Vir and Alnylam Expand Collaboration to Advance Investigational RNAi Therapeutics Targeting Host Factors for the Treatment of COVID-19

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− Collaboration to Evaluate RNAi Therapeutics Targeting Three Host Factors Required for SARS-CoV-2 Infection, Including ACE2 and TMPRSS2 −

− Vir to Lead Development of Potential Coronavirus RNAi Therapeutic Candidates Discovered by Alnylam, with Alnylam Retaining an Option for 50-50 Participation −

SAN FRANCISCO & CAMBRIDGE, Mass.--(BUSINESS WIRE)--Apr. 2, 2020-- Vir Biotechnology, Inc. (Nasdaq: VIR) and Alnylam Pharmaceuticals, Inc. (Nasdaq: ALNY) today announced an expansion to their broad multi-target existing collaboration for the development and commercialization of RNAi therapeutics for infectious diseases, including SARS-CoV-2, the virus that causes the disease COVID-19. This expansion includes up to three additional targets focused on host factors for SARS-CoV-2, including ACE2 and TMPRSS2, both of which are considered critical for viral entry, with the potential for an additional host target to emerge from Vir's functional genomics work.

Pursuant to an amendment to the collaboration agreement, the companies will utilize Alnylam's recent advances in lung delivery of novel conjugates of siRNA – the molecules that mediate RNAi – together with Vir's infectious disease expertise and established capabilities, to bring forward up to three additional host factor-targeting development candidates (DCs) to treat SARS-CoV-2 and potentially other coronaviruses as well. The two named targets include angiotensin converting enzyme-2 (ACE2) and transmembrane protease, serine 2 (TMPRSS2). ACE2 is known to be the viral entry receptor for SARS-CoV-2 and other coronaviruses, while TMPRSS2 is believed to cleave the SARS-CoV-2 spike protein to facilitate cellular attachment. The third target is expected to emerge from Vir's ongoing functional genomics efforts to identify novel host factors pertinent to coronaviral infection and targetable by siRNA, mAbs or small molecules.

As part of the original collaboration to advance investigational RNAi therapeutics to treat disease caused by coronavirus infection, Alnylam has designed and synthesized over 350 siRNAs targeting highly conserved regions of the SARS-CoV-2 genome. Lead siRNAs have recently been identified by scientists at Alnylam and are now being further evaluated by scientists at Vir for anti-viral activity in support of DC selection. Upon DC selection, Vir will lead development efforts – working closely with Alnylam to generate the data required to enable the potential for rapid commencement of clinical studies.

"Vir is aggressively pursuing multiple platforms and multiple therapeutic strategies to combat the COVID-19 pandemic. We are excited about our partnership with Alnylam – which has already led to identification of promising siRNAs targeting SARS-CoV-2 – and we're pleased to now expand our efforts to evaluate the anti-viral effects of siRNAs targeting human host factors," said George Scangos, Ph.D., CEO of Vir. "We share a sense of urgency with Alnylam in advancing these efforts as quickly as possible and with the highest priority."

"The biopharmaceutical industry needs to advance its full armamentarium of potential treatment approaches and strategies to address the COVID-19 pandemic. To this end, we are excited about the promise of targeting host factors critical for viral infection and replication, in addition to our efforts directly targeting the SARS-CoV-2 genome," said John Maraganore, Ph.D., Chief Executive Officer of Alnylam Pharmaceuticals. "At this time of enormous public health need, we plan to act with the utmost urgency to broaden and accelerate our efforts with Vir to develop investigational RNAi therapeutics against COVID-19, and potentially future coronavirus diseases."

Under the collaboration and license agreement, as amended, in addition to leading development of selected DCs, Vir will lead commercialization of any products emerging from the collaboration that gain regulatory approval. At clinical proof of concept, Alnylam will have an option to share equally in any profits and losses associated with the development and commercialization of each coronavirus program. Alternatively, Alnylam may elect to earn development and commercialization milestones and royalties on net sales of any products resulting from the collaboration in amounts agreed upon for each coronavirus program. These additional targets expand the companies' collaboration and license agreement announced in 2017, and the subsequent amendment to that agreement announced in March 2020, to now develop novel siRNAs for up to nine infectious disease targets in total, including hepatitis B virus in the Vir-2218 (ALN-HBV02) program currently in Phase 1/2 studies.

