January 13, 2014

Alnylam and Genzyme Form Transformational Alliance for RNAi Therapeutics as Genetic Medicines

- New Collaboration Expected to Accelerate and Expand Global Product Value for RNAi Therapeutic Genetic Medicine Pipeline, Including "Alnylam 5x15" Programs -

- Alnylam Retains Broad Product Rights in North America and Western Europe and Genzyme Obtains Rights to Access Alnylam's Genetic Medicines Pipeline in the Rest of World and Receives Co-Development, Co-Commercialization Rights or Global Rights to 3 Programs -

- Genzyme Becomes Major Alnylam Shareholder through Purchase of $700 Million of Equity at $80/Share, Bolstering Alnylam's Balance Sheet to Increase Investment in RNAi Therapeutics and Enabling Alnylam's Financial Independence through to Multiple Product Launches -

- Companies to Host Conference Call Monday, January 13 at 9:00 am ET, 6:00 am PT to Discuss Collaboration -

CAMBRIDGE, Mass.--(BUSINESS WIRE)-- Alnylam Pharmaceuticals, Inc. (Nasdaq:ALNY), a leading RNAi therapeutics company, and Genzyme, a Sanofi company (EURONEXT:SAN and NYSE:SNY), announced today that they have formed a transformational alliance for the development and commercialization of RNAi therapeutics as genetic medicines. Genzyme and Alnylam have formed this new alliance to accelerate and expand the development and commercialization of RNAi therapeutics across the world. Alnylam will retain product rights in North America and Western Europe, while Genzyme will obtain the right to access Alnylam's current "5x15"[1] and future genetic medicines pipeline in the rest of the world (ROW), including global product rights for certain programs. In addition, Genzyme becomes a major Alnylam shareholder through an upfront purchase of $700 million of newly issued stock at approximately $80/share, representing an approximately 12% ownership position. This alliance significantly bolsters Alnylam's balance sheet to over $1 billion in cash, enabling an increased investment in the company's RNAi therapeutics pipeline and is expected to secure Alnylam's financial independence through to multiple product launches.

"Genzyme holds a longstanding commitment to improving the lives of patients through the development and commercialization of treatments for rare diseases, both through internal R&D and by working with valuable external collaborators," said David Meeker, M.D., President and Chief Executive Officer of Genzyme. "Our relationship with Alnylam has been highly collaborative, and we believe that their world-class RNAi technology holds the promise to provide a platform for sustained drug development for rare genetic diseases for years to come. With this new alliance, we are significantly broadening our relationship with Alnylam and expanding Genzyme's pipeline of innovative medicines for the treatment of genetic diseases."

"This new relationship with Genzyme is transformational for Alnylam. It is a game changer for both the advancement of RNAi therapeutics as a new class of genetic medicines to patients around the world, and for our commitment to build a leading, independent biopharmaceutical company that delivers value to our shareholders," said John Maraganore, Ph.D., Chief Executive Officer of Alnylam. "In this new alliance, Alnylam benefits enormously from Genzyme's proven global capabilities, enabling us to accelerate and expand market access for our 'Alnylam 5x15' products. At the same time, we retain our product rights in North America and Western Europe, where we remain committed to develop and commercialize our RNAi therapeutics pipeline. We also retain full global product rights for all RNAi therapeutic products outside the genetic medicine field. In addition, this new collaboration significantly expands our balance sheet to over $1 billion in cash to increase our investment in new RNAi therapeutic programs, while securing a cash runway that we believe will allow us to develop and launch multiple products as breakthrough medicines for patients in need."

The new alliance is structured as an exclusive relationship for the worldwide development and commercialization of RNAi therapeutics in the field of genetic medicines, which includes Alnylam's current "5x15"[1] and future genetic medicine programs that reach human proof-of-concept stages up until 2020. Alnylam retains product rights in North America and Western Europe while Genzyme obtains rights to pipeline programs in the ROW. Genzyme's rights are structured as an opt-in that is triggered upon achievement of human proof-of-concept. Alnylam maintains development control for all programs prior to Genzyme's opt-in and maintains development and commercialization control for all programs in its territory.

