaining a Regulatory Approval, and “Develop”, “Developed” and “Developing” will have corresponding meanings.

1.40. “Development Polypeptide” has the meaning set forth in the A&R Option Agreement.

1.41. “Development Pool Services” has the meaning set forth in Section 2.4(b).

1.42. “Disclosing Party” has the meaning set forth in Section 7.1(a).

1.43. “Discontinued Polypeptide” means any Research Polypeptide or Development Polypeptide that has by any of the terms of the Transaction Agreements or the Original Agreements become a “Discontinued Polypeptide”.

1.44. “Discontinued Product Candidate” means any Collaboration mRNA Construct, Product Candidate or Development Pool Candidate that has by any of the terms of the Transaction Agreements or the Original Agreements become a “Discontinued Product Candidate”.

1.45. “Discontinued Target” means any Research Target that has by any of the terms of the Transaction Agreements or the Original Agreements become a “Discontinued Target”.

1.46. “Disputes” has the meaning set forth in Section 11.1(a).

1.47. “DMF” means any drug master file filed with the FDA, and any equivalent filing in other countries or regulatory jurisdictions.

1.48. “EMA” means the Regulatory Authority known as either the European Medicines Agency or the European Agency for the Evaluation of Medicinal Products and any successor agency thereto.

1.49. [***].

1.50. “Executive Officer” means, for Moderna, [***], and for AstraZeneca, [***]. Either Party may change its Executive Officer upon written notice to the other Party; *provided*, that such replacement individual has decision-making authority on behalf of such Party in respect of this Agreement.

1.51. “Exploit” means to make, have made, import, use, sell, or offer for sale, including all Development, Manufacturing and Commercialization activities, and “Exploiting” and “Exploitation” will have corresponding meanings.

1.52. “Facility” has the meaning set forth in Exhibit A-1, Paragraph 3(b).

1.53. “FDA” means the United States Food and Drug Administration and any successor agency thereto.

1.54. “FFDCA” means the United States Food, Drug, and Cosmetic Act, as amended from time to time, together with any rules, regulations and requirements promulgated thereunder (including all additions, supplements, extensions, and modifications thereto).

1.55. “FTE” means a full-time scientific or technical person, or in the case of less than a full-time scientific or technical person, a full-time equivalent scientific or technical person year, carried out by an appropriately qualified employee or consultant of Moderna or its Affiliates, based on [***] person-hours [***] per year.

1.56. “FTE Costs” means the actual FTEs employed by Moderna or its Affiliates in the conduct of any Services (excluding [***]) or other activities under any of the Transaction Agreements multiplied by the FTE Rate. The FTE Cost for each FTE will cover [***] with respect to such FTE.

1.57. “FTE Rate” means [***]dollars [***] per FTE, for the calendar year 2013, and adjusted annually by [***] beginning with [***] and thereafter until the end of the Term.

1.58. “Fully Burdened Manufacturing Costs” means costs to perform Manufacturing Services and to supply a Moderna mRNA API and related inputs and services [***]; it being understood and agreed that:

(i) in the case of costs referred to [***] of this sentence [***]; *provided*, that [***]; and

(ii) in the case of costs referred to [***] of this sentence [***], which Manufacturing costs: (x) will include [***], (y) will be calculated in accordance with [***] and (z) notwithstanding anything to the contrary, will exclude [***].

1.59. “GAAP” means U.S. generally accepted accounting principles or International Financial Reporting Standards, consistently applied, as designated and used by the applicable Party.

1.60. “Good Laboratory Practice” or “GLP” means the then current standards for laboratory activities for pharmaceuticals, as set forth in the FDA’s GLP regulations and/or ICH guidelines and applicable regulations.

1.61. “Government Official” has the meaning set forth in Section 11.4(a)(i).

1.62. “HSR Act” means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the rules and regulations promulgated thereunder.

1.63. “Implementation Date” means April 29th, 2013 being the date on which the applicable waiting period under the Hart-Scott-Antitrust Improvement Act 1976 (as amended) expired or terminated following the HSR Filings (as defined in the Original Services and Collaboration Agreement) made in connection with the execution of the Original Agreements.

1.64. “Included Payments” has the meaning set forth in the A&R Option Agreement.

1.65. “Indemnification Claim Notice” has the meaning set forth in Section 8.5(c).

- 1.66. “Indemnified Party” has the meaning set forth in Section 8.5(c).
- 1.67. “Indirect Taxes” means VAT, sales taxes, consumption taxes and other similar taxes required by law to be disclosed on the invoice.
- 1.68. “Initial Payment” has the meaning set forth in the A&R Option Agreement.
- 1.69. “Issuing Party” has the meaning set forth in Section 7.3(c).
- 1.70. “Joint Patents” means all Collaboration Patents that are jointly owned by the Parties in accordance with Section 2.5(a)(iii).
- 1.71. “Joint Steering Committee; JSC” has the meaning set forth in Section 3.2(a).
- 1.72. “Joint Technology” means all Collaboration Technology that is jointly owned by the Parties in accordance with Section 2.5(a)(iii).
- 1.73. “JPC” has the meaning set forth in Section 3.1.
- 1.74. “Knowledge” means the actual good faith understanding of [***].
- 1.75. “Know-How” means all inventions, discoveries, commercial, technical, scientific and other know-how and information, trade secrets, knowledge, technology, methods, processes, practices, formulae, instructions, skills, techniques, procedures, experiences, ideas, technical assistance, designs, drawings, assembly procedures, computer programs, apparatuses, assays and biological methodology, specifications, data and results (including biological, chemical, pharmacological, toxicological, pharmaceutical, physical and analytical, laboratory, preclinical, clinical, safety, Manufacturing and quality control data and know-how, including regulatory data, study designs, protocols, laboratory notes and notebooks), in all cases, whether or not confidential, proprietary, patented or patentable, in written, electronic or any other form now known or hereafter developed.
- 1.76. “Law” or “Laws” means all laws, statutes, rules, regulations, orders, judgments, or ordinances having the effect of law of any federal, national, multinational, state, provincial, county, city or other political subdivision.
- 1.77. “LCIA” has the meaning set forth in Section 11.1(c).
- 1.78. “Losses” has the meaning set forth in Section 8.5(a).
- 1.79. “Manufacturing” means the production, manufacture, processing, filling, finishing, packaging, labeling, shipping and holding of product or any intermediate thereof, including process development, process qualification and validation, scale-up, commercial manufacture and analytic development, product characterization, stability testing, quality assurance and quality control. “Manufacturing” refers to both pre-clinical and clinical Manufacturing for Development, and Manufacturing for Commercialization.
- 1.80. [***]
- 1.81. “Manufacturing Know-How” has the meaning set forth in Section 4.5(a).
- 1.82. “Manufacturing Services” means the Moderna mRNA API Manufacturing services performed by or on behalf of Moderna (a) in accordance with the Services Plan and the terms and conditions hereunder or (b) as part of the Development Pool Services.
- 1.83. [***]
- 1.84. [***]
- 1.85. “Master Clinical Supply Agreement” has the meaning set forth in Section 4.3(a).

- 1.86. “Master Commercial Supply Agreement” has the meaning set forth in Section 4.3(b).
- 1.87. “Master Supply Agreements” has the meaning set forth in Section 4.3(b).
- 1.88. “Material Anti-Corruption Law Violation” means a violation of an Anti-Corruption Law relating to the subject matter of the Transaction Agreements which would if it were publicly known reasonably have a material adverse effect on either Party or on the reputation of a Party because of its relationship with the other Party.
- 1.89. “Materials” means any tangible chemical or biological material, including any compounds, DNA and RNA (modified and unmodified), mRNA Constructs, Polypeptides, clones, cells, constructs, vectors, receptors and other nucleic acids, proteins, peptides and any expression product, progeny, derivative or other improvement thereto, along with any tangible chemical or biological material embodying any Know-How.
- 1.90. “Moderna” has the meaning set forth in Recitals.
- 1.91. “Moderna Collaboration In-License” has the meaning set forth in Section 2.6(b).
- 1.92. “Moderna Collaboration Know-How” means any and all Collaboration Know-How owned by Moderna [***], including Moderna’s right and interest in any Joint Collaboration Know-How.
- 1.93. “Moderna Collaboration Patents” means any and all Patents that claim any of the Moderna Collaboration Know-How, including Moderna’s right and interest in any Joint Patents.
- 1.94. “Moderna Collaboration Technology” means the Moderna Collaboration Know-How and Moderna Collaboration Patents. For clarity, all Moderna Collaboration Technology will be “Controlled” for the purpose of this Agreement.
- 1.95. “Moderna Indemnitees” has the meaning set forth in Section 8.5(a).
- 1.96. “Moderna In-License” has the meaning set forth in Section 2.6(a).
- 1.97. “Moderna Know-How” means any and all Know-How Controlled by Moderna or any of its Affiliates as of the Signing Date or as to which Moderna or any of its Affiliates obtains Control during the Term that [***].
- 1.98. “Moderna mRNA API” means [***].
- 1.99. “Moderna Other In-License” has the meaning set forth in Section 2.6(e)(ii).
- 1.100. “Moderna Patents” means those Patents that are Controlled by Moderna or any of its Affiliates as of the Signing Date or as to which Moderna or any of its Affiliates obtains Control [***]. Schedule 1.100 sets forth those Moderna Patents in existence as of the Signing Date.
- 1.101. [***]
- 1.102. [***]
- 1.103. “Moderna Program Director” has the meaning set forth in Section 3.1.
- 1.104. “Moderna Representatives” has the meaning set forth in Section 11.4(a).
- 1.105. “Moderna Technology” means collectively, Moderna Know-How and Moderna Patents.
- 1.106. “mRNA Construct” means [***].
- 1.107. “mRNA Technology” means any Know-How, Materials and Patents directed or otherwise pertaining to [***], excluding any and all AstraZeneca [***] Technology [***] AstraZeneca [***] Technology.

1.108. [***]

1.109. “Original Agreements” has the meaning set forth in the Recitals.

1.110. “Original Option Agreement” has the meaning set forth in the Recitals.

1.111. “Parties” has the meaning set forth in Recitals.

1.112. “Party” has the meaning set forth in Recitals.

1.113. “Patent” means (a) a patent or a patent application, (b) any additions, priority applications, divisions, continuations, and continuations-in-part of any of the foregoing and (c) all patents issuing on any of the foregoing patent applications, together with all invention certificates, substitutions, reissues, reexaminations, registrations, supplementary protection certificates, confirmations, renewals and extensions of any of (a), (b) or (c), and foreign counterparts of any of the foregoing, but not including any rights that give rise to Regulatory Exclusivity Periods (other than supplementary protection certificates, which will be treated as “Patents” hereunder).

1.114. “Patent Costs” means the reasonable, documented, out-of-pocket costs and expenses paid to outside legal counsel, and filing and maintenance expenses, actually and reasonably incurred by a Party in Prosecuting and Maintaining Patents and enforcing and defending them.

1.115. “Person” means 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.

1.116. “Polypeptide” means, [***].

1.117. “Pre-clinical Activities” has the meaning set forth in Exhibit A-1, Paragraph 2(a).

1.118. “Product” means a human, therapeutic product that includes as an active ingredient (whether alone or in combination with one or more other active ingredients) a Collaboration mRNA Construct [***] a Development Polypeptide.

1.119. “Product Warranty” has the meaning set forth in Exhibit A-1, Paragraph 3(h).

1.120. “Program Directors” has the meaning set forth in Section 3.1.

1.121. [***]

1.122. [***]

1.123. “Receiving Party” has the meaning set forth in Section 7.1(a).

1.124. “Regulatory Approval” means, with respect to a country or extra-national territory, any and all approvals (including BLAs), licenses, registrations or authorizations of any Regulatory Authority necessary in order to commercially distribute, sell or market a product in such country or some or all of such extra-national territory, but not including any pricing or reimbursement approvals.

1.125. “Regulatory Authority” means any national (*e.g.*, the FDA), supra-national (*e.g.*, the EMA), regional, state or local regulatory agency, department, bureau, commission, council or other governmental entity, in any jurisdiction in the world, involved in the granting of Regulatory Approval.

1.126. “Regulatory Filings” means any submission to a Regulatory Authority of any appropriate regulatory application together with any related correspondence and documentation, and will include any submission to a regulatory advisory board, marketing authorization application, and any supplement or amendment thereto.

1.127. “Release” has the meaning set forth in Section 7.3(c).

1.128. “Relevant Authority” means any court or government body, whether national, supra-national, federal, state, local, foreign or provincial, including any political subdivision thereof, including any department, commission, board, bureau, agency, or other regulatory or administrative governmental authority or instrumentality, and further including any quasi-governmental Person or entity exercising the functions of any of these.

1.129. “Reviewing Party” has the meaning set forth in Section 7.3(c).

1.130. [***]

1.131. [***]

1.132. “SEC” has the meaning set forth in Section 7.3(b).

1.133. [*Reserved*].

1.134. “Services” means (a) the Development services to be performed by or on behalf of Moderna pursuant to the Services Plan as set forth herein, (b) Development Pool Services, and (c) the Manufacturing Services.

1.135. “Services Period” means for each Research Target and each Research Polypeptide [***] such Research Target, the period commencing on nomination of such Research Target or ([***)] and in both cases ending [***] after the Amendment Effective Date or, if earlier the date on which such Research Target becomes a Discontinued Target.