About RNAi
RNAi (RNA interference) is a natural cellular process of gene silencing that represents one of the most promising and rapidly advancing frontiers in biology and drug development today. Its discovery has been heralded as "a major scientific breakthrough that happens once every decade or so," and was recognized with the award of the 2006 Nobel Prize for Physiology or Medicine. By harnessing the natural biological process of RNAi occurring in our cells, a new class of medicines, known as RNAi therapeutics, is now a reality. Small interfering RNA (siRNA), the molecules that mediate RNAi and comprise Alnylam's RNAi therapeutic platform, function upstream of today's medicines by potently silencing messenger RNA (mRNA) – the genetic precursors – that encode for disease-causing proteins, thus preventing them from being made. This is a revolutionary approach with the potential to transform the care of patients with genetic and other diseases.

About Vir Biotechnology
Vir Biotechnology is a clinical-stage immunology company focused on combining immunologic insights with cutting-edge technologies to treat and prevent serious infectious diseases. Vir has assembled four technology platforms that are designed to stimulate and enhance the immune system by exploiting critical observations of natural immune processes. Its current development pipeline consists of five product candidates targeting hepatitis B virus, influenza A, human immunodeficiency virus and tuberculosis. For more information, please visit www.vir.bio.

About Alnylam
Alnylam (Nasdaq: ALNY) is leading the translation of RNA interference (RNAi) into a whole new class of innovative medicines with the potential to

transform the lives of people afflicted with rare genetic, cardio-metabolic, hepatic infectious, and central nervous system (CNS)/ocular diseases. Based on Nobel Prize-winning science, RNAi therapeutics represent a powerful, clinically validated approach for the treatment of a wide range of severe and debilitating diseases. Founded in 2002, Alnylam is delivering on a bold vision to turn scientific possibility into reality, with a robust RNAi therapeutics platform. Alnylam's commercial RNAi therapeutic products are ONPATTRO® (patisiran), approved in the U.S., EU, Canada, Japan, Switzerland, and Brazil, and GIVLAARI® (givosiran), approved in the U.S. and EU. Alnylam has a deep pipeline of investigational medicines, including six product candidates that are in late-stage development. Alnylam is executing on its "Alnylam 2020" strategy of building a multi-product, commercial-stage biopharmaceutical company with a sustainable pipeline of RNAi-based medicines to address the needs of patients who have limited or inadequate treatment options. Alnylam is headquartered in Cambridge, MA. For more information about our people, science and pipeline, please visit www.alnylam.com and engage with us on Twitter at @Alnylam or on LinkedIn.

Vir Forward-Looking Statements
This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "may," "will," "expect," "plan," "anticipate," "believe," "estimate," "intend," "potential," "promising" and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements. These forward-looking statements are based on Vir's expectations and assumptions as of the date of this press release. Each of these forward-looking statements involves risks and uncertainties. Actual results may differ materially from these forward-looking statements. Forward-looking statements contained in this press release include statements regarding the potential benefits of the expansion of the collaboration with Alnylam, whether or not any DCs will be identified and selected, Vir's ability to identify novel host targets, the potential anti-viral effects of siRNAs targeting human host factors, whether or not any DCs will be successfully developed and commercialized, and Vir's ability to address the COVID-19 pandemic. Many factors may cause differences between current expectations and actual results including unexpected safety or efficacy data observed during preclinical or clinical studies, challenges in identifying and selecting DCs, challenges in identifying new host factors pertinent to coronaviral infection, difficulty in collaborating with other companies or government agencies, and challenges in accessing manufacturing capacity and the development of treatments for infectious diseases. Other factors that may cause actual results to differ from those expressed or implied in the forward-looking statements in this press release are discussed in Vir's filings with the U.S. Securities and Exchange Commission, including the section titled "Risk Factors" contained therein. Except as required by law, Vir assumes no obligation to update any forward-looking statements contained herein to reflect any change in expectations, even as new information becomes available.