Upon the closing of the transaction, Genzyme will opt-in to patisiran (ALN-TTR02) - an RNAi therapeutic currently in a Phase 3 trial for the treatment of transthyretin (TTR)-mediated amyloidosis (ATTR) patients with Familial Amyloidotic Polyneuropathy - for its ROW territories, while Alnylam retains full product rights in North America and Western Europe. Alnylam and Genzyme have also agreed to expand their current collaboration on ALN-TTRsc - an RNAi therapeutic currently in a Phase 2 trial for the

treatment of ATTR patients with TTR amyloid cardiomyopathy - where the parties will co-develop and co-promote ALN-TTRsc in North America and Western Europe; Alnylam will maintain development and commercialization control with ALN-TTRsc and Genzyme will develop and commercialize the product in its ROW territories. The companies believe that this broadened collaboration on ALN-TTRsc will increase the product's overall value, as significant market development and commercial operational scale is warranted to maximize the opportunity for both familial cardiac amyloidosis (FAC) and senile systemic amyloidosis (SSA) manifestations of TTR cardiac amyloidosis.

In addition to its rights for Alnylam's current "5x15" programs and the company's future genetic medicine programs in the Genzyme territory, Genzyme has the right to *either* co-develop and co-promote ALN-AT3 for the treatment of hemophilia and other rare bleeding disorders (RBD) in Alnylam's territory - with Alnylam maintaining development and commercialization control - *or* to obtain a global license to ALN-AS1 for the treatment of hepatic porphyrias. Genzyme will exercise this selection right upon completion of human proof-of-concept for the ALN-AT3 and ALN-AS1 programs. Finally, Genzyme has obtained the right for a global license to a single, future genetic medicine program that is not one of the currently defined Alnylam "5x15" programs[1]. Alnylam retains global rights to any RNAi therapeutic genetic medicine program that does not reach the human proof-of-concept stage by 2020, subject to certain limited exceptions. Under the terms of the agreement, Alnylam retains full rights to all current and future RNAi therapeutic programs outside of the field of genetic medicines, including the right to form new collaborations. Finally, the companies have agreed to enter into exclusive discussion and negotiation for a research collaboration to discover novel technologies for delivery of siRNAs in the central nervous system (CNS), where both companies will share in any resulting intellectual property.

The new Alnylam-Genzyme alliance is valued at well over $1 billion, including equity, R&D funding, and potential milestone payments. Genzyme will purchase $700 million of Alnylam stock, or approximately 8.8 million shares at a price of approximately $80/share, representing a 27% premium to the 30-day trailing average of Alnylam stock calculated from the last trading day prior to the agreement's execution. With this issuance of the new shares, Genzyme becomes an approximately 12% owner of Alnylam. As per the terms of the Share Purchase Agreement, Genzyme has the right to purchase up to - but not more than - 30% of Alnylam stock during the term of the active development and commercial collaboration. A number of additional terms of the equity purchase are described in Alnylam's Current Report on Form 8-K filing with the SEC in association with execution of the agreement, and include the right for Genzyme to nominate a board member if their stock ownership exceeds 20%, plus other customary provisions related to voting rights, registration rights, lock-up and selling restrictions, amongst other terms that are customary in a share purchase agreement of this scope.

In addition to the upfront equity purchase, Alnylam will receive R&D funding, starting on January 1, 2015, for programs where Genzyme has elected to opt-in for development and commercialization. For "regional" programs (e.g., patisiran) where Genzyme will develop and commercialize in their ROW territory, Genzyme will pay 20% of global development expenses. For "co-develop/co-promote" programs (i.e., ALN-TTRsc and possibly ALN-AT3 if selected), Genzyme will pay 50% of global development expenses. For "global" programs (i.e., Genzyme's future "non-‘5x15’" global opt-in right and possibly ALN-AS1 if selected), Genzyme will pay 100% of global expenses. In addition, Alnylam is eligible to receive milestones totaling up to $75 million per product for regional and co-develop/co-promote programs. In the case of global Genzyme programs, Alnylam is eligible to receive up to $200 million in milestones per product. Finally, Alnylam is also eligible to receive tiered double-digit royalties up to 20% on net sales on all products commercialized by Genzyme in its territories. In the case of Genzyme's co-develop/co-promote products in the Alnylam territory, the parties will share profits equally and Alnylam will book net sales revenues.