1.136. “Services Plan” has the meaning set forth in Section 2.3(a).

1.137. “Services Program” means the program of services for Development of mRNA Constructs using Moderna Technology in the applicable AstraZeneca Fields that is engaged in by or on behalf of the Parties prior to the Amendment Effective Date, under the Original Services and Collaboration Agreement and with effect on and from the Amendment Effective Date, under this Agreement, including Moderna’s performance of the Services and the Parties’ performance of activities under the Services Plan.

1.138. “Services Program Term” has the meaning set forth in Section 2.4(a).

1.139. “Signing Date” means March 20, 2013.

1.140. “Sublicensee” means (a) in the case of AstraZeneca, any Person (other than an Affiliate or a Distributor of AstraZeneca) that is granted a sublicense as permitted by Section 3.6(a) of the A&R Option Agreement (or an option to take such a sublicense), either (i) directly by AstraZeneca or (ii) indirectly by any Person granted rights by AstraZeneca pursuant to subclause (a)(i); or (b) in the case of Moderna, any Person (other than an Affiliate or Distributor of Moderna) that is granted a sublicense as permitted by Section 3.6(a) of the A&R Option Agreement (or an option to take such a sublicense), either (i) directly by Moderna or (ii) indirectly by any Person granted rights by Moderna pursuant to subclause (b)(i).

1.141. “Supply Failure” means [***].

1.142. “Target” means [***].

1.143. “Tax” and “Taxation” means any form of tax or taxation, levy, duty, charge, social security charge, contribution, or withholding of whatever nature (including any related fine, penalty, addition to tax, surcharge or interest) imposed by, or payable to, a Tax Authority. Notwithstanding anything herein to the contrary, Taxes will not include any Indirect Taxes.

1.144. “Tax Authority” or “Tax Authorities” means any government, state or municipality, or any local, state, federal or other fiscal, revenue, customs, or excise authority, body or official anywhere in the world, authorized to levy tax.

- 1.145. “Term” has the meaning set forth in Section 9.1.
- 1.146. “Third Party” means any Person other than Moderna, AstraZeneca and their respective Affiliates.
- 1.147. “Third Party Claims” has the meaning set forth in Section 8.5(a).
- 1.148. “Transaction Agreements” means collectively, (a) this Agreement, (b) the A&R Option Agreement and (c) that certain Put Agreement between the Parties dated November 25, 2014.
- 1.149. “Transferred API(s)” has the meaning set forth in Section 4.5.
- 1.150. “Triggering Event” has the meaning set forth in Section 4.7.
- 1.151. “United States” or “U.S.” means the United States of America, including its territories and possessions, the District of Columbia and Puerto Rico.
- 1.152. “Upfront Payment” has the meaning set forth in Section 6.1.

2. Services Program.

2.1. General. During the Services Program Term, Moderna will perform the Services and the Parties will otherwise conduct the Services Program on the terms and conditions set forth in this Agreement to identify and validate Research Polypeptides and optimize Collaboration mRNA Constructs [***] such Research Polypeptides. For each Research Polypeptide, the objective of the Services Program is to [***] that [***] such Research Polypeptide and meets the [***] Criteria.

2.2. Research Targets and Research Polypeptides.

(a) *Nomination.* From the Amendment Effective Date until the [***] anniversary of the Amendment Effective Date (the “Nomination Period”), AstraZeneca may nominate up to [***] Research Polypeptides for each AstraZeneca CV Target and the AstraZeneca Oncology Target by providing written notice to Moderna of same, provided that, subject to the overall cap of [***] Research Polypeptides per Research Target AstraZeneca may [***]. The Program Directors will maintain a current list of Research Targets and Research Polypeptides that will be Developed as a part of the Services Plan. For each Research Target, the list of Research Polypeptides nominated as of the Amendment Effective Date is set forth in Appendix A. For clarity, each such nominated Research Polypeptide counts towards the maximum nomination of [***] Research Polypeptides per Research Target, including following such Research Polypeptide becoming a Development Polypeptide or Discontinued Polypeptide. Subject to such maximum, AstraZeneca may make additional nominations of Research Polypeptides by providing an updated version of Appendix A to Moderna as provided in Section 11.16, [***]. For the purposes of this Section 2.2(a), with respect to each Research Target, each Polypeptide nominated by AstraZeneca that has [***] will be counted towards the overall cap of [***] Research Polypeptides for such Research Target even if such Polypeptides are [***].

(b) *Development of [***].* AstraZeneca may Develop Products that [***] as set forth in Section 4.4 of the A&R Option Agreement. In particular, as part of the Services Program, AstraZeneca may Develop [***] Product Candidates that [***].

(c) *Exclusion of Research Targets and Research Polypeptides from the Services Program.*

(i) AstraZeneca may, at any time, elect to exclude any Research Target from the Services Program by providing an updated version of Appendix A to Moderna as provided in Section 11.16, [***]. Upon Moderna’s receipt of such written notice, such Research Target will be excluded from the Services Program and will automatically become a Discontinued Target. For clarity, termination of Development activities relating to a particular [***] Product Candidate for a [***] Target shall not result in [***].

(ii) For each Research Target in the Services Program, AstraZeneca will keep Moderna informed of progress towards satisfaction of the Continuation Criteria for such Research Target at each JSC meeting,

including by providing the JSC at each meeting of the JSC a report (written or oral) summarizing AstraZeneca's Development activities with respect to such Research Target, including a summary of any material data and results generated by any of such Development activities. In addition, for each Research Target in the Services Program, AstraZeneca will notify Moderna in writing when in AstraZeneca's reasonable determination a Research Target has met the applicable Continuation Criteria. AstraZeneca will include in any such written notice such information and data as is necessary for Moderna to verify that the

applicable Research Target has met the applicable Continuation Criteria. To continue in the Services Program, each Research Target (other than [***]) must meet the [***] for such Research Target on or before the [***] and the [***] for such Research Target on or before the [***]. If with respect to any Research Target, AstraZeneca has not met the applicable Continuation Criteria, or has not provided notice that the applicable Continuation Criteria have been met, in each case on or prior to such [***], the Research Target will be excluded from the Services Program and automatically become a Discontinued Target. In the event that Moderna disagrees with AstraZeneca's determination as to whether a Research Target has met the [***] or [***] for such Research Target (a "Continuation Criteria Dispute"), Moderna shall provide AstraZeneca with written notice thereof within [***] days after Moderna's receipt of the applicable notice from AstraZeneca asserting that the applicable Continuation Criteria have been met (the "Continuation Criteria Dispute Notice") and Section 11.1(b) (but not Section 11.1(c)) shall apply. Development activities with respect to a Research Target will continue notwithstanding a Continuation Criteria Dispute. If during the period in which the Parties are seeking to resolve a Continuation Criteria Dispute, [***]; *provided*, that [***]. In the event that Moderna does not provide AstraZeneca with the Continuation Criteria Dispute Notice within the [***] day period specified in this Section 2.2(c)(ii), Moderna shall be deemed to have agreed with AstraZeneca's determination as set forth in the applicable notice from AstraZeneca asserting that the applicable Continuation Criteria have been met.

(iii) If a Research Target becomes a Discontinued Target, in addition to any other consequences applicable to Discontinued Targets set forth in the Transaction Agreements, Sections 2.2 and 3.4 of the A&R Option Agreement will apply.

2.3. Services Plan.

(a) *Performance.* During the Services Period for each Research Target (and all Research Polypeptides for such Research Target), Moderna will perform the Services and the Parties will otherwise carry out the Services Program for such Research Target in accordance with a written research plan (the "Services Plan"). The Services Plan will set forth, on a Research Target-by-Research Target basis, all Development activities of the Parties with respect to Collaboration mRNA Constructs generated by Moderna and [***] Research Polypeptides for such Research Target during the applicable Services Period. The purpose of the Services Plan is to detail the responsibilities and activities of (1) Moderna with respect to carrying out the Services, and (2) the Parties with respect to otherwise carrying out the Services Program. The Services Plan will include [***]. The Parties agree that as part of any Services Plan, AstraZeneca may request reasonable quantities and Moderna will use Commercially Reasonable Efforts to provide reasonable quantities of [***] to AstraZeneca at a cost to AstraZeneca of [***] for use as part of the Services Program for a Research Target. For clarity, a failure by Moderna to supply such [***] will not result in a Triggering Event. The Services Plan will provide that Moderna (and not AstraZeneca) is responsible for Manufacturing mRNA Constructs. The Services Plan may be updated and amended by the JSC in accordance with Section 3.2(c) from time to time.

(b) *Obligations Under the Services Plan.* Moderna will use Commercially Reasonable Efforts to perform (itself or through its Affiliates or by permitted subcontracting pursuant to Section 2.10) the Services, and each Party will otherwise use Commercially Reasonable Efforts to perform (itself or through its Affiliates or by permitted subcontracting pursuant to Section 2.10)

its respective obligations under the Services Plan. Each Party will cooperate with and provide reasonable support to the other Party in such other Party's performance of its responsibilities under the Services Plan. Each Party will keep the other Party reasonably informed of such Party's Development activities under the Services Program and will reasonably consult with such other Party and reasonably consider such other Party's comments and advice with respect to all material decisions relating to such activities. The Parties acknowledge and agree, however, that no outcome or success is or can be assured and that failure to achieve desired results will not in and of itself constitute a breach or default of any obligation in this Agreement (notwithstanding the

focus of the Services Program described above). The Parties will Develop and Commercialize under the Transaction Agreements only Collaboration mRNA Constructs, and no other mRNA Constructs.

(c) *FTEs*. The Services Plan will set forth the expected number of FTEs required to perform the Services allocated to Moderna (excluding, for clarity, Manufacturing Services). AstraZeneca will reimburse Moderna [***] for Moderna's FTE Costs for such FTEs. [***]. Those individuals selected by Moderna to perform the Services and otherwise support the Development and other activities to be undertaken by Moderna under the Services Plan and as part of the Services Program will [***]. In the event that AstraZeneca has concerns regarding the selection of an individual to perform the Services or other activities under this Agreement, the Parties will discuss such concerns in good faith.

(d) [***]. Moderna will (a) use good faith efforts to ensure [***]; and (b) use diligent efforts to ensure [***]. For clarity, any mRNA Constructs that are not Developed in the course of performing activities under the Services Program (under or in connection with this Agreement or the Original Services and Collaboration Agreement) will not constitute Collaboration mRNA Constructs.

(e) *Updates*. Any modifications or amendments to the Services Plan that are proposed by either Party will be subject to review and prior approval by the JSC pursuant to and in accordance with the terms of Section 3.2(c).

2.4. Services Program Term; Development Pool Services.

(a) *Duration*. Unless (i) terminated pursuant to the terms hereof, or (ii) extended by mutual agreement of the Parties, the term of the Services Program will commence on the Implementation Date and will continue until expiration of the period of [***] from the Amendment Effective Date (the "Services Program Term"); provided that if the Services Period is extended for any Research Target pursuant to Section 2.2(c)(ii), the Services Program Term as applicable to such Research Target shall continue until expiration of such Service Period.

(b) *Development Pool Services*. During the period after the end of the applicable Services Period until the [***] of the Implementation Date, if AstraZeneca reasonably requests that Moderna perform additional Services during the Option Agreement Term (excluding, for clarity, Manufacturing Services) in support of the evaluation of any Development Pool Candidate ("Development Pool Services"), the Parties will negotiate in good faith the terms and conditions of such performance. In the event the Parties agree on such terms and conditions, Moderna will use Commercially Reasonable Efforts to perform (itself or through its Affiliates or by permitted subcontracting pursuant to Section 2.10) such Development Pools Services in accordance with

such terms and conditions as may be agreed to by the Parties, and AstraZeneca will reimburse Moderna [***] for Moderna's FTE Costs incurred in performing such Development Pool Services. [***].

(c) *Termination of Services*. All Services and other Development work hereunder will terminate on the [***] of the Implementation Date.

2.5. Ownership of Technology.

(a) *Ownership of Technology*

(i) Ownership of [***]. Subject to the license grants to AstraZeneca under any Transaction Agreement, as between the Parties, Moderna will own and retain all right, title and interest in and to all [***]. Accordingly, AstraZeneca will promptly disclose to Moderna in writing, the conception or reduction to practice, or the discovery, development or making of any [***]. AstraZeneca, for itself and on behalf of its Affiliates, hereby assigns (and to the extent such assignment can only be made in the future hereby agrees to assign), to Moderna all its right, title and interest in and to any [***]. AstraZeneca will cooperate, and will cause the foregoing persons and entities to cooperate, with Moderna to effectuate and perfect the foregoing ownership, including by promptly executing and recording assignments and other documents consistent with such ownership. Notwithstanding the foregoing, [***] will not include any [***] (collectively, "AstraZeneca [***] Technology").

(ii) Ownership of other arising Technology. Subject to Section 2.5(a)(i), all Know-How, Materials and Patents conceived, discovered, developed or otherwise made, by or on behalf of either Party (or its Affiliates or Sublicensees) either alone or jointly with Third Party(ies) or by the Parties or their Affiliates jointly under or in connection with the Transaction Agreements, whether or not conceived, discovered, developed or otherwise made at a facility owned or controlled by such Party and whether or not patented or patentable, and any and all Patent and other intellectual property rights with respect thereto will be owned in accordance with inventorship and in accordance with applicable law in the United States.

