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Alnylam Pharmaceuticals Announces Sanofi Genzyme Opt-in Decision for Co-Development and Co-Commercialization of Fitusiran in Hemophilia and Rare Bleeding Disorders

- Sanofi Genzyme Elects not to Opt in for ALN-AS1 in Acute Hepatic Porphyrias -

- Alnylam Intends to Commercialize ALN-AS1 Globally upon Product Approval -

CAMBRIDGE, Mass.--(BUSINESS WIRE)-- Alnylam Pharmaceuticals, Inc. (Nasdaq:ALNY), the leading RNAi therapeutics company today announced that, pursuant to the companies' global alliance signed in January 2014, Sanofi Genzyme elected to opt in to co-develop (through Sanofi R&D) and co-commercialize fitusiran, an investigational RNAi therapeutic for the treatment of hemophilia and rare bleeding disorders (RBD), in the United States, Canada and Western Europe. This expanded right is in addition to their previously exercised opt-in decision to develop and commercialize fitusiran in their rest of world territories. The opt in decision was based on recent promising interim clinical results from a Phase 1 study of fitusiran presented at the World Federation of Hemophilia (WFH) in late July and additional data that will be presented at the American Society of Hematology (ASH) meeting in December. Alnylam is on track to initiate the fitusiran Phase 3 program in early 2017.

"This marks another milestone for this landmark collaboration and an important step forward on the path to bringing RNAi therapeutics to patients. This decision allows us to broaden the global reach and accelerate the commercial development of fitusiran, a potentially transformative approach to the treatment of hemophilia and rare bleeding disorders, with a well-established partner in Sanofi Genzyme," said John Maraganore, Ph.D., Chief Executive Officer of Alnylam. "We look forward to continued collaboration with Sanofi Genzyme to advance fitusiran as Alnylam transitions toward the commercial stage with our late-stage pipeline."

"We are pleased to collaborate with Alnylam to develop this important and innovative potential new treatment option for people living with hemophilia across the world. We believe that significant unmet need still exists, particularly for patients with inhibitors, and we are excited by the promising early clinical data coming from the fitusiran program," said David Meeker, M.D., Executive Vice President and Head of Sanofi Genzyme. "This expanded collaboration with Alnylam supports our deep and lasting commitment to patients with rare diseases. We look forward to sharing our operational, regulatory and commercial experience with Alnylam as we advance this investigational product."

Alnylam and Sanofi Genzyme will now co-develop and co-commercialize fitusiran in the Co-Commercialization Territory (United States, Canada and Western Europe), while Sanofi Genzyme will retain exclusive rights to develop and commercialize the product in the Sanofi Genzyme Territory (rest of world). Certain development and sales and marketing costs for fitusiran will be shared 50/50 between Sanofi Genzyme and Alnylam. In addition, Sanofi Genzyme will be required to make payments totaling up to $75 million upon the achievement of development and regulatory milestones for fitusiran. Upon the initiation of the first global Phase 3 clinical trial for fitusiran, Alnylam will earn a milestone payment of $25 million. Sanofi Genzyme also will be required to pay tiered double-digit royalties up to twenty percent on annual fitusiran net sales in the Sanofi Genzyme Territory. The companies will share profits equally in the Co-Commercialization Territory, where Alnylam expects to book product sales.

Sanofi Genzyme has elected not to opt in for ALN-AS1, an investigational RNAi therapeutic for acute hepatic porphyrias. The clinical dataset informing the Sanofi Genzyme decision consisted of Part A and Part B results from the ongoing ALN-AS1 Phase 1 study, recently presented at the Society for the Study of Inborn Errors of Metabolism (SSIEM) meeting in September. Based on this decision, Alnylam intends to develop and commercialize ALN-AS1 globally upon product approval. Alnylam will present initial results from Part C of the ongoing Phase 1 study at the ASH meeting in December.

Alliance Background

In January 2014, Alnylam and Sanofi Genzyme, the specialty care global business unit of Sanofi, formed an alliance to accelerate and expand the development and commercialization of RNAi therapeutics across the world. The alliance is structured as a multi-product geographic alliance in the field of rare diseases. Alnylam retains product rights in the United States, Canada and Western Europe, while Sanofi Genzyme obtained the right to access certain programs in Alnylam's current and future Genetic Medicines pipeline in the rest of the world through the end of 2019, together with certain broader co-development/co-commercialization rights and global rights for certain products.