This transaction has been approved by the boards of both companies, and is subject to customary closing conditions and clearances under the Hart-Scott Rodino Antitrust Improvements Act.

Conference Call Information

Alnylam and Genzyme management will discuss this new alliance in a conference call on January 13, 2014 at 9:00 am ET, 6:00 am PT. A slide presentation will also be available on the News & Investors page of the company's website, www.alnylam.com, to accompany the conference call. To access the call, please dial 877-312-7507 (domestic) or 631-813-4828 (international) five minutes prior to the start time and refer to conference ID 31887205. A replay of the call will be available beginning at 12:00 pm ET, 9:00 am PT on January 13, 2014. To access the replay, please dial 855-859-2056 (domestic) or 404-537-3406 (international), and refer to conference ID 31887205.

About RNA Interference (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 with a core focus on RNAi therapeutics as genetic medicines, including programs as part of the company's "Alnylam 5x15^{TM}" product strategy. Alnylam's genetic medicine programs are RNAi therapeutics directed toward genetically defined targets for the treatment of serious, life-threatening diseases with limited treatment options for patients and their caregivers. These include: patisiran (ALN-TTR02), an intravenously delivered RNAi therapeutic targeting transthyretin (TTR) for the treatment of TTR-mediated amyloidosis (ATTR) in patients with familial amyloidotic polyneuropathy (FAP); ALN-TTRsc, a subcutaneously delivered RNAi therapeutic targeting TTR for the treatment of ATTR in patients with familial amyloidotic cardiomyopathy (FAC); ALN-AT3, an RNAi therapeutic targeting antithrombin (AT) for the treatment of hemophilia and rare bleeding disorders (RBD); ALN-AS1, an RNAi therapeutic targeting aminolevulinate synthase-1 (ALAS-1) for the treatment of hepatic porphyrias including acute intermittent porphyria (AIP); ALN-CC5, an RNAi therapeutic targeting complement component C5 for the treatment of complement-mediated diseases; ALN-PCS, an RNAi therapeutic targeting PCSK9 for the treatment of hypercholesterolemia; ALN-AAT, an RNAi therapeutic targeting alpha-1-antitrypsin (AAT) for the treatment of AAT deficiency liver disease; ALN-TMP, an RNAi therapeutic targeting TMPRSS6 for the treatment of beta-thalassemia and iron-overload disorders; and ALN-ANG, an RNAi therapeutic for the treatment of genetic forms of mixed hyperlipidemia and severe hypertriglyceridemia, amongst other programs. As part of its "Alnylam 5x15" strategy, as updated in early 2014, the company expects to have six to seven genetic medicine product candidates in clinical development - including at least two programs in Phase 3 and five to six programs with human proof of concept - by the end of 2015. The company's demonstrated commitment to RNAi therapeutics has enabled it to form major alliances with leading companies including Merck, Medtronic, Novartis, Biogen Idec, Roche, Takeda, Kyowa Hakko Kirin, Cubist, GlaxoSmithKline, Ascletis, Monsanto, The Medicines Company, and Genzyme, a Sanofi company. In January 2014, Alnylam agreed to acquire Sirna Therapeutics, a wholly owned subsidiary of Merck. 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,* the *New England Journal of Medicine,* and *The Lancet*. Founded in 2002, Alnylam maintains headquarters in Cambridge, Massachusetts. For more information, please visit www.alnylam.com.