(iii) United States Law. The determination of whether Know-How, Materials and Patents are conceived, discovered, developed or otherwise made by a Party for the purpose of allocating proprietary rights (including Patent, copyright or other intellectual property rights) therein, will, for purposes of this Agreement, be made in accordance with applicable law in the United States. In the event that United States law does not apply to the conception, discovery, development or making of any Know-How, Materials or Patents hereunder, each Party will, and does hereby, assign, and will cause its Affiliates and sublicensees to so assign, to the other Party, without additional compensation, such right, title and interest in and to any Know-How, Materials and Patents as well as any intellectual property rights with respect thereto, as is necessary to fully effect ownership as would have been determined under U.S. law.

(iv) [***].

(b) *Exploitation of Joint Technology*. Subject to Section 2.5(a)(i), 2.5(a)(iii) and to the license grants under the Transaction Agreements, the Parties will each own an equal, undivided interest in any and all Joint Technology. Each Party will exercise its ownership rights in and to

such Joint Technology, including the right to license and sublicense or otherwise to Exploit, transfer or encumber its ownership interest, without an accounting or obligation to, or consent required from, the other Party, but subject to the license grants under the Transaction Agreements. At the reasonable written request of a Party, the other Party will in writing grant such consents and confirm that no such accounting is required to effect the foregoing regarding Joint Technology. Each Party will promptly disclose to the other Party in writing, and will cause its Affiliates, licensees and permitted sublicensees to so disclose, the development, making, conception or reduction of practice of any inventions in connection with work conducted under or in connection with this Agreement or the Original Services & Collaboration Agreement. Each Party will, and does hereby, assign, and will cause its Affiliates, licensees and sublicensees to so assign, to the other Party, without additional compensation, such right, title and interest in and to any Joint Technology as well as any intellectual property rights with respect thereto, as is necessary to fully effect the joint ownership provided for in the first sentence of this Section 2.5(b).

(c) *No Implied Rights*. No license, sublicense or other right is or will be created or granted hereunder by implication, estoppel or otherwise. Any licenses, sublicenses or rights will be granted only as expressly provided in the Transaction Agreements. Neither Party nor any of its Affiliates will use or practice any Know-How, Materials or Patents licensed or provided to such Party or any of its Affiliates outside the scope of or otherwise not in compliance with the rights and licenses granted to such Party and its Affiliates under the Transaction Agreements.

2.6. Third Party In-Licenses.

(a) *Moderna In-Licenses*. In the event that Moderna identifies any Patents or Know-How of a Third Party that may [***], Moderna may independently negotiate and enter into an agreement to obtain a license or other rights to such Patents or Know-How (each such agreement, a "Moderna In-License"); *provided*, that Moderna (i) will [***] and (ii) will reserve the right in such Moderna In-License to [***].

(b) *Moderna Collaboration In-Licenses*. If during the Services Program Term Moderna enters into any Moderna In-License, Moderna will, through written notice, bring such Moderna In-License to the attention of the JSC [***]. If a Moderna In-License is brought to the attention of the JSC pursuant to this Section 2.6(b), the Parties will, through the JSC, discuss in good faith whether such Moderna In-License should be made available for use [***]. Moderna will disclose the terms of the Moderna In-License to the JSC, subject to [***], and otherwise provide AstraZeneca with such assistance and information that AstraZeneca reasonably requires to assess whether or not [***]. If AstraZeneca notifies Moderna in writing within [***] days after the time when Moderna brought the Moderna In-License to the attention of the JSC or AstraZeneca, as applicable, that such

Moderna In-License should be made available for use by [***] (each such Moderna In-License, a “Moderna Collaboration In-License”), then (i) the Patents and Know-How in-licensed under such Moderna In-License will be deemed Moderna Technology, and (ii) AstraZeneca will be required to make the payments set forth in Section 2.8(b); *provided*, that [***]. If AstraZeneca concludes that such Moderna In-License should not be made available [***], then subject to Section 2.6(c), [***].

(c) *Conversion of Moderna In-Licenses.* AstraZeneca may elect to convert any Moderna In-License to a Moderna Collaboration In-License by (i) providing written notice to Moderna of the same and (ii) [***]; *provided*, [***]. Upon Moderna’s receipt of such notice [***], such Moderna In-License will be a Moderna Collaboration In-License hereunder, and the provisions of this Agreement applicable to Moderna Collaboration In-Licenses will apply with respect to such Moderna In-License. Notwithstanding the foregoing, prior to converting any Moderna In-License to a Moderna Collaboration In-License, the Parties will agree on [***].

(d) *Moderna Collaboration In-License Requirements.* AstraZeneca will abide, and will cause all its Affiliates and applicable Sublicensees to abide, by all requirements of each Moderna Collaboration In-License in all material respects (and in any case in all respects in the case that [***]), to the extent applicable to sublicensees thereunder and to the extent disclosed by Moderna to AstraZeneca pursuant to Section 2.6(b) prior to AstraZeneca’s conclusion to have the Moderna In-License made available, with the understanding that disclosure by Moderna of any Moderna Collaboration In-License to AstraZeneca will be deemed disclosure of such requirements of such Moderna Collaboration In-License so disclosed to AstraZeneca.

(e) *AstraZeneca In-Licenses; Moderna Other In-Licenses.*

(i) In the event that AstraZeneca identifies any Patents or Know-How of a Third Party that [***] (each such agreement, an “AstraZeneca In-License”). AstraZeneca will notify Moderna of such AstraZeneca In-License. In the event that such notice is given and Moderna concludes that such AstraZeneca In-License should be made available [***], then the Parties will discuss in good faith whether and on what terms AstraZeneca would grant Moderna rights under any such AstraZeneca In-License.

(ii) Subject to Section 2.6(a), in the event that Moderna identifies any Patents or Know-How of a Third Party that [***], Moderna may independently negotiate and enter into an agreement to obtain a license or other rights to such Patents or Know-How [***] (each such agreement, a “Moderna Other In-License”). Moderna may notify AstraZeneca of such Moderna Other In-License. In the event that such notice is given and [***] such Moderna Other In-License should be made available [***], then the Parties will discuss in good faith whether and on what terms Moderna would grant AstraZeneca rights under any such Moderna Other In-License.

(f) [***]

2.7. [***]

2.8. Services Program Expenses.

(a) *Expenses.* Except as otherwise provided in this Agreement, each of Moderna and AstraZeneca will be responsible for all of its internal and out-of-pocket costs and expenses in connection with the performance of the Services Plan; *provided*, that AstraZeneca will reimburse Moderna for any direct, reasonable and verifiable out-of-pocket costs that are specified in and in accordance with any budget for the Services Plan and incurred by Moderna in connection with the performance of the Services or other activities as a part of the Services Program. Moderna will issue an invoice each month covering costs that are reimbursable by AstraZeneca pursuant to the foregoing sentence. AstraZeneca agrees to pay each such invoice within [***] days of AstraZeneca’s receipt thereof, subject to the provisions in Section 6.2.

(b) *Moderna Collaboration In-License Payments.*

(i) If any payments previously disclosed to AstraZeneca pursuant to Section 2.6(b) become due during the Services Program Term under any Moderna Collaboration In-License, [***]; *provided*, that (i) [***] within [***] days of [***] (excluding [***] and (ii) such payment obligation is not specifically attributable to activities under the A&R Option Agreement, which will be addressed thereunder.

(ii) Notwithstanding Section 2.8(b)(i), if any payments previously disclosed to AstraZeneca pursuant to Section 2.6(b) become due during the Services Program Term under any Moderna Collaboration In-License that is a [***]; *provided*, that (1) [***] within [***] (excluding [***]).

2.9. Services Program Records, Reports and Materials.

(a) *Records.* Each Party will maintain, or cause to be maintained, records of its activities under the Services Program in sufficient detail and in good scientific manner appropriate for scientific, Patent and regulatory purposes, that will properly reflect all work included in the Services Program, for a period of at least [***] after the creation of such records, but in no event less than required by applicable Laws. Each Party will have the right to request a copy of any such records.

(b) *Services Program Reports.* Each Party will furnish to the JSC a summary written report within [***] days after each [***] and [***] occurring during the Services Program Term, describing its progress under the Services Plan as part of the Services Program during the previous [***] period. The JSC may periodically request summary reports from either Party updating the JSC as to the progress under the Services Plan during any intermediate intervening periods between such [***] reports.

(c) *Materials.*

(i) Other than as set forth in Section 4, each Party will, during the Services Program Term, as a matter of course as described in the Services Plan or upon the other Party's reasonable written request, furnish to each other samples of Materials that are in such Party's Control and [***].

(ii) Each Party will use any Materials provided by the other Party hereunder, including as set forth in Section 4 and Exhibit A-1, only in accordance with the Services Plan and otherwise in accordance with the terms and conditions of this Agreement and any reasonable instructions provided by the Party furnishing the Materials. Except with the prior written consent of the supplying Party (such consent not to be unreasonably withheld, delayed or conditioned), the Party receiving any Materials will not [***]. All Materials delivered to the receiving Party, other than pursuant to [***], will remain the sole property of the supplying Party and will be used in compliance with all applicable Law. The Materials supplied under this Agreement will be used with prudence and appropriate caution in any experimental work because not all of their characteristics may be known. This Section 2.9(c)(ii) will not apply to [***].

2.10. Permitted Subcontracting and Sublicensing. Subject to the other terms of the Transaction Agreements, including Section 4 with respect to Manufacturing Services, Section 4.6 of the A&R Option Agreement with respect to the Development Pool Services, any Master Supply Agreement (and any associated Quality Assurance Agreement), and Section 2.12, Moderna may subcontract the Services and each Party may otherwise subcontract any of its activities to be performed under the Services Plan to an Affiliate or a Third Party; *provided*, that no such permitted subcontracting shall relieve the subcontracting Party of any of its obligations (except to the extent satisfactorily performed by such subcontractor). In the event that either Party subcontracts activities pursuant to this Section 2.10 to an Affiliate or Third Party, such Affiliate or Third Party will have entered into a written agreement with such Party that includes terms and conditions protecting and limiting use and disclosure of Confidential Information and Materials and Know-How at least to the same extent as under this Agreement, and requiring such Third Party and its personnel to assign to such Party all right, title and interest in and to any Patents, Know-How and Materials created, conceived or developed in connection with the performance of subcontracted activities to the extent required to Exploit Product Candidates. Any such subcontracting activities will be described in the reports for the Services Program required by Section 2.9(b). To the extent that any subcontractor needs a sublicense to perform the Services, Section 3.6 of the A&R Option Agreement will apply.

2.11. Regulatory Activities. From the Implementation Date until the [***] of the Implementation Date, and subject to any Third Party confidentiality obligations, each Party will through the JSC keep the other Party appropriately informed of [***]. Upon the request of either Party, and subject to any Third Party confidentiality obligations, the Parties will discuss in good faith appropriate [***]. Each Party will use Commercially Reasonable Efforts to [***]. Notwithstanding the foregoing, (a) except to the extent required by applicable Law, AstraZeneca will have the sole right to [***]; and (b) this Section 2.11 (i) will not require Moderna to disclose any [***] and (ii) will terminate after the Program Services Term upon [***].

2.12. Applicable Laws and Bioethics Policy. The Services and Services Program (and any applicable Development Pool Services) to be conducted by each Party (including by its subcontractors) pursuant to this Agreement or the A&R Option Agreement will be carried out in good scientific manner and in compliance with all applicable Laws, as well as the AstraZeneca bioethics policy attached at Schedule 2.12, to attempt to achieve efficiently and expeditiously the objectives of the applicable Services Program (or Development Pool Services, if applicable). Notwithstanding the provisions of Section 2.10, in respect of any Services (or Development Pool Services, if applicable) to be performed by or on behalf of Moderna to be initiated after the Implementation Date, Moderna and AstraZeneca will mutually agree [***].

3. Governance.

3.1. Services Program Management. Following the Implementation Date, each Party will appoint a person who will oversee day-to-day contact between the Parties for all matters related to the collaboration and management of the Services Program activities in between meetings of the JSC and the joint patent committee as constituted under the A&R Option Agreement (such joint patent committee, the “JPC”) and will have such other responsibilities as the Parties may agree in writing after the Implementation Date. One person will be designated by AstraZeneca (the “AstraZeneca Program Director”) and one person will be designated by Moderna

(the “Moderna Program Director,”) together will be the “Program Directors”. Each Party may replace its Program Director at any time by notice in writing to the other Party. Any Program Director may designate a substitute to temporarily perform the functions of that Program Director by written notice to the other Party.

3.2. Joint Steering Committee.

(a) *Formation and Membership.* Following the Implementation Date, the Parties will establish a joint steering committee (the “Joint Steering Committee” or “JSC”), comprised of [***] representatives of Moderna and [***] representatives of AstraZeneca. Each JSC member will be a senior development leader or have similar experience and expertise as a senior development leader. Each Party may replace its representatives on the JSC at any time upon written notice to the other Party. With the consent of the other Party (such consent not to be unreasonably withheld, delayed or conditioned), each Party may invite non-voting employees and consultants to attend meetings of the JSC, subject to their agreement to be bound to the same extent as a permitted subcontractor under Section 2.10. Program Directors will attend JSC meetings as participating non-members.

