Strategic Restructuring of Sanofi Alliance

January 7, 2018

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Agenda

Welcome

- Christine Regan Lindenboom
  Vice President, Investor Relations & Corporate Communications

Overview of Alnylam-Sanofi Alliance

- John Maraganore, Ph.D.
  Chief Executive Officer

Restructured Alliance Product Rights and Economic Terms

- Yvonne Greenstreet, MBChB
  Executive Vice President, Chief Operating Officer

Commercial Implications for ATTR Amyloidosis Programs

- Barry Greene
  President

Q&A Session

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Alnylam Forward Looking Statements

This presentation contains forward-looking statements, within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. There are a number of important factors that could cause actual results to differ materially from the results anticipated by these forward-looking statements. These important factors include our ability to discover and develop novel drug candidates and delivery approaches and successfully demonstrate the efficacy and safety of our product candidates; pre-clinical and clinical results for our product candidates; actions or advice of regulatory agencies; delays, interruptions or failures in the manufacture and supply of our product candidates; our ability to obtain, maintain and protect intellectual property, enforce our intellectual property rights and defend our patent portfolio; our ability to obtain and maintain regulatory approval, pricing and reimbursement for products; our progress in establishing a commercial and ex-United States infrastructure; competition from others using similar technology and developing products for similar uses; our ability to manage our growth and operating expenses, obtain additional funding to support our business activities and establish and maintain business alliances; the outcome of litigation; and the risk of government investigations; as well as those risks more fully discussed in our most recent quarterly report on Form 10-Q under the caption “Risk Factors.” If one or more of these factors materialize, or if any underlying assumptions prove incorrect, our actual results, performance or achievements may vary materially from any future results, performance or achievements expressed or implied by these forward-looking statements. All forward-looking statements speak only as of the date of this presentation and, except as required by law, we undertake no obligation to update such statements.

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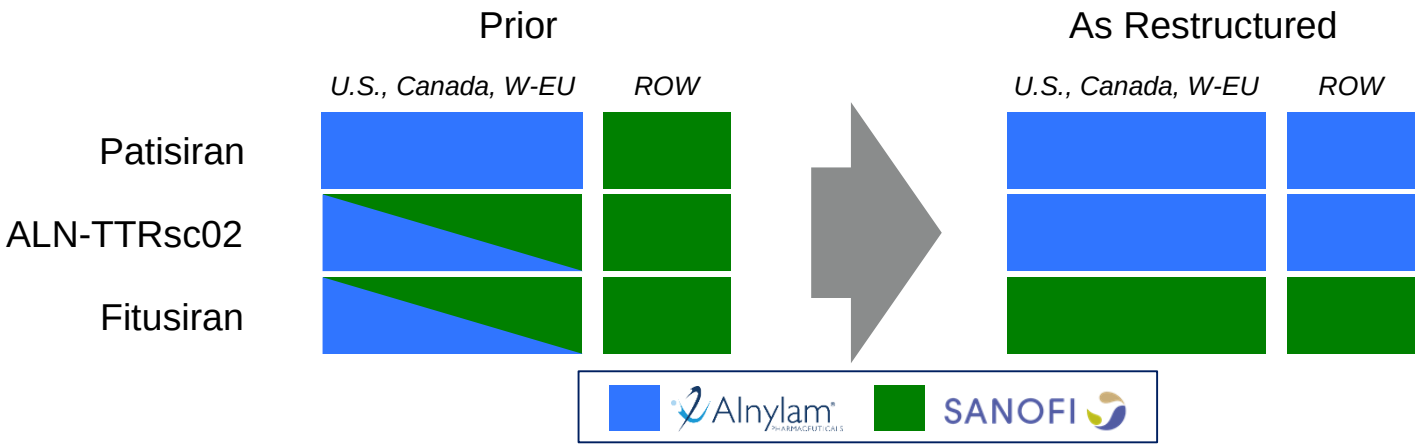
John Maraganore, Ph.D.
Chief Executive Officer

Overview of Alnylam-Sanofi Alliance

Recent News: Strategic Restructuring of Sanofi Alliance

Alnylam and Sanofi have restructured alliance to streamline and optimize product development and commercialization



Alnylam obtains global rights to ATTR amyloidosis products, Sanofi obtains global rights to fitusiran

- Opportunity to maximize value of all product opportunities on global basis
- Alnylam to receive 15-30% royalties on global fitusiran sales
- Sanofi Genzyme to receive up to 25% royalties on ROW patisiran sales and 15-30% royalties on global ALN-TTRsc02 sales