About Fitusiran Phase 1 Study

The ongoing Phase 1 trial of fitusiran is being conducted in the United States, Bulgaria, Russia, Switzerland, and the U.K. as a single- and multi-dose, dose-escalation study comprised of four parts. Part A - which is complete - was a randomized, single-blind, placebo-controlled, single-dose, dose-escalation study (N=4 per cohort; 3:1 randomization of fitusiran:placebo) in healthy volunteers. This part of the study was completed after the first dose cohort received a single subcutaneous dose of fitusiran at 30 mcg/kg. Part B of the study - which is also complete - was an open-label, multi-dose, dose-escalation study that enrolled 12 patients with severe hemophilia A or B. Patients in Part B received three weekly subcutaneous injections of fitusiran at doses of 15, 45, or 75 mcg/kg. Part C of the study - which has completed dosing - is an open-label, multi-dose, dose escalation study that enrolled 18 patients with moderate or severe hemophilia A or B without inhibitors. Twelve patients in Part C received three monthly subcutaneous doses of fitusiran at doses of 225, 450, 900, or 1800 mcg/kg. In addition, six patients in Part C received three fixed monthly subcutaneous doses of fitusiran at 80 mg. Part D of the study is designed to enroll up to 18 patients with inhibitors. Patients in Part D will receive three fixed monthly subcutaneous doses of fitusiran at 50 mg or 80 mg. The primary objective of Parts B, C, and D of the study is to evaluate the safety and tolerability of multiple doses of subcutaneously administered fitusiran in patients with hemophilia, with and without inhibitors. Secondary objectives include assessment of clinical activity as determined by lowering of circulating AT levels and increase in thrombin generation at pharmacologic doses of fitusiran. In addition, exploratory analyses of bleeding are being performed. In the U.K., enrollment has been aided by the Southern Academic Coagulation Consortium (SACC).

About RNAi

RNAi (RNA interference) is a revolution in biology, representing a breakthrough in understanding how genes are turned on and off in cells, and a completely new approach to drug discovery and development. Its discovery has been heralded as "a major scientific breakthrough that happens once every decade or so," and represents one of the most promising and rapidly advancing frontiers in biology and drug discovery today which was awarded the 2006 Nobel Prize for Physiology or Medicine. RNAi is a natural process of gene silencing that occurs in organisms ranging from plants to mammals. By harnessing the natural biological process of RNAi occurring in our cells, the creation of 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, target the cause of diseases by potently silencing specific mRNAs, thereby preventing disease-causing proteins from being made. RNAi therapeutics have the potential to treat disease and help patients in a fundamentally new way.

About Alnylam Pharmaceuticals

Alnylam is a biopharmaceutical company developing novel therapeutics based on RNA interference, or RNAi. The company is leading the translation of RNAi as a new class of innovative medicines. Alnylam's pipeline of investigational RNAi therapeutics is focused in 3 Strategic Therapeutic Areas (STArs): Genetic Medicines, with a broad pipeline of RNAi therapeutics for the treatment of rare diseases; Cardio-Metabolic Disease, with a pipeline of RNAi therapeutics toward genetically validated, liver-expressed disease targets for unmet needs in cardiovascular and metabolic diseases; and Hepatic Infectious Disease, with a pipeline of RNAi therapeutics that address the major global health challenges of hepatic infectious diseases. In early 2015, Alnylam launched its "Alnylam 2020" guidance for the advancement and commercialization of RNAi therapeutics as a whole new class of innovative medicines. Specifically, by the end of 2020, Alnylam expects to achieve a company profile with 3 marketed products, 10 RNAi therapeutic clinical programs - including 4 in late stages of development - across its 3 STArs. The company's demonstrated commitment to RNAi therapeutics has enabled it to form major alliances with leading companies including Ionis, Novartis, Roche, Takeda, Merck, Monsanto, The Medicines Company, and Sanofi Genzyme. In addition, Alnylam holds an equity position in Regulus Therapeutics Inc., a company focused on discovery, development, and commercialization of microRNA therapeutics. Alnylam scientists and collaborators have published their research on RNAi therapeutics in over 200 peer-reviewed papers, including many in the world's top scientific journals such as *Nature, Nature Medicine, Nature Biotechnology, Cell, New England Journal of Medicine,* and *The Lancet*. Founded in 2002, Alnylam maintains headquarters in Cambridge, Massachusetts. For more information about Alnylam's pipeline of investigational RNAi therapeutics, please visit www.alnylam.com.

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 RNAi therapeutics, including fitusiran and ALN-AS1, its expectations regarding the timing of clinical studies and the presentation of clinical data, including for its studies for fitusiran and ALN-AS1, its expectations regarding its STAr pipeline growth strategy, its "Alnylam 2020" guidance for the advancement and commercialization of RNAi therapeutics, and its plans regarding the pursuit of pre-clinical programs 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 our 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 Quarterly Report on Form 10-Q 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.

The scientific information referenced in this news release relating to fitusiran is preliminary and investigative. None of Alnylam's investigational therapeutics have been approved by the U.S. Food and Drug Administration, European Medicines Agency, or any other regulatory authority and no conclusions can or should be drawn regarding the safety or effectiveness of these therapeutics.

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