(b) *Meetings.* While in existence, the JSC will meet each [***] (or more frequently as may be determined by the JSC) and may hold meetings in person or by audio or video conference as determined by the JSC, but at a minimum, [***] of such meetings each calendar year starting in 2013 will be in person (which in-person meeting will be held at [***]). Meetings of the JSC will be effective only if at least [***] representative of each Party is present or participating. Each Party will be responsible for all of its own expenses of participating in the meetings. The Parties will endeavor to schedule meetings of the JSC at least [***] in advance. The JSC will determine the JSC operating procedures and will codify these operating procedures in the written minutes of the first meeting (or subsequent meetings as such procedures are updated). The JSC will prepare and circulate a meeting agenda prior to each such meeting. The Parties will alternate in preparing written minutes of such meeting, and the preparing Party will circulate such minutes within [***] days after such meeting. The Parties will agree on the minutes of each meeting promptly, but in no event later than the next meeting of the JSC. Each Party will designate one of its three representatives who is empowered by such Party to make decisions related to the performance of such Party’s obligations under the Transaction Agreements to act as the co-chair of each JSC. The co-chairs will be responsible for overseeing the activities of its JSC members consistent with the responsibilities set forth in Section 3.2(c).

(c) *Responsibilities.* The JSC will oversee the Services Program and the performance of the Services Plan. It is envisioned that the JSC will form project teams to deal with the day-to-day work to execute the Services Plan for particular Research Polypeptides. Without limiting the generality of the foregoing, within such scope, the JSC will have the following responsibilities:

(i) Review Moderna’s performance of the Services and the Parties’ other efforts and progress under the Services Plan;

(ii) Review and approve of the Services Program;

(iii) Propose and approve of any proposed modifications or amendments to a Services Plan and the Services Program (other than minor, day-to-day modifications to the Services Plan and the Services Program made by the project teams (if applicable) and changes that do not affect Moderna), including the selection of Collaboration mRNA Constructs for additional work as part of the Services Program;

(iv) Prioritize and oversee execution of specific activities to be performed under the Services Plan and the Services Program;

(v) Resolve all disputes referred to the JSC by any subcommittee or project teams established by the JSC;

(vi) Review and approve the [***];

(vii) Review and approve quarterly reports from Moderna setting forth [***] incurred by Moderna for which Moderna seeks reimbursement;

(viii) Determine the specific number of FTEs [***] to be dedicated by Moderna in performing the Services and Development activities under the Services Plan and as part of the Services Program in accordance with Section 2.3(c);

(ix) Review data, reports or other information submitted by either Party with respect to development activities performed under a Services Plan and the Services Program by or on behalf of such Party;

(x) Update the Services Plan to include activities with respect to new Research Polypeptides;

(xi) Monitor that all activities are compliant with AstraZeneca's Bioethics policy and other compliance standards of importance to AstraZeneca or Moderna;

(xii) Form such other committees or project teams as the JSC may deem appropriate (including any project teams to deal with the day-to-day work to execute the Services Plan for a particular Research Polypeptide) and oversee the work of the JPC and any other committees or project teams formed by the JSC (but without alteration of the governance of the JPC as set forth in Section 10.1 of the A&R Option Agreement), including by receiving and reviewing reports and other information submitted by those joint committees and project teams (if applicable); *provided*, that any such committee or project team may make recommendations to the JSC but may not be delegated JSC decision-making authority;

(xiii) Review and approve the regulatory pathway for the approval by Regulatory Authorities of Collaboration mRNA Constructs as medicinal products and material submissions to Regulatory Authorities with respect to such pathway;

(xiv) Review proposed publications regarding the results of the Services Program proposed to be published in accordance with Section 7.2.

(xv) Address such other matters relating to the activities of the Parties under this Agreement as either Party may bring before the JSC, including any matters that are expressly for the JSC to decide as provided in this Agreement; and

(xvi) Attempt to resolve any disputes relating to the Transaction Agreements on an informal basis.

(d) *Decision-making.* The [***] JSC representatives of each Party will collectively have one (1) vote. The JSC members will use reasonable efforts to reach agreement on all matters. If, despite such efforts, agreement on a particular matter cannot be reached by the JSC within [***] days after the JSC first considers such matter (or such shorter time as may be reasonable in the circumstances), then [***].

(e) *Resolution of Certain Matters.* Notwithstanding the provisions of Section 3.2(d) in the event of a dispute or disagreement arising in, or referred to, the JSC relating to [***] that cannot be resolved by the members of the JSC, upon the written request of a Party, such matter will be referred to the Executive Officers (or their designees, which designee is required to have decision-making authority on behalf of such Party), who

will attempt in good faith to resolve such dispute by negotiation and consultation for a [***] period following receipt of such written notice. If, despite such efforts, agreement on a particular matter cannot be reached by the Executive Officers within such [***] period, then [***].

(f) *Limits on JSC Authority.* Each Party will retain the rights, powers and discretion granted to it under this Agreement and no such rights, powers, or discretion will be delegated to or vested in the JSC unless such delegation or vesting of rights is expressly provided for in this Agreement or the Parties expressly so agree in writing. The JSC will not have the power to [***]. Any dispute between the Parties regarding the issues set forth in this Section 3.2(f) will be resolved pursuant to the procedures set forth in Section 11.1.

(g) *Scope of JSC Responsibilities and Term.* Unless otherwise agreed by the Parties or as provided in Section 9.4, the JSC will continue to exist throughout the Term; provided that [***] after the end of the Services Program Term, the responsibilities of the JSC will be limited to those allocated to it in Section 4, Exhibit A-1 and as provided in Section 5.4 of the A&R Option Agreement. After expiration of the Services Program Term, the membership of the JSC will be adjusted to reflect such amended responsibilities, and will meet as reasonably required, and on such notice, as necessary to fulfil those responsibilities, each as determined by the JSC; provided that if a meeting of the JSC is required to address any matter for which the JSC is responsible, either Party may call such meeting on not less than [***] days' notice).

4. **Manufacturing.**

4.1. **General Obligation to Supply.** Subject to the terms and conditions of the Transaction Agreements and in particular this Section 4, Exhibit A-1 and Exhibit A-2, Moderna will Manufacture and supply to AstraZeneca, and AstraZeneca will purchase exclusively from Moderna, such quantities of Moderna mRNA API as AstraZeneca may reasonably require in connection with the Exploitation of Collaboration mRNA Constructs, Product Candidates and Products; *provided*, that such obligation to purchase exclusively from Moderna will no longer

apply with respect to Moderna mRNA API for a given Product at such time as [***]. Notwithstanding the foregoing, the Parties acknowledge and agree that AstraZeneca will have no right to acquire from Moderna, and Moderna will have no obligation to Manufacture and supply to AstraZeneca, any Moderna mRNA API for use in connection with the Commercialization of any Product unless and until AstraZeneca has exercised its Option as set forth in Section 6.6 of the A&R Option Agreement and paid the applicable Initial Payment under the A&R Option Agreement with respect to such Product. Except (a) following a Triggering Event as described in Section 4.7, (b) on a Product-by-Product basis, at such time as [***], or (c) [***], neither AstraZeneca nor any Affiliate of AstraZeneca (nor any others on behalf of or under license or sublicense from AstraZeneca or any of its Affiliates) will Manufacture (i) any Moderna mRNA API or (ii) Product, except for the Manufacture of Product using Moderna mRNA API supplied by or on behalf of Moderna. For clarity, the rights and obligations under this Section 4, Exhibit A-1 and Exhibit A-2 relate solely to unformulated Moderna mRNA API, unless otherwise agreed by the Parties. AstraZeneca, for itself, its Affiliates and all others acting on behalf of or under license or sublicense from AstraZeneca or any of its Affiliates, will purchase from Moderna all mRNA Constructs to be Exploited under any of the Transaction Agreements or any of the Master Supply Agreements, unless and until (i) there is a Triggering Event, or (ii) [***].

4.2. **Non-cGMP Supply for Services Program.** In accordance with Exhibit A-1, Moderna will Manufacture and supply AstraZeneca with non-cGMP Moderna mRNA API for use in support of the Services Program, Development Pool Services or Pre-Clinical Activities, as applicable, with respect to each applicable Collaboration mRNA Construct. For clarity, the charges for such Manufacturing Services are as provided in Exhibit A-1 and are inclusive of [***].

4.3. **cGMP Supply Agreements.**

(a) AstraZeneca and Moderna have entered into a master clinical supply agreement (dated April 23, 2015) and related quality agreement pursuant to which Moderna will continue to supply to AstraZeneca cGMP Moderna mRNA API for clinical Development of Product Candidates and Products and for any other activities under the Transaction Documents that require cGMP Moderna mRNA API, all in accordance with the Transaction Agreements (as may be amended, the "Master Clinical Supply Agreement") as required under Section 4.1, in such quantities as AstraZeneca may order in accordance with the terms and conditions of such agreement.

(b) At any time after [***], AstraZeneca may notify Moderna that it desires to commence negotiations of a master commercial supply agreement and related quality agreement pursuant to which Moderna will supply to AstraZeneca cGMP Moderna mRNA API as required under Section 4.1, in such quantities as AstraZeneca may order in accordance with the terms and conditions of such agreement for Commercialization of Products in accordance with the Transaction Agreements. Not later than [***] after such notice, AstraZeneca and Moderna will enter into such agreement (the “Master Commercial Supply Agreement” and, together with the Master Clinical Supply Agreement, the “Master Supply Agreements”).

(c) Each Master Supply Agreement will contain such terms as are reasonable and customary for similar supply agreements, including the terms and conditions described in Exhibit A-2, and will be negotiated and agreed by the Parties in good faith. In the event that the Parties

are not able to agree on such terms to be included in either Master Commercial Supply Agreement within the applicable time periods specified in clauses (a) or (b), as applicable, after negotiation and escalation under Section 11.1(b), the disputed terms will be referred to and finally resolved [***].

4.4. [***]

(a) Following selection of a Product Candidate pursuant to Section 4.1(a) of the A&R Option Agreement, AstraZeneca will provide to Moderna, information regarding the scope and substance of its anticipated clinical Development and Commercialization activities requiring Moderna mRNA API for such Product Candidate (assuming that it becomes an Optioned Product Candidate) (“AstraZeneca Anticipated Requirements”). At the first meeting of the JSC following Moderna’s receipt of the AstraZeneca Anticipated Requirements for an Product Candidate, Moderna will [***].

(b) During the Term (and thereafter during the term of any Master Supply Agreement), Moderna will [***].

(c) In the event that AstraZeneca, at any time in good faith, asserts that [***].

4.5. Technology Transfer. Promptly after the occurrence of any Triggering Event, Moderna will provide written notice thereof to AstraZeneca. After receipt of such notice, or after becoming aware of the occurrence of any Triggering Event, AstraZeneca will notify Moderna by written notice whether the rights and obligations under this Section 4.5 and Section 4.6 will apply to [***]; *provided*, that AstraZeneca may not elect to have the rights and obligations under this Section 4.5 and Section 4.6 apply to clause (b) under the following circumstances: (i) [***] and (iii) [***], in which case [***] will apply, unless and until another Triggering Event occurs (the Moderna mRNA API(s) that are the subject of the transfer [***], the “Transferred API(s)”). Within [***] days of a Triggering Event, Moderna will, and will cause its Affiliates and its manufacturers to, [***]. Without limiting the generality of the foregoing, with respect to each Transferred API [***] with respect to which AstraZeneca requests and is entitled to a technology transfer, Moderna and its Affiliates will, and Moderna will [***], at AstraZeneca’s expense:

(a) make available to AstraZeneca [***] a copy of [***] (the “Manufacturing Know-How”);

(b) cause appropriate employees and representatives of Moderna and its Affiliates and [***] to [***];

(c) take such steps as are [***];

(d) upon AstraZeneca’s request, [***];

(e) upon AstraZeneca’s request, [***]; and

(f) provide such other assistance as AstraZeneca may reasonably request to enable AstraZeneca or its designee to Manufacture the Transferred APIs [***] in accordance with the applicable Specifications, including [***].

Except as set forth above, [***] in connection with such technology transfer, and AstraZeneca will be [***] in connection with such technology transfer. AstraZeneca and its Third Party manufacturer may only use the Manufacturing Know-How provided to AstraZeneca pursuant to this Section 4.5 in support of Manufacturing

the Transferred API(s) for so long as it elects (subject to the last sentence of this paragraph) and solely in accordance with the Transaction Agreements, and will not use any such Manufacturing Know-How for any other reason or for any other product or product candidate (or intermediate or component thereof). [***] Following the completion of the technology transfer for the Transferred API(s), AstraZeneca will notify Moderna regarding whether, for how long and to what extent it would expect to continue to purchase the Transferred API(s) from Moderna if problems leading to the Triggering Event were rectified.

4.6. [***]

4.7. Triggering Events. For the purposes of this Agreement [***], “Triggering Event” means:

(f) [***].