Global ATTR amyloidosis product rights expected to unlock significant value creation opportunity

- Aligns patisiran and ALN-TTRsc02 development and commercialization efforts
- Enables comprehensive development of both products across full spectrum of ATTR amyloidosis disease
- Establishes global footprint for givosiran and future Alnylam products

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Yvonne Greenstreet, MBChB
Executive Vice President, Chief Operating Officer

Restructured Alliance Product Rights and Economic Terms

Alnylam-Sanofi Alliance Restructuring

Restructuring of product rights

- Alnylam obtains global rights to RNAi programs for ATTR amyloidosis: patisiran and ALN-TTRsc02
- Sanofi obtains global rights to fitusiran for hemophilia and rare bleeding disorders

Economic alignment enables participation in commercial success

- Alnylam and Sanofi each to receive reciprocal tiered royalties of 15-30% on net global sales of fitusiran and ALN-TTRsc02, respectively

Sanofi to receive royalties on patisiran up to 25% of net sales in ROW

- In Japan, 25% royalty applies from date of commercial launch
- No royalties will be paid on patisiran sales in U.S., Canada or Western Europe

Alnylam to receive $50M milestone payment following dosing of first patient in ATLAS Phase 3 program for fitusiran

- No additional milestones due to either party for patisiran, ALN-TTRsc02 or fitusiran

All other material terms of 2014 alliance remain unchanged

- Sanofi maintains opt-in rights for genetic medicine programs developed through end-2019 following completion of proof-of-concept studies
- Sanofi has one remaining global opt-in right

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Barry Greene

President

Commercial Implications for ATTR Amyloidosis Programs

Patisiran Pathway to Market

Building a Customer-Centric Organization

Only product in hATTR amyloidosis, investigational or approved, to demonstrate disease reversal*

FDA	EMA	PMDA JAPAN
✓ Fast Track	✓ Accelerated Assessment	☐ J-NDA submission
✓ Orphan Drug Designation	✓ MAA submitted	☐ ROW submissions
✓ Breakthrough Status	☐ EMA approval	☐ Japan launch
✓ NDA submitted	☐ Reimbursement	☐ ROW launches
☐ FDA approval	☐ EU launch	
☐ U.S. launch		

Staged build of >250 employees in customer-facing activities WW

Ongoing patient ID efforts in U.S./EUCAN, expanding WW

Manufacturing and supply chain for U.S./EUCAN, expanding WW

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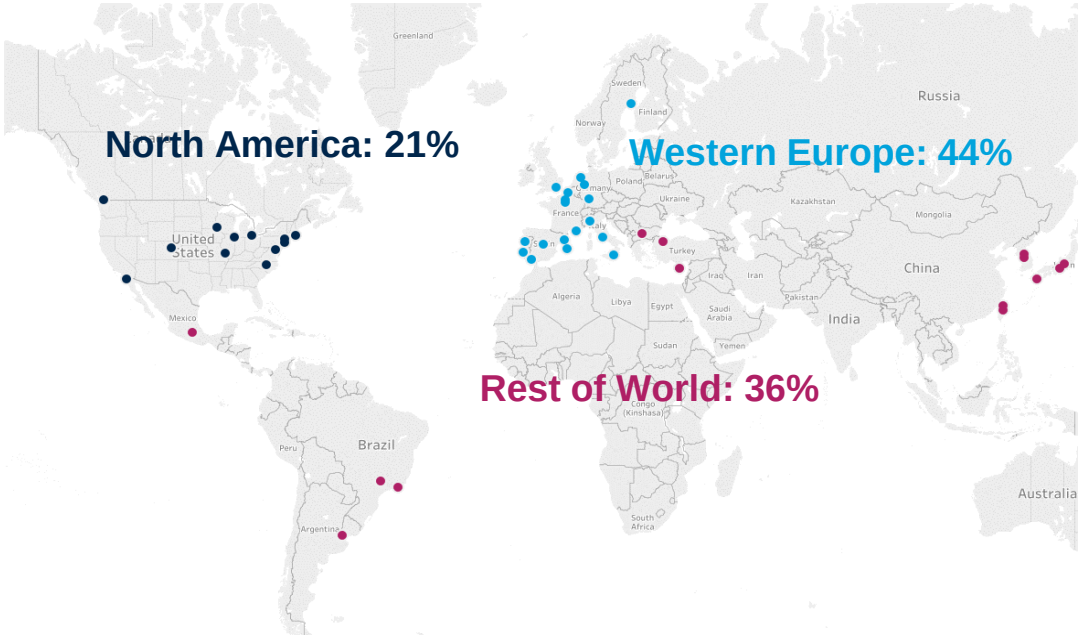
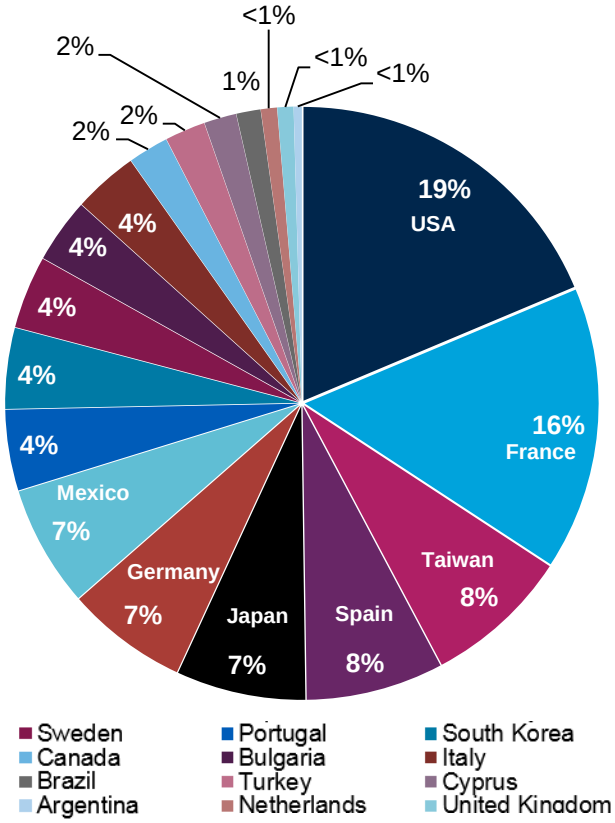
*Negative mean change from baseline for mNIS+7 and Norfolk QOL-DN scores