Alnylam Forward Looking Statements
Various statements in this release concerning Alnylam's future expectations, plans and prospects, including, without limitation, Alnylam's views and plans with respect to the potential for RNAi therapeutics, including the translation to humans of recent pre-clinical progress in delivery of siRNAs to the lung, the potential for siRNAs targeting highly conserved regions of SARS-CoV-2 – the virus that causes COVID-19 – and other siRNAs targeting human host factors for COVID-19 and potentially other coronaviruses, its ability to collaborate with Vir to address the emerging public health epidemic, and expectations regarding the continued execution on its "Alnylam 2020" guidance for the advancement and commercialization of RNAi therapeutics, constitute forward-looking statements for the purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995. Actual results and future plans may differ materially from those indicated by these forward-looking statements as a result of various important risks, uncertainties and other factors, including, without limitation: potential risks to Alnylam's business, activities and prospects as a result of the COVID-19 pandemic, or delays or interruptions resulting therefrom; Alnylam's ability to discover and develop novel drug candidates, including candidates targeting the SARS-CoV-2 genome and/or host factors for SARS-CoV-2 infection, and delivery approaches, including to the lung; its ability to successfully demonstrate the efficacy and safety of its product candidates, including candidates targeting the SARS-CoV-2 genome and/or host factors for SARS-CoV-2 infection; the pre-clinical and clinical results for its product candidates, which may not be replicated or continue to occur in other subjects or in additional studies or otherwise support further development of product candidates for a specified indication or at all; actions or advice of regulatory agencies, which may affect the design, initiation, timing, continuation and/or progress of clinical trials, including the ability to accelerate clinical trials of candidates targeting the SARS-CoV-2 genome and/or host factors for SARS-CoV-2 infection, or result in the need for additional pre-clinical and/or clinical testing; delays, interruptions or failures in the manufacture and supply of its product candidates or its marketed products; obtaining, maintaining and protecting intellectual property; intellectual property matters including potential patent litigation relating to its platform, products or product candidates; obtaining regulatory approval for its product candidates, including lumasiran and any product candidates targeting the SARS-CoV-2 genome and/or host factors for SARS-CoV-2 infection, and maintaining regulatory approval and obtaining pricing and reimbursement for its products, including ONPATTRO and GIVLAARI; progress in continuing to establish a commercial and ex-United States infrastructure; successfully launching, marketing and selling its approved products globally, including ONPATTRO and GIVLAARI, and achieve net product revenues for ONPATTRO within its expected range during 2020; Alnylam's ability to successfully expand the indication for ONPATTRO in the future; competition from others using technology similar to Alnylam's and others developing products for similar uses; Alnylam's ability to manage its growth and operating expenses within the ranges of its expected guidance and achieve a self-sustainable financial profile in the future, obtain additional funding to support its business activities, and establish and maintain strategic business alliances and new business initiatives; Alnylam's dependence on third parties, including Vir, for development of candidates for the treatment of infectious diseases, including COVID-19, and commercialization of any infectious disease product resulting therefrom; Regeneron, for development, manufacture and distribution of certain products, including eye and CNS products, and Ironwood, for assistance with the education about and promotion of GIVLAARI in the U.S.; the outcome of litigation; the risk of government investigations; and unexpected expenditures, as well as those risks more fully discussed in the "Risk Factors" filed with Alnylam's most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission (SEC) and in other filings that Alnylam makes with the SEC. In addition, any forward-looking statements represent Alnylam's views only as of today and should not be relied upon as representing its views as of any subsequent date. Alnylam explicitly disclaims any obligation, except to the extent required by law, to update any forward-looking statements.

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