4.8. Force Majeure. In the case of a force majeure event described in Section 11.8 related to Manufacturing hereunder by or on behalf of Moderna or any force majeure event under any Master Supply Agreement that causes or is likely to cause an inability or materially reduced ability to supply Moderna mRNA API to AstraZeneca hereunder or thereunder, the Parties agree to negotiate in good faith the most optimal manner in which to overcome such inability or materially reduced ability as promptly as practical, taking into account cost and quality. If the Parties agree that such inability or material reduced ability would be more expediently remedied, taking into account cost and quality, if AstraZeneca assumed responsibility for such Manufacturing, then the Parties will agree in writing on a plan for such assumption, consent not to be unreasonably withheld.

4.9. Manufacturing Know-How Confidentiality. In addition to the provisions of Section 7, AstraZeneca recognizes that maintaining the confidentiality and trade secret nature of the Manufacturing Know-How requires an even higher level of vigilance than other Confidential Information, and agrees to (a) maintain in confidence Manufacturing Know-How with the same degree of care that AstraZeneca uses to protect its own like information, (b) strictly limit access to and use of Manufacturing Know-How to employees, representatives, consultants and contractors of AstraZeneca, its Affiliates and its designated Third Party contract manufacturers with a need to know such information, and (c) use Manufacturing Know-How only for producing Moderna mRNA API in accordance with a license granted by Moderna and for no other purpose.

AstraZeneca will ensure that any person having access to the Manufacturing Know-How will be made aware of its highly confidential nature and will agree to be bound by confidentiality terms no less stringent than those in this Agreement.

4.10. Preparation of CMC Section and DMF. If not previously prepared and filed, Moderna will, at AstraZeneca’s request, prepare and file with Regulatory Authorities a DMF and provide such other information and assistance as AstraZeneca may reasonably require in connection with the completion of and submission of applications for Regulatory Approvals for Products. AstraZeneca may refer to such DMF in any filing made in connection with obtaining or maintaining a Regulatory Approval for a Product. Moderna will be responsible for assuring that during any period in which Moderna has a supply obligation to AstraZeneca for mRNA API, such DMF will be in the form appropriate for filing with the Regulatory Authorities in the United States, the European Union, Japan and such other countries as requested by AstraZeneca. Moderna will, on written request by AstraZeneca or its Affiliate or Sublicensee, provide to the requesting party and to any specified Regulatory Authority a letter, in the form reasonably required by the requesting party, acknowledging that the requesting party has a right of reference to any such DMF. [***]

5. Regulatory Responsibilities.

5.1. In General. As set forth in greater detail below in this Section 5, AstraZeneca will lead and have sole control of all regulatory efforts for Collaboration mRNA Constructs, Product Candidates, and Products worldwide, including with respect to preparing and filing the relevant Regulatory Filings and all communications with Regulatory Authorities.

5.2. Regulatory Filings. AstraZeneca will be responsible for preparing and submitting all Regulatory Filings related to Collaboration mRNA Constructs, Product Candidates, and Products, including all applications for Regulatory Approval. All applications for Regulatory Approval, the Regulatory Approvals, and other

Regulatory Filings (including all INDs) relating to Collaboration mRNA Constructs, Product Candidates, and Products will be the property of AstraZeneca and held in the name of AstraZeneca or its designees.

5.3. Interactions with Regulatory Authorities. AstraZeneca will have the sole right to conduct all communications with the Regulatory Authorities, including all meetings, conferences and discussions (including advisory committee meetings), with regard to Collaboration mRNA Constructs, Product Candidates, and Products in the Territory.

5.4. Moderna Regulatory Responsibilities Related to Manufacture. Consistent with the provisions of Section 4.10, Moderna will, at its sole cost and expense, obtain and maintain all approvals, licenses, registrations, or authorizations (other than the Regulatory Approval for a Product) that are necessary or useful in connection with the Manufacture of Collaboration mRNA Constructs, Product Candidates, and Products by or on behalf of Moderna. In addition, [***], prepare the Chemistry, Manufacturing, and Controls (“CMC”) and other Manufacturing provisions with respect to all Regulatory Filings for, or that are otherwise necessary to obtain and maintain, Regulatory Approvals for the Products, including with respect to any Manufacture and supply of Collaboration mRNA Constructs, Product Candidates, and Products by or on behalf of Moderna pursuant to Section 4, including any amendments with respect thereto [***]. As set forth in greater detail in Section 4.10, the CMC section of a Regulatory Approval for a Product may reference Moderna’s DMF for such Product.

5.5. Cooperation. Without limiting the provisions of Section 5.4, during the Services Program Term, Moderna will cooperate with any reasonable requests for assistance from AstraZeneca with respect to obtaining any Regulatory Approval of Collaboration mRNA Constructs, Product Candidates, and Products and maintaining any Regulatory Approval of Collaboration mRNA Constructs, Product Candidates, and Products that is held by AstraZeneca, including by: [***]. Assistance provided by Moderna to AstraZeneca pursuant to this Section 5.5 [***]. An estimate of such costs and expenses will be provided to AstraZeneca before the initiation of any agreed work.

6. Payment.

6.1. Up-Front Payment. AstraZeneca paid to Moderna within [***] Business Days of the Implementation Date a one-time payment of [***] (the “Upfront Payment”). The (a) Upfront Payment and (b) fees payable by AstraZeneca pursuant to Sections 2.3(c) and 2.8(a) and Section 4 are paid by AstraZeneca in consideration for the Services to be performed by, and the Materials to be provided by, Moderna under this Agreement, and will be non-refundable and non-creditable and not subject to set-off (except for those payments under the foregoing clause (b), which payments will be subject to Section 11.17).

6.2. Reports; Payments. Moderna will furnish to AstraZeneca and the JSC a written report, after the end of each [***], showing the amount of [***], in each case, incurred by Moderna for such [***], which report will be furnished within [***] of the end of [***]. The JSC will review and approve any such report within [***] of receipt thereof. With respect to amounts invoiced by Moderna and payable by AstraZeneca under any Transaction Agreement, Moderna will submit an invoice in a form reasonably acceptable to AstraZeneca.

6.3. Records and Audits. Moderna will keep (and cause its Affiliates to keep) adequate books and records of accounting that fairly reflect the FTE Costs, Patent Costs, and the budgeted out-of-pocket costs explicitly set forth in the Services Plan, all in sufficient detail to confirm the accuracy of any payments required or made under the Transaction Agreements. Such books and records will be maintained by Moderna for at least [***] from the date of creation. Upon reasonable prior written notice to Moderna, such records of Moderna and its Affiliates will be open for inspection during normal business hours by independent accountants selected by AstraZeneca and reasonably acceptable to Moderna and not paid in whole or in part by a contingent fee arrangement, which such accountants will be obliged to execute a reasonable confidentiality agreement prior to commencing any such inspection or audit), for the purpose of verifying the accuracy of any payments required or made hereunder or confirming such rates or prices. All such inspections may be made, at reasonable times mutually agreed by the Parties, no more than once in any [***] period and going back no more than [***] after receipt of the respective invoice and report. The cost of this examination will be borne by AstraZeneca, unless the audit reveals a variance of more than [***] from the reported amounts for a calendar year, in which case Moderna will bear the reasonable out-of-pocket cost of the audit; *provided*, such variance exceeds [***] dollars [***]. If such audit concludes that additional payments were owed or that excess payments were made during

such period, AstraZeneca will pay such additional amounts owed to Moderna and Moderna will pay the amount of any such excess payments to AstraZeneca.

7. **Confidentiality**.

7.1. Confidential Information.

(a) *Confidential Information*. Each Party (“Disclosing Party”) may have disclosed or will disclose to the other Party (“Receiving Party”), and Receiving Party may acquire during the course and conduct of activities under the Transaction Agreements, certain proprietary or confidential information of Disclosing Party. The term “Confidential Information” means (i) all Materials (excluding any Moderna mRNA API supplied to AstraZeneca pursuant to Section 4) and (ii) all ideas and information of any kind, whether in written, oral, graphical, machine-readable or other form, whether or not marked as confidential or proprietary, which are transferred, disclosed or made available to Receiving Party by Disclosing Party or at the request of Receiving Party, including any of the foregoing of Third Parties. Without limiting the foregoing, [***] will be treated as Confidential Information of both Parties.

(b) *Restrictions*. During the Term and for [***] thereafter, Receiving Party will, and will cause its Affiliates and their respective officers, directors, employees and agents to, keep all Disclosing Party’s Confidential Information in confidence with the same degree of care with which Receiving Party holds its own confidential information (though no less than reasonable care); *provided*, that the foregoing obligation will apply to any Confidential Information that constitutes a trade secret for so long as such Confidential Information is afforded trade secret protection under applicable Law. Receiving Party will not use, and will cause its Affiliates and their respective officers, directors, employees and agents not to use, Disclosing Party’s Confidential Information except for in connection with the performance of its obligations and exercise of its rights under the Transaction Agreements. Receiving Party has the right to disclose Disclosing Party’s Confidential Information without Disclosing Party’s prior written consent (such consent not to be unreasonably withheld, delayed or conditioned), to the extent and only to the extent reasonably necessary or useful, to Receiving Party’s Affiliates and their employees, subcontractors, sublicensees, consultants or agents who have a need to know such Confidential Information in order to perform its obligations and exercise its rights under the Transaction Agreements and who are required to comply with restrictions on use and disclosure similarly restrictive as those in this Section 7.1(b). Receiving Party will use [***] to cause those entities and persons to comply with such restrictions on use and disclosure. Notwithstanding the foregoing sentence, Receiving Party assumes responsibility for those entities and persons maintaining Disclosing Party’s Confidential Information in confidence and using same only for the purposes described herein.

(c) *Exceptions*. Receiving Party’s obligation of nondisclosure and the limitations upon the right to use the Disclosing Party’s Confidential Information set forth in Section 7.1(b) will not apply to the extent that Receiving Party can demonstrate that the Disclosing Party’s Confidential Information: (i) was known to Receiving Party or any of its Affiliates prior to the time of disclosure; (ii) is or becomes public knowledge through no fault or omission of Receiving Party or any of its Affiliates; (iii) is obtained by Receiving Party or any of its Affiliates from a Third Party under no obligation of confidentiality to Disclosing Party; or (iv) has been independently developed by employees, subcontractors, consultants or agents of Receiving Party or any of its

Affiliates without the aid, application or use of Disclosing Party’s Confidential Information, as evidenced by contemporaneous written records. Notwithstanding the foregoing, (A) any Confidential Information will not be deemed to be within the foregoing exceptions merely because such information is embraced by more general information in the public domain or in the possession of the Receiving Party or any of its Affiliates, and (B) any combination of features will not be deemed to be within the foregoing exceptions merely because individual features are in the public domain or in the possession of the Receiving Party or any of its Affiliates, but only if the combination itself and its principle of operation are in the public domain or in the possession of the Receiving Party or any of its Affiliates.

(d) *Permitted Disclosures*. Receiving Party may disclose Disclosing Party’s Confidential Information to the extent (and only to the extent) such disclosure is reasonably necessary in the following instances:

(i) in order to comply with applicable Law or the rules of any securities exchange or with a legal or administrative proceeding;

(ii) in connection with (A) prosecuting or defending litigation or (B) Prosecuting or Maintaining Patents for Collaboration Technology; *provided*, [***];

(iii) in connection with exercising any rights or other licenses under the Transaction Agreements, including with respect to any Joint Technology;

(iv) in the case of AstraZeneca to [***];

(v) in the case of AstraZeneca, [***];

(vi) (A) in the case of Moderna, [***];

(vii) in the case of Moderna, [***]; and

(viii) in the case of Moderna, [***].

In the case of a disclosure pursuant to (A) Sections [***], where reasonably possible, Receiving Party will notify Disclosing Party of Receiving Party's intent to make any disclosure pursuant thereto sufficiently prior to making such disclosure [***], and (B) with respect to [***], each of those named people and entities are required to [***].

7.2. Publications. The Parties may desire to publish in scientific journals and present at scientific conferences the results of the Services Program, subject to the following process. Notwithstanding anything to the contrary herein, either Party may propose publication of the results of the Services Program following scientific review by the JSC (if in force); *provided*, that no such publication will be made without written approval by Moderna and AstraZeneca. After receipt of the proposed publication by both AstraZeneca and Moderna, such written approval or disapproval will be provided within [***] days. Both Parties understand that a reasonable commercial strategy may require delay of publication of information or filing of Patent applications, therefore the Parties agree to review and consider delay of publication and filing of patent applications under certain circumstances for a reasonably limited period of time (including

as set forth in Section 10.2 of the A&R Option Agreement). Once publications have been reviewed by each Party and have been approved for publication, the same publications do not have to be provided again to the other Party for review for a later submission for publication. Expedited reviews for abstracts or poster presentations may be arranged if mutually agreeable to the Parties. Each Party will acknowledge the other Party's technical, non-financial contributions in any such publication. For the avoidance of doubt, the foregoing requirements and restrictions will not apply with respect to either Party's proposed publication of results of any work performed with respect to any Discontinued Target.

7.3. Terms of this Agreement; Publicity.

(a) *Restrictions*.

(i) The Parties agree that the terms of the Transaction Agreements will be treated as Confidential Information of both Parties, and thus may be disclosed only as permitted by Section 7.1(d). Each Party will also be permitted to disclose the terms of this Agreement (including the Exhibits and Schedules hereto) and any executed Transaction Agreement, in each case under appropriate confidentiality provisions, on a need to know basis, to [***]; *provided*, that (A) the disclosing Party agrees to redact information that it reasonably believes is not relevant to the proposed transaction, and (B) [***] may be disclosed to any of the foregoing [***] only after [***].