APOLLO Phase 3 Study

Study Enrollment

225 patients with hATTR amyloidosis with polyneuropathy from 44 sites in 19 countries enrolled between Dec 2013 and Jan 2016





*__North America__: USA, CAN; __Western Europe__: DEU, ESP, FRA, GBR, ITA, NLD, PRT, SWE; __Rest of world__: *Asia:* JPN, KOR, TWN, *Eastern Europe*: BGR, CYP, TUR; Asia: JPN, KOR, TWN; *Central & South America:* MEX, ARG, BRA

Raising hATTR Awareness and Improving Care

Diagnosis, Education, Patient Support, and Access are Key Priorities

Diagnosis

AlnylamAct™

- Started 2014, expanded in 2016
- Free genetic screening
- Now includes panels for neuropathy, cardio
- >350 physicians enrolled; >3000 tests, identified ~300 patients with hATTR mutations

DISCOVERY

- Screened heart failure patients for prevalence of TTR mutations
- >1000 enrolled, identified 77 patients with hATTR mutations

Education

HCP Website

hATTRamyloidosis.com

Patient Website

hATTRbridge.com

Support

Care Days

- Local support program in partnership with local KOLs
- Agenda includes disease overview, tips for living with hATTR, and support and resources
- 4 programs hosted in 2017; total attendance over 100 people

Advocacy

- Working collaboratively to improve care for hATTR

Access

Expanded Access Program

- Providing expanded access to patisiran to patients who meet program criteria
- Now open at >15 sites in U.S.; compassionate use ongoing in EU

