REGENERON

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Regeneron and Alnylam Pharmaceuticals Announce Collaboration to Discover New Treatments for Nonalcoholic Steatohepatitis (NASH)

Collaboration based on new findings from the Regeneron Genetics Center® showing variant in HSD17B13 gene is associated with reduced risk of chronic liver diseases

TARRYTOWN, N.Y. and CAMBRIDGE, Mass., March 21, 2018 /PRNewswire/ -- Regeneron Pharmaceuticals, Inc. (NASDAQ: REGN) and Alnylam Pharmaceuticals, Inc. (NASDAQ: ALNY) today announced a collaboration to identify RNAi therapeutics for the chronic liver disease nonalcoholic steatohepatitis (NASH) and potentially other related diseases. The discovery collaboration is based on a new Regeneron publication in the *New England Journal of Medicine* identifying for the first time a variant in the *HSD17B13* gene that is associated with reduced risk of chronic liver diseases. RNA interference (RNAi) therapeutics represent a novel and innovative approach to specifically target and silence any gene involved in the cause or pathway of human disease; this approach could potentially mimic the naturally occurring loss-of-function genetic variation in *HSD17B13* seen in people who are protected from NASH disease progression.

"At Alnylam, we are dedicated to advancing RNAi therapeutics as a new class of medicines for patients with few or no treatment alternatives," said John Maraganore, Ph.D., Chief Executive Officer at Alnylam. "As we transition Alnylam toward commercialization in rare diseases, the prospect of collaborating with a scientific leader like Regeneron on innovative medicines for more prevalent diseases like NASH makes perfect strategic sense. We believe the exquisite specificity afforded by the RNAi mechanism of action and our industry-leading, proprietary GalNAc-conjugate approach for delivery to the liver is an unparalleled combination for developing an RNAi therapeutic toward genetically-validated targets in NASH."

Under the discovery collaboration, Regeneron will contribute research on the hepatocyte-expressed, genetically-validated *HSD17B13* target, and Alnylam will leverage its RNAi therapeutics platform to identify compounds directed to this target. Regeneron and Alnylam intend to enter into a separate, fifty-fifty collaboration to further research, co-develop and commercialize any therapeutic product candidates that emerge from these discovery efforts.

"Our Regeneron Genetics Center is delivering new targets that will require new approaches beyond our biologics capabilities. Since we are committed to following the science, we are pleased to join together with an equally science-minded company with a novel RNAi therapeutic approach that appears well-suited to impact this particular target," said George D. Yancopoulos, M.D., Ph.D., President and Chief Scientific Officer of Regeneron. "NASH is a major cause of death in this country, with no current treatment options. We're eager to build on the exciting science delivered by the Regeneron team in the hopes of helping patients with debilitating and life-threatening chronic liver diseases."

Chronic liver disease and cirrhosis are leading causes of morbidity and mortality in the United States, accounting for over 38,000 deaths in 2014.[1] The most common precursors to cirrhosis are alcoholic liver disease, chronic hepatitis C and nonalcoholic fatty liver disease (NAFLD). About 3 to 12 percent of adults in the United States have NASH,[2] a more severe type of NAFLD, and prevalence is increasing due to rising rates of obesity.[3,4] There is a great need for new medicines that treat non-viral forms of chronic liver disease, as there are currently no approved drugs for these conditions.

This is Regeneron and Alnylam's second recent collaboration founded on genetic exploration. In January 2018, Alnylam, alongside multiple other leading life sciences companies, joined Regeneron's pre-competitive consortium to sequence 500,000 individuals in the UK Biobank health resource and subsequently make the data publicly available to the global research community.

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 major new class of medicines, known as RNAi therapeutics, is on the horizon. 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 Alnylam Pharmaceuticals

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, and hepatic infectious 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 discovery platform and deep pipeline of investigational medicines, including four product candidates that are in late-stage development. Looking forward, Alnylam will continue to execute 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 employs over 700 people in the U.S. and Europe and 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.

About Regeneron Pharmaceuticals, Inc.
Regeneron (NASDAQ: REGN) is a leading biotechnology company that invents life-transforming medicines for people with serious diseases. Founded and led for 30 years by physician-scientists, our unique ability to repeatedly and consistently translate science into medicine has led to six FDA-approved treatments and numerous product candidates in development, all of which were homegrown in our laboratories. Our medicines and pipeline are designed to help patients with eye disease, heart disease, allergic and inflammatory diseases, pain, cancer, infectious diseases and rare diseases.

Regeneron is accelerating and improving the traditional drug development process through our proprietary *VelociSuite*® technologies, such as *VelocImmune*® which produces optimized fully-human antibodies, and ambitious research initiatives such as the Regeneron Genetics Center, which is conducting one of the largest genetics sequencing efforts in the world.