(ii) [***] Except as required by Law, each Party agrees not to issue any press release or public statement disclosing information relating to the Transaction Agreements, the transactions contemplated hereby or thereby or any of the terms hereof or thereof without the prior written consent of the other Party (such consent not to be unreasonably withheld, delayed or conditioned), or as such consent may be obtained in accordance with Section 7.3(c). [***]

(b) *Securities Filings*. Each Party acknowledges and agrees that the other Party may submit the Transaction Agreements (including for clarity, the Exhibits and Schedules hereto and thereto) to the United

States Securities and Exchange Commission (the “SEC”) or any other securities exchange and if a Party does submit the Transaction Agreements to the SEC or any other securities exchange, such Party agrees to consult with the other Party with respect to the preparation and submission of, a confidential treatment request for the Transaction Agreements. If a Party is required by Law to make a disclosure of the terms of the Transaction Agreements in a filing with or other submission to the SEC or any other securities exchange, and (i) such Party has provided copies of the disclosure to the other Party as far in advance of such filing or other disclosure as is reasonably practicable under the circumstances, (ii) such Party has promptly notified the other Party in writing of such requirement and any respective timing constraints, and (iii) such Party has given the other Party a reasonable time under the circumstances from the date of notice by such Party of the required disclosure to comment upon, request confidential treatment or approve such disclosure, then such Party will have the right to make such public disclosure at the time and in the manner reasonably determined by its counsel to be required by Law. Notwithstanding anything to the contrary herein, it is hereby understood and agreed that if a Party seeking to make a disclosure as set forth in this Section 7.3(b), and the other Party provides comments within the respective time periods or constraints specified herein or within the respective notice, the Party seeking to make such disclosure or its counsel, as the case may be, will

in good faith (A) consider incorporating such comments and (B) use reasonable efforts to incorporate such comments, limit disclosure or obtain confidential treatment to the extent reasonably requested by the other Party.

(c) *Press Releases.* Neither Party may issue any press release or make any other public announcement or statement concerning the Transaction Agreements, the transactions contemplated hereby or thereby or the terms hereof or thereof, without the prior written approval of the other Party, except as may be required by applicable Law. In the event either Party (the “Issuing Party”) desires to issue a press release or other public statement disclosing information relating to the Transaction Agreements, the transactions contemplated hereby or thereby or the terms hereof or thereof, the Issuing Party will provide the other Party (the “Reviewing Party”) with a copy of the proposed press release or public statement (the “Release”) and seek the Reviewing Party’s prior written consent; *provided*, that to the extent the press release or a public statement only includes the facts and under the circumstances described in Section 7.3(a)(i) and (a)(ii), the Reviewing Party may not withhold, delay or condition its consent. The Issuing Party will specify with each such Release, taking into account the urgency of the matter being disclosed, a reasonable period of time within which the Receiving Party may provide any comments on such Release. If the Receiving Party provides any comments, the Parties will consult on such Release and work in good faith to prepare a mutually acceptable Release. Either Party may subsequently publicly disclose any information previously contained in any Release so consented to.

7.4. Relationship to the Confidentiality Agreement. This Agreement supersedes the Confidentiality Agreement; *provided*, that all “Confidential Information” disclosed or received by the Parties thereunder will be deemed “Confidential Information” hereunder and will be subject to the terms and conditions of this Agreement.

8. Representations and Warranties; Limitations of Liability; Indemnification.

8.1. Representations and Warranties of Each Party. Each Party represents and warrants to the other as of the Signing Date and the Amendment Effective Date that:

(a) Such Party is duly organized, validly existing and in good standing under the laws of the jurisdiction in which it is organized.

(b) Such Party (i) has the legal right and power to enter into this Agreement, to extend the rights granted or to be granted to the other in this Agreement, and to fully perform its obligations hereunder, and (ii) has taken all requisite action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder. This Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid and binding obligation, enforceable against such Party in accordance with its terms, except as may be limited by bankruptcy, insolvency, reorganization or other laws affecting creditors’ rights generally and by general equitable principles.

(c) Neither such Party nor its Affiliates has been debarred or is subject to debarment. Neither it nor its Affiliates will use in any capacity, in connection with the services to be performed under the Transaction Agreements, any person who has been debarred pursuant to Section 306 of

the FFDCA, or who is the subject of a conviction described in such section. In addition, neither it nor its Affiliates has used in any capacity, in connection with any Development activities with respect to the mRNA Technology or any Polypeptide carried out prior to the Signing Date, any person who has been debarred or was the subject of a conviction described in Section 306. Such Party agrees to inform the other Party in writing immediately if it or any person who is performing services under the Transaction Agreements is debarred or is the subject of a conviction described in Section 306, or if any action, suit, claim, investigation or legal or administrative proceeding is pending or, to the best of such Party's or its Affiliates' Knowledge, is threatened, relating to the debarment or conviction of such Party or any person performing services under the Transaction Agreements, or if such Party becomes aware that it or any person performing Development activities with respect to an mRNA Construct, Polypeptide, Product Candidate or Product carried out prior to the Signing Date was debarred or was the subject of a conviction described in Section 306.

(d) All necessary consents, approvals and authorizations of all governmental authorities and other Persons required to be obtained by such Party to enter into, or perform its obligations under, this Agreement have been obtained.

(e) The execution and delivery of this Agreement and the performance of such Party's obligations hereunder (i) will not conflict with or violate any requirement of applicable Law or orders of governmental bodies except as individually or in the aggregate would not be reasonably expected to have a material adverse effect on or a material adverse change in the ability of such Party to perform its obligations under or with respect to this Agreement; and (ii) do not conflict with, or constitute a default under, any contractual obligation of such Party, except as individually or in the aggregate would not have a material adverse effect on or a material adverse change in the ability of such Party to perform its obligations under or with respect to this Agreement.

8.2. Disclaimers. Without limiting the respective rights and obligations of the Parties expressly set forth herein, each Party specifically disclaims any guarantee that the Services Program or an Optioned Product Candidate will be successful, in whole or in part. EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THIS AGREEMENT OR THE OTHER TRANSACTION AGREEMENTS, THE PARTIES MAKE NO REPRESENTATIONS AND EXTEND NO WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO ANY MODERNA TECHNOLOGY, PRODUCT CANDIDATES, MATERIALS, INCLUDING WARRANTIES OF VALIDITY OR ENFORCEABILITY OF ANY PATENTS, TITLE, QUALITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR USE OR PURPOSE, PERFORMANCE, AND NONINFRINGEMENT OF ANY THIRD PARTY PATENTS OR OTHER INTELLECTUAL PROPERTY RIGHTS.

8.3. No Consequential Damages. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT OR THE OTHER TRANSACTION AGREEMENTS, EXCEPT FOR DAMAGES DUE TO THE FRAUD OR WILLFUL MISCONDUCT OR GROSS NEGLIGENCE OF THE LIABLE PARTY, NEITHER PARTY WILL BE LIABLE TO THE OTHER OR ANY THIRD PARTY WITH RESPECT TO ANY SUBJECT MATTER OF THIS AGREEMENT OR THE OTHER TRANSACTION AGREEMENTS FOR ANY INDIRECT, PUNITIVE, SPECIAL OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH PARTY HAS BEEN INFORMED OR SHOULD HAVE KNOWN OF THE POSSIBILITY OF SUCH DAMAGES; *PROVIDED*, THAT THIS SECTION 8.3 WILL NOT APPLY TO THE PARTIES' INDEMNIFICATION RIGHTS AND OBLIGATIONS UNDER SECTION 8.5.

8.4. Performance by Others. Subject to Sections 2.10 (in the case of subcontractors) and 7.1(b), the Parties recognize that each Party may perform some or all of its obligations under this Agreement through Affiliates and permitted subcontractors; *provided*, that each Party will remain responsible and liable for the performance by its Affiliates and permitted subcontractors and will cause its Affiliates and permitted subcontractors to comply with the provisions of this Agreement in connection therewith.

8.5. Indemnification.

(a) *Indemnification by AstraZeneca.* AstraZeneca will indemnify Moderna, its Affiliates and their respective directors, officers, employees, Third Party licensors under the Existing In-License Agreements and agents, and their respective successors, heirs and assigns (collectively, "Moderna Indemnitees"), and defend and save each of them harmless, from and against any and all losses, damages, liabilities, costs and expenses (including reasonable attorneys' fees and expenses) (collectively, "Losses") in connection with any and all suits,

investigations, claims or demands of Third Parties (collectively, “Third Party Claims”) arising from or occurring as a result of: [***]; *provided*, that AstraZeneca will not be obligated to indemnify Moderna Indemnitees for any Losses to the extent that such Losses arise as a result of gross negligence or willful misconduct on the part of a Moderna Indemnitee.

(b) *Indemnification by Moderna.* Moderna will indemnify AstraZeneca, its Affiliates and their respective directors, officers, employees and agents, and their respective successors, heirs and assigns (collectively, “AstraZeneca Indemnitees”), and defend and save each of them harmless, from and against any and all Losses in connection with any and all Third Party Claims arising from or occurring as a result of: [***]; *provided*, that Moderna will not be obligated to indemnify AstraZeneca Indemnitees for any Losses to the extent that such Losses arise as a result of (1) gross negligence or willful misconduct on the part of an AstraZeneca Indemnitee or (2) [***].

(c) *Notice of Claim.* All indemnification claims provided for in Section 8.5(a) and 8.5(b) will be made solely by such Party to this Agreement (the “Indemnified Party”). The Indemnified Party will promptly notify the indemnifying Party (an “Indemnification Claim Notice”) of any Losses or the discovery of any fact upon which the Indemnified Party intends to base a request for indemnification under Section 8.5(a) or 8.5(b), but in no event will the indemnifying Party be liable for any Losses that result from any delay in providing such notice. Each Indemnification Claim Notice must contain a description of the claim and the nature and estimated amount of such Loss (to the extent that the nature and amount of such Loss is known at such time). The Indemnified Party will furnish promptly to the indemnifying Party copies of all papers and official documents received in respect of any Losses and Third Party Claims.

(d) *Defense, Settlement, Cooperation and Expenses.*

(i) *Control of Defense.* At its option, the indemnifying Party may assume the defense of any Third Party Claim by giving written notice to the Indemnified Party within [***] days after the indemnifying Party’s receipt of an Indemnification Claim Notice. The assumption of the defense of a Third Party Claim by the indemnifying Party will not be construed as an acknowledgment that the indemnifying Party is liable to indemnify the Indemnified Party in respect of the Third Party Claim, nor will it constitute a waiver by the indemnifying Party of any defenses it may assert against the Indemnified Party’s claim for indemnification. Upon assuming the defense of a Third Party Claim, the indemnifying Party may appoint as lead counsel in the defense of the Third Party Claim any legal counsel selected by the indemnifying Party (the indemnifying Party will consult with the Indemnified Party with respect to a possible conflict of interest of such counsel retained by the indemnifying Party). In the event the indemnifying Party assumes the defense of a Third Party Claim, the Indemnified Party will immediately deliver to the indemnifying Party all original notices and documents (including court papers) received by the Indemnified Party in connection with the Third Party Claim. Should the indemnifying Party assume the defense of a Third Party Claim, except as provided in Section 8.5(d)(ii), the indemnifying Party will not be liable to the Indemnified Party for any legal costs or expenses subsequently incurred by such Indemnified Party in connection with the analysis, defense or settlement of the Third Party Claim. [***]

(ii) *Right to Participate in Defense.* Without limiting Section 8.5(d)(i), any Indemnified Party will be entitled to participate in, but not control, the defense of such Third Party Claim and to employ counsel of its choice for such purpose; *provided*, that such employment will be at the Indemnified Party’s own cost and expense unless [***].

(iii) *Settlement.* With respect to any Third Party Claims that relate solely to the payment of money damages in connection with a Third Party Claim and that will not result in the Indemnified Party’s becoming subject to injunctive or other relief or otherwise adversely affecting the business of the Indemnified Party in any manner, and as to which the indemnifying Party will have acknowledged in writing the obligation to indemnify the Indemnified Party hereunder, the indemnifying Party will have the sole right to agree to the entry of any judgment, enter into any settlement or otherwise dispose of such Loss, on such terms as the indemnifying Party, in its sole discretion, will deem appropriate. With respect to all other Losses in connection with Third Party Claims, where the indemnifying Party has assumed the defense of the Third Party Claim in accordance with Section 8.5(d)(i), the indemnifying Party will have authority to agree to the entry of any judgment, enter into any settlement or otherwise dispose of such Loss provided it obtains the prior written consent of the Indemnified Party (such consent not to be unreasonably withheld, delayed or conditioned). The indemnifying Party will not

be liable for any settlement or other disposition of a Loss by an Indemnified Party that is reached without the prior written consent of the indemnifying Party. Regardless of whether the indemnifying Party chooses to defend or prosecute any Third Party Claim, no Indemnified Party will admit any liability with respect to or settle, compromise or discharge, any Third Party Claim without the prior written consent of the indemnifying Party, such consent not to be unreasonably withheld, delayed or conditioned.