Alnylam Patient Access Principles

Data

Big Data Projects

- Integrating data sources to inform MD targeting for field engagement

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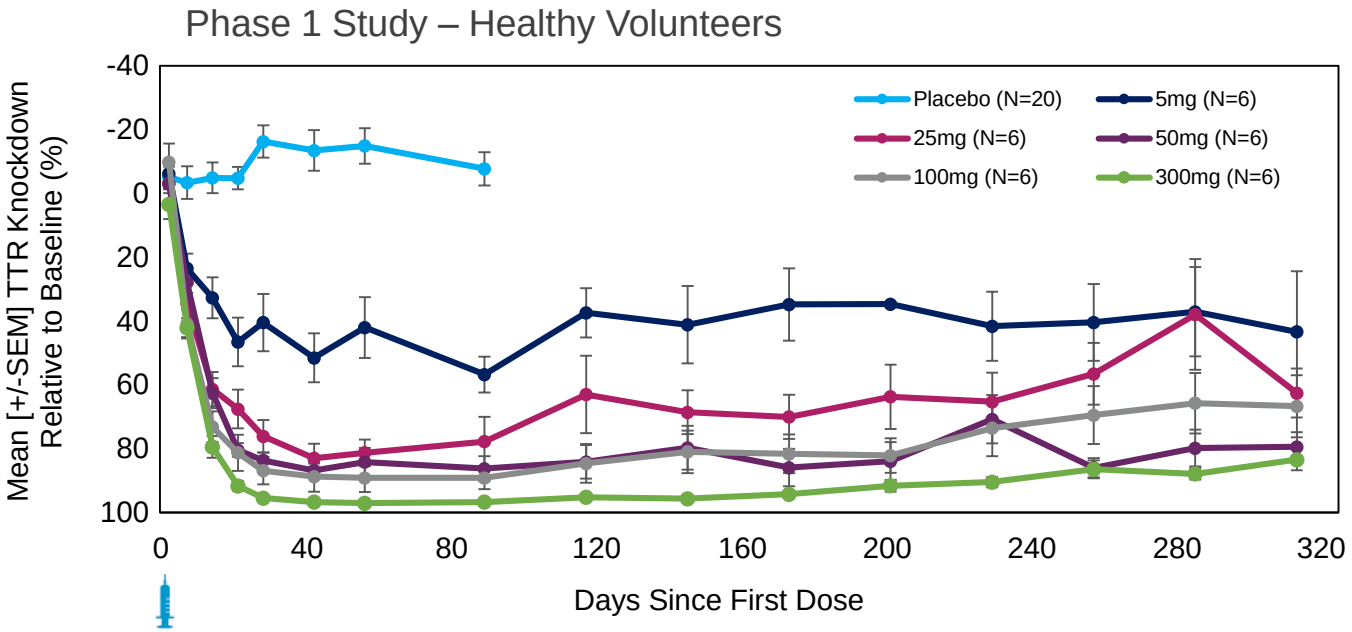
ALN-TTRsc02 Opportunity

Advancing Continued Innovation for Patients with ATTR Amyloidosis



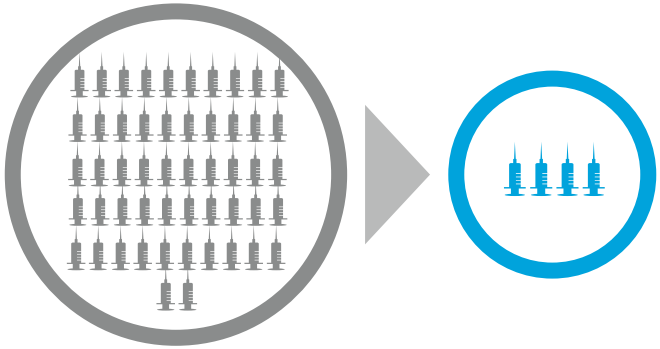
Mean max TTR KD of 97.1%; ~80% TTR KD at nearly 1 year after single 50 mg dose*

Safety (N=80):

- No SAEs and no discontinuations due to AEs
- All AEs mild or moderate in severity