For additional information about the company, please visit www.regeneron.com or follow @Regeneron on Twitter.

Alnylam Forward-Looking Statements
Various statements in this release concerning Alnylam's future expectations, plans and prospects, including, without limitation, Alnylam's views with respect to the potential for a GalNAc-conjugated RNAi therapeutic as an effective approach for the treatment of NASH, its expectations regarding its discovery collaboration with Regeneron and the parties' intentions to enter into a 50-50 co-development and commercialization arrangement for any therapeutic product candidates that emerge from these discovery efforts, and expectations regarding 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, Alnylam's ability to discover and develop novel drug candidates and delivery approaches, successfully demonstrate the efficacy and safety of its product candidates, 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 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, obtaining, maintaining and protecting intellectual property, Alnylam's ability to enforce its intellectual property rights against third parties and defend its patent portfolio against challenges from third parties, obtaining and maintaining regulatory approval, pricing and reimbursement for products, progress in establishing a commercial and ex-United States infrastructure, 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, 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 for development, manufacture and distribution of products, 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.

Regeneron Forward-Looking Statements and Use of Digital Media
This news release includes forward-looking statements that involve risks and uncertainties relating to future events and the future performance of Regeneron Pharmaceuticals, Inc. ("Regeneron" or the "Company"), and actual events or results may differ materially from these forward-looking statements. Words such as "anticipate," "expect," "intend," "plan," "believe," "seek," "estimate," variations of such words, and similar expressions are intended to identify such forward-looking statements, although not all forward-looking statements contain these identifying words. These statements concern, and these risks and uncertainties include, among others, the nature, timing, and possible success and therapeutic applications of Regeneron's products, product candidates, and research and clinical programs now underway or planned; the likelihood, timing, and scope of possible regulatory approval and commercial launch of Regeneron's late-stage product candidates and new indications for marketed products; the extent to which the results from the research and development programs

conducted by Regeneron or its collaborators (including the discovery referenced in this news release) may be replicated in subsequent studies and lead to therapeutic applications; unforeseen safety issues and possible liability resulting from the administration of products and product candidates in patients; serious complications or side effects in connection with the use of Regeneron's products and product candidates in clinical trials; coverage and reimbursement determinations by third-party payers, including Medicare, Medicaid, and pharmacy benefit management companies; ongoing regulatory obligations and oversight impacting Regeneron's marketed products, research and clinical programs, and business, including those relating to the enrollment, completion, and meeting of the relevant endpoints of post-approval studies; determinations by regulatory and administrative governmental authorities which may delay or restrict Regeneron's ability to continue to develop or commercialize Regeneron's products and product candidates; competing drugs and product candidates that may be superior to Regeneron's products and product candidates; uncertainty of market acceptance and commercial success of Regeneron's products and product candidates and the impact of studies (whether conducted by Regeneron or others and whether mandated or voluntary) on the commercial success of Regeneron's products and product candidates; the ability of Regeneron to manufacture and manage supply chains for multiple products and product candidates; unanticipated expenses; the costs of developing, producing, and selling products; the ability of Regeneron to meet any of its sales or other financial projections or guidance and changes to the assumptions underlying those projections or guidance; the potential for any license or collaboration agreement, including Regeneron's agreements with Sanofi, Bayer, and Teva Pharmaceutical Industries Ltd. (or their respective affiliated companies, as applicable), as well as Regeneron's collaboration with Alnylam Pharmaceuticals, Inc. referenced in this news release, to be cancelled or terminated without any product success; and risks associated with intellectual property of other parties and pending or future litigation relating thereto, including without limitation the patent litigation proceedings relating to Praluent® (alirocumab) Injection, the ultimate outcome of any such litigation proceedings, and the impact any of the foregoing may have on Regeneron's business, prospects, operating results, and financial condition. A more complete description of these and other material risks can be found in Regeneron's filings with the United States Securities and Exchange Commission, including its Form 10-K for the year ended December 31, 2017. Any forward-looking statements are made based on management's current beliefs and judgment, and the reader is cautioned not to rely on any forward-looking statements made by Regeneron. Regeneron does not undertake any obligation to update publicly any forward-looking statement, including without limitation any financial projection or guidance, whether as a result of new information, future events, or otherwise.

Regeneron uses its media and investor relations website and social media outlets to publish important information about the Company, including information that may be deemed material to investors. Financial and other information about Regeneron is routinely posted and is accessible on Regeneron's media and investor relations website (http://newsroom.regeneron.com) and its Twitter feed (http://twitter.com/regeneron).

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