(iv) *Cooperation.* If the indemnifying Party chooses to defend or prosecute any Third Party Claim, the Indemnified Party will, and will cause each other Indemnified Party to, cooperate in the defense or prosecution thereof and will furnish such records, information and testimony, provide such witnesses and attend such conferences, discovery proceedings, hearings, trials and appeals as may be reasonably requested in connection therewith. Such cooperation will include access during normal business hours afforded to indemnifying Party to, and reasonable

retention by the Indemnified Party of, records and information that are reasonably relevant to such Third Party Claim, and making Indemnified Parties and other employees and agents available on a mutually convenient basis to provide additional information and explanation of any material provided hereunder, and the indemnifying Party will reimburse the Indemnified Party for all its reasonable out-of-pocket costs and expenses in connection therewith.

(v) *Costs and Expenses.* Except as provided above in this Section 8.5(d), the reasonable and verifiable costs and expenses, including attorneys' fees and expenses, incurred by the Indemnified Party in connection with any claim will be reimbursed on a Calendar Quarter basis by the indemnifying Party, without prejudice to the indemnifying Party's right to contest the Indemnified Party's right to indemnification and subject to refund in the event the indemnifying Party is ultimately held not to be obligated to indemnify the Indemnified Party.

8.6. Insurance. Each Party will maintain at its sole cost and expense, an adequate liability insurance or self-insurance program (including product liability insurance) to protect against potential liabilities and risk arising out of activities to be performed under the Transaction Agreements, and any agreement related hereto and upon such terms (including coverages, deductible limits and self-insured retentions) as are customary in the U.S. pharmaceutical industry, or, if such activities are conducted outside the U.S., as are customary in such country, for the activities to be conducted by such Party under the Transaction Agreements. The coverage limits set forth herein will not create any limitation on a Party's liability to the other under the Transaction Agreements.

9. Term and Termination.

9.1. Term. This Agreement will take effect as of the Amendment Effective Date and on such date it will replace and supersede the Original Services and Collaboration Agreement in its entirety; provided that [***]. Unless sooner terminated in accordance with the terms hereof or by mutual written consent, the term of this Agreement will be deemed to have commenced on the Signing Date and continue for the Option Agreement Term (the "Term"). For the avoidance of doubt, the replacement and superseding of the Original Agreements will not relieve the Parties of any liability which accrued prior to the Amendment Effective Date.

9.2. Termination by Moderna for Breach. Moderna will have the right to terminate this Agreement in full upon delivery of written notice to AstraZeneca in the event of any material breach by AstraZeneca of any terms and conditions of this Agreement [***]; *provided*, that to the extent that any such breach is limited to Collaboration mRNA Constructs for a particular Research Polypeptide or Development Polypeptide, Moderna will have the right to terminate this Agreement only with respect to the Collaboration mRNA Constructs for such Research Polypeptide or Development Polypeptide (as applicable), and (a) such Collaboration mRNA Constructs will become Discontinued Product Candidates, (b) the applicable Research Polypeptide or Development Polypeptide will become a Discontinued Polypeptide and (c) the Research Target addressed by such Discontinued Polypeptide will become a Discontinued Research Target unless for such Research Target there is an Optioned Product Candidate [***] Development Polypeptide for such Research Target. For clarity, for the purposes of such discontinuance, [***]. Notwithstanding the foregoing, any such termination under this Section 9.2 will not be effective if such breach has been cured within [***] days after written notice thereof is given by Moderna to

AstraZeneca specifying the nature of the alleged breach (or, if such default cannot be cured within such [***]-day period, such longer period as reasonably required to cure such breach; *provided*, that AstraZeneca commences actions to cure such default within such [***]-day period and thereafter diligently continues such actions); *provided*, that to the extent such material breach involves the failure to make an undisputed payment when due, such breach must be cured within [***] days after written notice thereof is given by Moderna to AstraZeneca. [***]

9.3. Termination by AstraZeneca.

(a) *Breach.* AstraZeneca will have the right to terminate this Agreement in full upon delivery of written notice to Moderna in the event of any material breach by Moderna of any terms and conditions of this Agreement [***]; *provided*, that to the extent that any such breach is limited to a particular Target, AstraZeneca will have the right to terminate this Agreement only with respect to such Target, and such Target will become a Discontinued Target. Notwithstanding the foregoing, any such termination under this Section 9.3(a) will not be effective if such breach has been cured within [***] days after written notice thereof is given by AstraZeneca to Moderna specifying the nature of the alleged breach (or, if such default cannot be cured within such [***]-day period, such longer period as reasonably required to cure such breach; *provided*, that Moderna commences actions to cure such default within such [***]-day period and thereafter diligently continues such actions); *provided*, that to the extent such material breach involves the failure to make an undisputed payment when due, such breach must be cured within [***] days after written notice thereof is given by AstraZeneca to Moderna. [***]

(b) *Discretionary Termination.* AstraZeneca will have the right to terminate this Agreement in full ninety (90) days after delivery of written notice to Moderna if the Executive Officer of AstraZeneca concludes due to scientific, technical, regulatory or commercial reasons, including [***].

9.4. Alternative to Termination. If AstraZeneca has the right to terminate this Agreement under Section 9.3(a) (including expiration of all applicable cure periods thereunder), in lieu of exercising such termination right, AstraZeneca may elect once by written notice to Moderna before the end of such applicable cure period to have this Agreement continue in full force and effect, in which case the following will apply:

(a) starting immediately after the end of such applicable cure period, any payments for Contingent Event Option Exercise Payment and Option Exercise Earn-Out payments payable under the A&R Option Agreement following such date that AstraZeneca has the right to terminate this Agreement under Section 9.3(a) will be reduced by [***]; *provided*, that such reduction will not apply if and to the extent [***];

(b) The procedures set forth in [***] will continue to apply.

(c) [***]

(d) AstraZeneca's obligation to [***] will terminate; *provided*, that AstraZeneca will keep Moderna reasonably informed of AstraZeneca's Development activities under the Services Program and Development of Product Candidates in the Development Pool.

(e) The following provisions will cease to apply: [***].

9.5. Effects of Termination or Expiration. Upon termination or expiration of this Agreement for any reason:

(a) the Services Program will terminate and any Research Polypeptides will become Discontinued Polypeptides (and Collaboration mRNA Constructs with respect thereto will become Discontinued Product Candidates); *provided*, for clarity, that, AstraZeneca will retain its rights and obligations under the A&R Option Agreement to any Optioned Product Candidates (and associated Subject Constructs and Products) at the time of such termination unless AstraZeneca is in breach of the A&R Option Agreement with respect to such Optioned Product Candidates (and associated Subject Constructs and Products) and the provisions of this Agreement relevant to the Parties' on-going activities with respect to such and Optioned Product Candidates (and associated Subject Constructs and Products) including Article 4 and Exhibit A-1 shall continue to apply;

(b) Moderna will return (or destroy or erase, as directed by AstraZeneca) all data, files, records and other materials containing or comprising AstraZeneca's Confidential Information. Notwithstanding the foregoing, (i) in respect of physical embodiments of information, Moderna will be permitted to retain one copy of such data, files, records, and other materials for non-commercial archival purposes, and (ii) in respect of any information stored electronically or in other non-physical media, it will be sufficient for Moderna to procure that access to such information is restricted to non-commercial archiving purposes only;

(c) except to the extent AstraZeneca has rights to continue to Exploit Product Candidates, Option Product Candidates or Products pursuant to the Transaction Agreements, all documents relating solely to or necessary to Exploit Discontinued Product Candidates, as such items exist as of the effective date of such termination, will be assigned to Moderna, and AstraZeneca will provide to Moderna one (1) copy of the foregoing; and

(d) except as otherwise necessary to continue exercising any ongoing licenses under the Transaction Agreements, the Parties will return (or destroy or erase, as directed by the other Party) all data, files, records and other materials containing or comprising the other Party's Confidential Information. Notwithstanding the foregoing, (i) in respect of physical embodiments of information, the Parties will be permitted to retain one copy of such data, files, records, and other materials for non-commercial archival purposes, and (ii) in respect of any information stored electronically or in other non-physical media, it will be sufficient for such Party to procure that access to such information is restricted to non-commercial archiving purposes only.

In the event that Moderna terminates this Agreement with respect to a particular Research Polypeptide or Development Polypeptide pursuant to Section 9.2, the provisions of this Section 9.5 will apply only with respect to such Research Polypeptide or Development Polypeptide.

9.6. Survival. In addition to the consequences of expiration or termination set forth in Section 9.5, the following provisions will survive termination or expiration of this Agreement: [***]. Termination or expiration of this Agreement will not relieve the Parties of any liability or obligation which accrued hereunder prior to the effective date of such termination or expiration nor preclude either Party from pursuing all rights and remedies it may have hereunder or at law or

in equity with respect to any breach of this Agreement nor prejudice either Party's right to obtain performance of any obligation. All other rights and obligations will terminate upon expiration of this Agreement.

9.7. Integrated Agreements. The Parties acknowledge that the Transaction Agreements, together, constitute an integrated set of agreements entered into as part of the same transaction that collectively govern the subject matter covered by the Transaction Agreements. Early termination of any one of the Transaction Agreements without the others would fundamentally alter the intended allocation of rights and obligations intended by the Parties in entering into the Transaction Agreements. Thus, if a Party (or its bankruptcy trustee) has the right to reject any of the Transaction Agreements under the U.S. Bankruptcy Code or any analogous provision under any other law in any country outside the United States, such Party (or the applicable bankruptcy trustee) will either reject all of the Transaction Agreements or assume all of the Transaction Agreements, but may not reject one Transaction Agreement without rejecting the others.

10. Tax Treatment of Agreement.

10.1. [***]

10.2. [***]

10.3. Indirect Taxes. Notwithstanding anything to the contrary contained in this Section 10.3 or elsewhere in this Agreement, the following will apply with respect to Indirect Taxes. All payments hereunder are exclusive of Indirect Taxes. If any Indirect Taxes are chargeable in respect of any such payments, AstraZeneca will pay such Indirect Taxes at the applicable rate in respect of any such payments following the receipt, where applicable, of an Indirect Taxes invoice issued by Moderna in respect of those payments, such Indirect Taxes to be payable on the due date of the payment of the payments to which such Indirect Taxes relate or at the time such Indirect Taxes are required to be collected by Moderna, in the case of payment of Indirect Taxes to Moderna. The Parties will issue invoices for all goods and services supplied under this Agreement consistent with Indirect Tax requirements, and to the extent any invoice is not initially issued in an appropriate

form, AstraZeneca will promptly inform Moderna and will cooperate with Moderna to provide such information or assistance as may be necessary to enable the issuance of such invoice consistent with Indirect Tax requirements.

10.4. Import Duties. The Parties will co-operate in accordance with applicable Laws to ensure where permissible no import duties are paid on imported materials supplied by Moderna on the terms set forth in this Agreement. The Party responsible for shipping will value any such materials in accordance with applicable laws.

11. General Provisions.

11.1. Dispute Resolution for the Transaction Agreements .

(a) *Disputes*. Disputes of any nature arising under, relating to, or in connection with the Transaction Agreements (“Disputes”) will be resolved pursuant to this Section 11.1.

(b) *Dispute Escalation*. In the event of a Dispute between the Parties, the Parties will first attempt to resolve such dispute by negotiation and consultation between themselves or the JSC. In the event that such dispute is not resolved on an informal basis within [***] days from receipt of the written notice of a Dispute, any Party may, by written notice to the other, have such dispute referred to the Executive Officers (or their designees, which designee is required to have decision-making authority on behalf of such Party), who will attempt to resolve such Dispute by negotiation and consultation for a [***] day period following receipt of such written notice.

(c) *Full Arbitration*. In the event the Parties have not resolved such Dispute, other than a Continuation Criteria Dispute, within [***] days of receipt of the written notice referring such Dispute to the Executive Officers, either Party may at any time after such [***]-day period submit such Dispute to be finally settled by arbitration in accordance with the rules of the London Court of International Arbitration (the “LCIA”) in effect at the time of submission, as modified by this Section 11.1. The arbitration will be governed by the Laws of the state of New York. The arbitration will be heard and determined by three (3) arbitrators who are judges or attorneys with relevant experience in the pharmaceutical and biotechnology industry, each of whom will be impartial and independent. Each Party will appoint one arbitrator and the third arbitrator will be selected by the two Party-appointed arbitrators, or, failing agreement within [***] days following appointment of the second arbitrator by the LCIA. Such arbitration will take place in Boston, Massachusetts. The arbitration award so given will be a final and binding determination of the dispute, will be fully enforceable in any court of competent jurisdiction, and will not include any damages expressly prohibited by Section 8.3. Fees, costs and expenses of arbitration are to be divided by the Parties in the following manner: AstraZeneca will pay for the arbitrator it chooses, Moderna will pay for the arbitrator it chooses, and the Parties will share payment for the third arbitrator. Except in a proceeding to enforce the results of the arbitration or as otherwise required by law, neither Party nor any arbitrator may disclose the existence, content or results of any arbitration hereunder without the prior written consent of both Parties (each such consent not to be unreasonably withheld, delayed or conditioned).

