Alnylam and Collaborators to Present Clinical Study Results in Acute Hepatic Porphyrias (AHPs) at The 53rd International Liver Congress™ of the European Association for the Study of the Liver (EASL)

March 28, 2018

? Updated Results to be Presented from Clinical Studies of Givosiran, an Investigational RNAi Therapeutic for the Treatment of AHPs ?

? In Addition, Data to be Presented from EXPLORE Natural History Study Characterizing the Burden of Disease in AHPs ?

CAMBRIDGE, Mass.--(BUSINESS WIRE)--Mar. 28, 2018-- Alnylam Pharmaceuticals, Inc. (Nasdaq: ALNY), the leading RNAi therapeutics company, announced today that Alnylam scientists and collaborators will present new results from the Phase 1 and Phase 1/2 open-label extension (OLE) studies of givosiran, its investigational RNA interference (RNAi) therapeutic, in patients with acute hepatic porphyrias (AHPs) at the European Association for the Study of the Liver (EASL) 53rd Annual International Liver Congress™, being held April 11-15, 2018 in Paris, France. Data will also be presented from the ongoing EXPLORE study, which aims to characterize the natural history and clinical management of patients with AHPs related to medical history, healthcare utilization, and quality of life.

Presentations include:

- **A Phase 1/2, Randomized, Placebo Controlled and Open Label Extension Studies of Givosiran an Investigational RNA Interference (RNAi) Therapeutic, in Patients with Acute Intermittent Porphyria**
  Oral presentation, Saturday, April 14, 2018 at 10:00 am CET
  Lead authors: E Sardh, P Harper, M Balwani
- **EXPLORE: A Prospective, Multinational Natural History Study of Patients with Acute Hepatic Porphyria with Recurrent Attacks**
  Oral presentation, Saturday, April 14, 2018 at 8:15 am CET
  Lead authors: L Gouya, J Bloomer, M Balwani
- **Impact of Acute Hepatic Porphyrias on Quality of Life and Work Loss: An Analysis of the EXPLORE Natural History Study**
  Poster presentation, Saturday, April 14, 2018 starting at 9:00 am CET
  Lead authors: L Gouya, M Balwani, DM Bissell
- **Trends in Healthcare Utilization in the United States and Europe associated with Patients with Acute Hepatic Porphyria with Recurrent Attacks in EXPLORE: A Prospective, Multinational Natural History Study of Patients with Acute Hepatic Porphyrias**
  Poster presentation, Saturday, April 14, 2018 starting at 9:00 am CET
  Lead authors: L Gouya, M Balwani, DM Bissell

Alnylam is also sponsoring a mini-workshop titled "*Developing Innovative Treatments for Patients with Rare Diseases: Liver-Targeted RNA Interference Therapeutics*" on Friday, April 13 from 6:30-7:30 pm CET.

Conference Call
Alnylam management will discuss these results via conference call on Saturday, April 14, 2018 at 2:00 pm CET (8:00 am ET). A slide presentation will also be available on the Investors page of the Company's website, www.alnylam.com, to accompany the conference call.

About Givosiran
Givosiran (ALN-AS1) is an investigational RNAi therapeutic specifically targeting liver ALAS1 mRNA and given by subcutaneous injection for the treatment of acute hepatic porphyrias (AHPs). Monthly administration of givosiran has the potential to significantly lower induced liver ALAS1 levels in a sustained manner and thereby decrease neurotoxic heme intermediates, aminolevulinic acid (ALA) and porphobilinogen (PBG) to near normal levels. By reducing accumulation of these intermediates, givosiran has the potential to prevent or significantly reduce the occurrence of severe and life-threatening attacks, control chronic symptoms, and decrease the burden of the disease. Givosiran utilizes Alnylam's Enhanced Stabilization Chemistry ESC-GalNAc conjugate technology, which enables subcutaneous dosing with increased potency and durability and a wide therapeutic index. Givosiran has been granted Breakthrough Therapy designation by the U.S. Food and Drug Administration (FDA) and PRIME designation by the European Medicines Agency (EMA). Givosiran has also been granted orphan drug designations in both the U.S. and the EU for the treatment of AHPs. The safety and efficacy of givosiran are currently being investigated in the ENVISION Phase 3 clinical trial and have not been evaluated by the FDA, the EMA or any other health authority.

About Acute Hepatic Porphyrias
Acute hepatic porphyrias (AHPs) are a family of rare, genetic diseases characterized by potentially life-threatening attacks and for many patients chronic debilitating symptoms that negatively impact daily functioning and quality of life. AHPs are comprised of four subtypes, each resulting from a genetic defect leading to deficiency in one of the enzymes of the heme biosynthesis pathway in the liver: acute intermittent porphyria (AIP), hereditary coproporphyria (HCP), variegate porphyria (VP), and ALAD-deficiency porphyria (ADP). These defects cause the accumulation of neurotoxic heme intermediates – aminolevulinic acid (ALA) and porphobilinogen (PBG) – that may cause attacks and ongoing symptoms between attacks. Common symptoms of AHPs include severe, diffuse abdominal pain, weakness, nausea, and fatigue. The symptoms of AHPs can often resemble that of other more common conditions such as irritable bowel syndrome, appendicitis, fibromyalgia, and endometriosis and consequently, patients afflicted with AHPs are often misdiagnosed or remain undiagnosed for up to 15 years. Currently, there are no treatments approved to prevent debilitating attacks and treat the chronic symptoms of the disease.

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.

Alnylam Forward Looking Statements

Various statements in this release concerning Alnylam's future expectations, plans and prospects, including, without limitation, Alnylam's planned development of investigational RNAi therapeutic givosiran, its views with respect to the potential for givosiran, and its 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.

Givosiran has not been approved by the FDA, EMA, or any other regulatory authority and no conclusions can or should be drawn regarding its safety or effectiveness.

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