About "Alnylam 5x15™" and Genetic Medicines

The "Alnylam 5x15" strategy, launched in January 2011, establishes a path for development and commercialization of novel RNAi therapeutics as genetic medicines. Alnylam's genetic medicine programs are RNAi therapeutics directed toward genetically defined targets for the treatment of diseases with high unmet medical need. These programs share several key characteristics including: a genetically defined target and disease expressed in the liver; the potential to have a major impact in a high unmet need population; the ability to leverage the existing Alnylam RNAi platform with clinically proven delivery to the liver; the opportunity to monitor an early biomarker in Phase 1 clinical trials for human proof of concept; and the existence of clinically relevant endpoints for the filing of a new drug application (NDA) with a focused patient database and possible accelerated paths for commercialization. As updated in early 2014, the company expects to have six to seven genetic medicine product candidates in clinical development - including at least two programs in Phase 3 and five to six programs with human proof of concept - by the end of 2015. The "Alnylam 5x15" programs include: patisiran (ALN-TTR02), an intravenously delivered RNAi therapeutic targeting transthyretin (TTR) in development for the treatment of TTR-mediated amyloidosis (ATTR) in patients with familial amyloidotic polyneuropathy (FAP); ALN-TTRsc, a subcutaneously delivered RNAi therapeutic targeting TTR in development for the treatment of ATTR in patients with familial amyloidotic cardiomyopathy (FAC); ALN-AT3, an RNAi therapeutic targeting antithrombin (AT) in development for the treatment of hemophilia and rare bleeding disorders (RBD); ALN-AS1, an RNAi therapeutic targeting aminolevulinate synthase-1 (ALAS-1) in development for the treatment of porphyria including acute intermittent porphyria (AIP); ALN-CC5, an RNAi therapeutic targeting complement component C5 in development for the treatment of complement-mediated diseases; ALN-PCS, an RNAi therapeutic targeting PCSK9 in development for the treatment of hypercholesterolemia; ALN-AAT, an RNAi therapeutic targeting alpha-1-antitrypsin (AAT) for the treatment of AAT deficiency liver disease; ALN-TMP, an RNAi therapeutic targeting TMPRSS6 in development for the treatment of beta-thalassemia and iron-overload disorders; and ALN-ANG, an RNAi therapeutic for the treatment of genetic forms of mixed hyperlipidemia and severe hypertriglyceridemia, amongst other programs. In 2014, Alnylam and Genzyme, a Sanofi company, formed a multi-product geographic alliance on Alnylam's genetic medicine programs. Specifically, Alnylam will lead development and commercialization of programs in North America and Europe, while Genzyme will develop and commercialize products in the rest of world. In addition, Alnylam and Genzyme will co-develop and co-commercialize ALN-TTRsc in North America and Europe.

Alnylam Forward-Looking Statements

Various statements in this press release concerning Alnylam's future expectations, plans and prospects, including without limitation, Alnylam's views with respect to the potential for RNAi therapeutics, including the programs in its 5x15 pipeline,

Genzyme's participation in the development and commercialization of RNAi therapeutics, its expectations regarding the receipt of potential R&D payments, development, regulatory and sales milestones and royalties from Genzyme, and its expectations regarding available cash for its operations through multiple product launches, constitute forward-looking statements for the purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by these forward-looking statements as a result of various important 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 drug candidates, the pre-clinical and clinical results for its product candidates, which may not support further development of product candidates, actions of regulatory agencies, which may affect the initiation, timing and progress of clinical trials, Genzyme's ability to successfully advance patisiran, ALN-TTRsc and other products in the Genzyme territory, resulting in the potential payment of milestones and royalties to Alnylam, as well as Alnylam's ability to develop and commercialize such products in the rest of the world, the parties ability to successfully co-develop and co-promote ALN-TTRsc and potentially a second product in North America and Western Europe, obtaining, maintaining and protecting intellectual property, Alnylam's ability to enforce its patents against infringers and defend its patent portfolio against challenges from third parties, obtaining regulatory approval for products, competition from others using technology similar to Alnylam's and others developing products for similar uses, Alnylam's ability to 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, marketing, sales and distribution of products, the outcome of litigation, 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 to update any forward-looking statements.

[1]For purposes of the Alnylam-Genzyme agreement, Alnylam's current "5x15" programs include: patisiran, an RNAi therapeutic targeting TTR for the treatment of ATTR patients with FAP; ALN-TTRsc, an RNAi therapeutic targeting TTR for the treatment of ATTR patients with TTR amyloid cardiomyopathy, including FAC and SSA; ALN-AT3, an RNAi therapeutic targeting antithrombin (AT) for the treatment of hemophilia and RBD; ALN-CC5, an RNAi therapeutic targeting complement component C5 for the treatment of complement-mediated diseases; ALN-AS1, an RNAi therapeutic targeting aminolevulinate synthase-1 (ALAS-1) for the treatment of hepatic porphyrias; and ALN-AAT, an RNAi therapeutic targeting alpha-1-antitrypsin (AAT) for the treatment of liver disease associated with AAT deficiency.

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