(d) *Injunctive Relief*. Notwithstanding the dispute resolution procedures set forth in this Section 11.1, in the event of an actual or threatened breach of the Transaction Agreements, the aggrieved Party may seek provisional equitable relief (including restraining orders, specific performance or other injunctive relief), without first submitting to any dispute resolution procedures hereunder.

(e) *Tolling*. The Parties agree that all applicable statutes of limitation and time-based defenses (such as estoppel and laches) will be tolled while the dispute resolution procedures set forth in this Section 11.1 are pending, and the Parties will cooperate in taking all actions reasonably necessary to achieve such a result. [***]

11.2. Cumulative Remedies and Irreparable Harm. All rights and remedies of the Parties hereunder will be cumulative and in addition to all other rights and remedies provided hereunder or available by agreement, at law or otherwise. Each Party acknowledges and agrees that breach of any of the terms or conditions of this Agreement would cause irreparable harm and damage to the other and that such damage may not be ascertainable in money damages and that as a result thereof the non-breaching Party would be entitled to seek on an interim basis from a court and on a permanent basis from an arbitral tribunal equitable or injunctive relief restraining any breach or

future violation of the terms contained herein by the breaching Party without the necessity of proving actual damages or posting bond. Such right to equitable relief is in addition to whatever remedies either Party may be entitled to as a matter of law or equity, including money damages.

11.3. Business Combination. Notwithstanding anything to the contrary herein or therein, for purposes of the Transaction Agreements, [***].

11.4. Anti-Bribery and Corruption Compliance.

(a) Moderna agrees, on behalf of itself, its officers, directors and employees and on behalf of its Affiliates, agents, representatives, consultants and subcontractors hired for activities undertaken for or in connection with the performance of the Transaction Agreements (together with Moderna, the “Moderna Representatives”) that for the performance of its obligations hereunder, Moderna Representatives will not directly or indirectly pay, offer or promise to pay, or authorize the payment of any money, or give, offer or promise to give, or authorize the giving of anything else of value, to:

(i) any government or political party official, official of an international public organization, candidate for public office or representative of other businesses or a person acting on behalf of any of the foregoing (each, a “Government Official”) in order to influence official action;

(ii) any Person (whether or not a Government Official) (A) to influence such Person to act in breach of a duty of good faith, impartiality or trust (“acting improperly”), (B) to reward such Person for acting improperly, or (C) where such Person would be acting improperly by receiving the money or other thing of value;

(iii) any other Person while knowing or having reason to know that all or any portion of the money or other thing of value will be paid, offered, promised or given to, or will otherwise benefit, a Government Official in order to influence official action for or against either Party in connection with the matters that are the subject of the Transaction Agreements; or

(iv) any Person to reward that Person for acting improperly or to induce that Person to act improperly.

(b) Moderna Representatives will not, directly or indirectly, solicit, receive or agree to accept any payment of money or anything else of value in violation of the law, including the U.S. Foreign Corrupt Practices Act, as amended, the UK Bribery Act 2010, as amended, and any other applicable anti-corruption laws and laws for the prevention of fraud, racketeering, money laundering or terrorism (“Anti-Corruption Laws”).

(c) Moderna acknowledges that its undertakings given in Sections 11.4(a) and 11.4(b) are material to AstraZeneca in entering into a relationship with AstraZeneca.

(d) Moderna, on behalf of itself and its Moderna Representatives, represents and warrants to AstraZeneca that during the Term and [***] thereafter, it will and will procure that its Moderna Representatives keep and maintain accurate books and reasonably detailed records in connection with the performance of its obligation under the Transaction Agreements including all records required to establish compliance with Sections 11.4(a) and 11.4(b) above.

(e) Moderna will promptly provide AstraZeneca with written notice of the following events: (i) upon becoming aware of any breach or violation by it or its Moderna Representatives of any representation, warranty or undertaking set forth in Sections 11.4(a) and 11.4(b); and (ii) upon receiving a formal notification that it is the target of a formal investigation by a Relevant Authority for a Material Anti-Corruption Law Violation or upon receipt of information from any of its Moderna Representatives connected with this Agreement that any of them is the target of a formal investigation by a Relevant Authority for a Material Anti-Corruption Law Violation.

(f) During the Term and [***] thereafter, Moderna will for the purpose of auditing and monitoring the performance of its compliance with the Transaction Agreements and particularly this Section 11.4 permit AstraZeneca, its Affiliates, any auditors of any of them and any Regulatory Authority to have access to any

premises of Moderna or its Moderna Representatives used in connection with the Transaction Agreements, together with a right to access personnel and records that relate to the Transaction Agreements.

(g) Moderna will be responsible for any breach of any representation, warranty or undertaking in this Section 11.4 or of the Anti-Corruption Laws by any of its Moderna Representatives.

(h) Each Party may disclose the terms of the Transaction Agreements or any action taken under this Section 11.4 to prevent a potential violation or continuing violation of applicable Anti-Corruption Laws, including the identity of the other Party and the payment terms, to any governmental authority if such Party determines, upon advice of counsel, that such disclosure is necessary.

11.5. Relationship of Parties. Nothing in this Agreement is intended or will be deemed to constitute a partnership, agency, employer-employee or joint venture relationship between the Parties. No Party will incur any debts or make any commitments for the other, except to the extent, if at all, specifically provided herein. There are no express or implied third party beneficiaries hereunder.

11.6. Compliance with Law. Each Party will perform or cause to be performed any and all of its obligations or the exercise of any and all of its rights hereunder in good scientific manner and in compliance with all applicable Law.

11.7. Data Privacy. Without prejudice to Section 11.6, notwithstanding any other term of the Transaction Documents neither Party will, or will be required to, transfer to the other Party any information relating to an identified or identifiable (directly or indirectly) natural person (“Personal Data”) if either Party, acting reasonably, determines that such transfer or any subsequent processing of such Personal Data would not comply with any applicable laws relating to the transfer and processing of such Personal Data. If the transfer of such Personal Data is otherwise required by this Agreement, the Parties shall negotiate in good faith and seek to enter into such agreement as reasonably required to ensure that such transfer and subsequent processing does comply with such applicable laws.

11.8. Force Majeure. Neither Party will be liable to the other for failure of or delay in performing obligations set forth in this Agreement (other than any obligation to pay monies when due), and neither will be deemed in breach of such obligations, if such failure or delay is due to natural disasters or any causes reasonably beyond the control of such Party; *provided*, that the Party affected will promptly notify the other of the force majeure condition and will exert reasonable efforts to eliminate, cure or overcome any such causes and to resume performance of its obligations as soon as possible.

11.9. Governing Law. This Agreement will be governed by and construed in accordance with the Laws of the state of New York, without respect to its conflict of laws rules or principles that might otherwise refer construction or interpretation of this Agreement to the substantive Law of another jurisdiction; *provided*, that any dispute relating to the scope, validity, enforceability or infringement of any Patents will be governed by, and construed and enforced in accordance with, the substantive Laws of the jurisdiction in which such Patents apply. The Parties agree to exclude the application to this Agreement of the United Nations Convention on Contracts for the International Sale of Goods.

11.10. Counterparts; Facsimiles. This Agreement may be executed in one or more counterparts, each of which will be deemed an original, and all of which together will be deemed to be one and the same instrument. Facsimile or PDF execution and delivery of this Agreement by either Party will constitute a legal, valid and binding execution and delivery of this Agreement by such Party

11.11. Headings. All headings in this Agreement are for convenience only and will not affect the meaning of any provision hereof.

11.12. 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 will be construed against the drafting party will not apply.

11.13. Interpretation. Whenever any provision of this Agreement uses the term “including” (or “includes”), such term will be deemed to mean “including without limitation” (or “includes without limitations”). “Herein,” “hereby,” “hereunder,” “hereof” and other equivalent words refer to this Agreement as

an entirety and not solely to the particular portion of this Agreement in which any such word is used. Except where the context otherwise requires, whenever used, the singular will include the plural, the plural the singular, the use of any gender will be applicable to all genders and the word “or” is used in the inclusive sense (and/or). Unless otherwise provided, all references to Sections, Schedules and Exhibits in this Agreement are to Sections, Schedules and Exhibits of this Agreement. References to any Sections include Sections and subsections that are part of the related Section (e.g., a section numbered “Section 2.1” would be part of “Section 2”, and references to “Section 2.1” would also refer to material contained in the subsection described as “Section 2.1(a)”).

11.14. Binding Effect. This Agreement will inure to the benefit of and be binding upon the Parties, their Affiliates, and their respective lawful successors and assigns.

11.15. Assignment. This Agreement may not be assigned by either Party, nor may either Party delegate its obligations or otherwise transfer any rights created by this Agreement, except as expressly permitted hereunder or otherwise without the prior written consent of the other Party, which consent will not be unreasonably withheld, delayed or conditioned; *provided*, that either Party may assign this Agreement to an Affiliate or to such Party’s successor in connection with the merger, consolidation, sale of all or substantially all of its assets or that portion of its business pertaining to the subject matter of this Agreement, or any Business Combination of such Party. Notwithstanding the foregoing, neither Party may assign this Agreement unless such assignment also includes an assignment of all of the Transaction Agreements other than an assignment with respect to a particular Optioned Product Candidate as permitted by the A&R Option Agreement, to the same Affiliate or Third Party successor, as applicable. The rights and obligations of the Parties under this Agreement will be binding upon and inure to the benefit of the successors and permitted assigns of the Parties, and the name of a Party appearing herein will be deemed to include the name of such Party’s successors and permitted assigns to the extent necessary to carry out the intent of this Section 11.15.

11.16. Notices. All notices, requests, demands and other communications required or permitted to be given pursuant to this Agreement or the A&R Option Agreement will be in writing and will be deemed to have been duly given upon the date of receipt if delivered by hand, recognized international overnight courier, electronic transmission to email address below (if any), or registered or certified mail, return receipt requested, postage prepaid to the following addresses:

If to Moderna: Moderna Therapeutics, Inc.
200 Technology Square
Cambridge, MA MA 02139

Attention: Stéphane Bancel, CEO
Email:

With copies to: ModernaTX, Inc.
200 Technology Square
Cambridge, MA MA 02139

Attention: Shaun Ryan, Deputy General Counsel
Email: Shaun.Ryan@modernatx.com; legal@modernatx.com

Goodwin|Procter LLP
53 State Street
Boston, MA 02109
Attention: Kingsley Taft, Esq.
Email: Ktaft@goodwinlaw.com

If to AstraZeneca: AstraZeneca AB
Pepparedsleden 1
S-431 83 Mölndal

Attention: Senior Director, Innovative Medicines, iMed CVGI

With copies to: AstraZeneca AB
Pepparedsleden 1
S-431 83 Mölndal

Attention: Corporate Legal, Deputy General Counsel.

Covington & Burling LLP
265 Strand
London WC2R 1BH
Attention: Lucinda Osborne, Esq.
Email: losborne@cov.com

Either Party may change its designated address by notice to the other Party in the manner provided in this Section 11.16.

Notwithstanding the foregoing, notification of the nomination of Polypeptides as “Research Polypeptides”, the exclusion of Research Targets from the Services Program and notification of AstraZeneca’s determination that a Research Target has met the applicable Continuation Criteria may be made by each Party by e-mail from its Program Director to the other Party’s Program Director using the then current e-mail addresses of the Program Directors.

11.17. Right to Set-Off. Except as otherwise set forth in this Agreement or any Transaction Agreement, each Party has the right at all times to retain and set off against all amounts due and owing to the other Party as determined in a final judgment any damages recovered by such Party for any Losses incurred by such Party.

11.18. Amendment and Waiver. This Agreement may be amended, supplemented, or otherwise modified only by means of a written instrument signed by both Parties; *provided*, that any unilateral undertaking or waiver made by one Party in favor of the other will be enforceable if undertaken in a writing signed by the Party to be charged with the undertaking or waiver. Any waiver of any rights or failure to act in a specific instance will relate only to such instance and will not be construed as an agreement to waive any rights or fail to act in any other instance, whether or not similar.

11.19. HSR Act Filings. The Parties acknowledge that HSR Act Filings (as defined in the Original Services & Collaboration Agreement) were made in accordance with the Original Services and Collaboration Agreement.

11.20. Severability. In the event that any provision of this Agreement will, for any reason, be held to be invalid or unenforceable in any respect, and if the rights or obligations of either Party under this Agreement will not be materially and adversely affected thereby, (a) such provisions will be given no effect by the Parties and will not form part of this Agreement, (b) all other provisions of this Agreement will remain in full force and effect, and (c) the Parties will negotiate in good faith to modify this Agreement to preserve (to the extent possible) their original intent

11.21. Entire Agreement. This Agreement and the other Transaction Agreements (and any agreements entered into pursuant to the Original Agreements) are the sole agreements with respect to the subject matter and, except as provided in Section 9.1, supersede all other agreements and understandings between the Parties with respect to same (including the Confidentiality Agreement).

[Remainder of this Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have caused this Amended and Restated Services and Collaboration Agreement to be executed by their respective duly authorized officers as of the Amendment Effective Date.

MODERNATX, INC.

By: /s/ Stéphane Bancel
(Signature)
Name: Stéphane Bancel
Title: CEO
Date: June 15, 2018

ASTRAZENECA AB

By: /s/ Jesper Bergkvist
(Signature)
Name: Jesper Bergkvist
Title: Legal Director
Date: June 15, 2018