Inotersen

52 DOSES PER YEAR



ALN-TTRsc02

4 DOSES PER YEAR ANTICIPATED

Expect to initiate Phase 3 study in **Late 2018**

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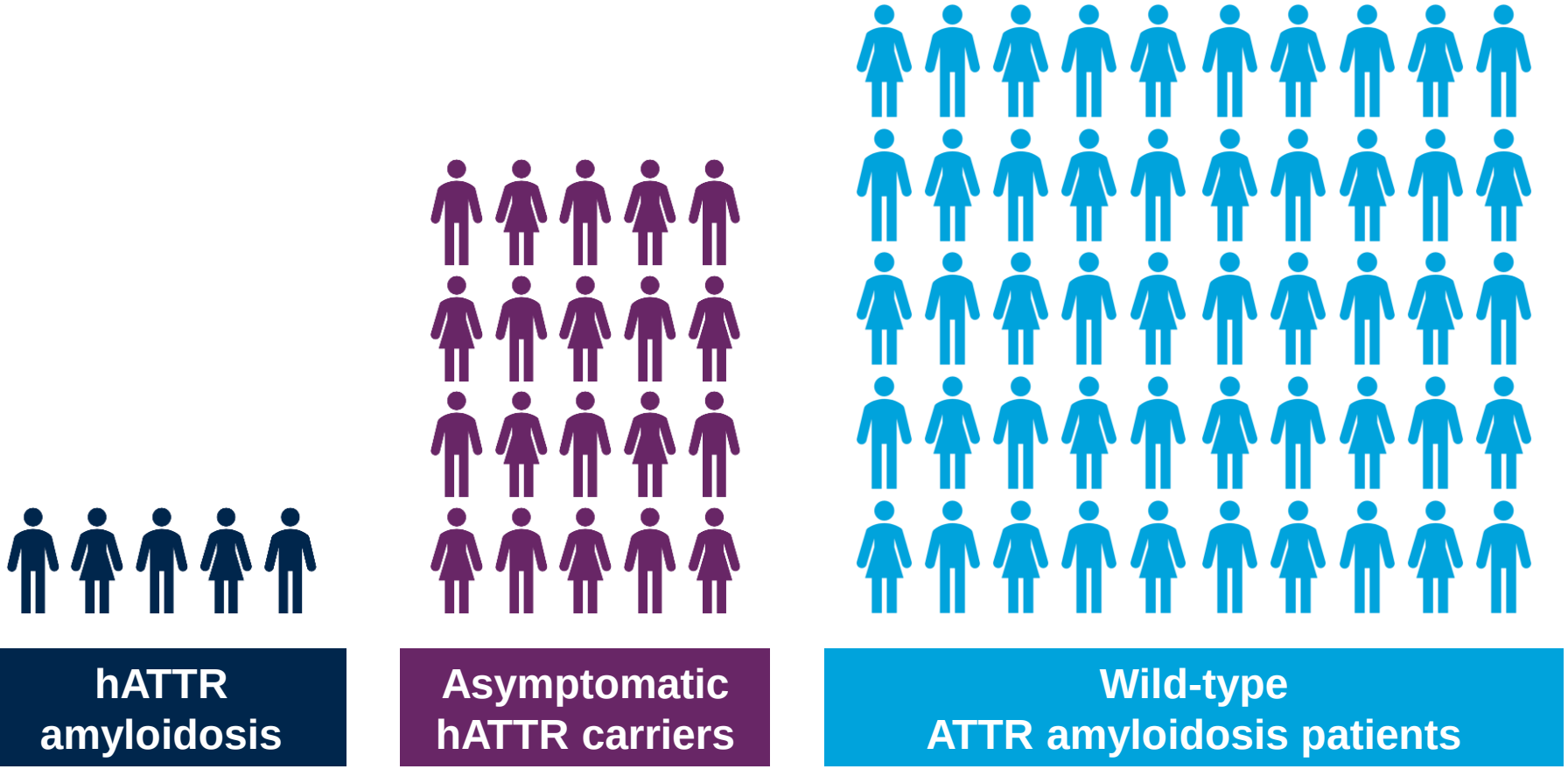
*As of data cutoff on 31May2017

ALN-TTRsc02 Market Opportunity*

Potential for Significant Expansion in ATTR Amyloidosis



hATTR amyloidosis

Asymptomatic hATTR carriers

Wild-type ATTR amyloidosis patients

*Intended to be illustrative and not intended to represent specific estimates of patient numbers

Alnylam Clinical Development Pipeline

Focused in 3 Strategic Therapeutic Areas (STARs):

- Genetic Medicines
- Cardio-Metabolic Diseases
- Hepatic Infectious Diseases

		HUMAN POC[1]	BREAKTHROUGH DESIGNATION	EARLY STAGE *(IND or CTA Filed-Phase 2)*	LATE STAGE *(Phase 2-Phase 3)*	REGISTRATION/ COMMERCIAL[2]	COMMERCIAL RIGHTS
Patisiran	*Hereditary ATTR Amyloidosis*	✓	●			●	Global
Givosiran	*Acute Hepatic Porphyrias*	✓	●		●		Global
Fitusiran	*Hemophilia and Rare Bleeding Disorders*	✓			●		15-30% Royalties
Inclisiran	*Hypercholesterolemia*	✓			●		Milestones & up to 20% Royalties
ALN-TTRsc02	*ATTR Amyloidosis*	✓		●			Global
Cemdisiran	*Complement-Mediated Diseases*	✓		●			Global
Lumasiran	*Primary Hyperoxaluria Type 1*	✓		●			Subject to partner option rights

[1]POC, proof of concept – defined as having demonstrated target gene knockdown and/or additional evidence of activity in clinical studies
[2]Includes marketing application submissions

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Q&A Session


THANK YOU
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