JUNE 29, 2021

Regeneron Genetics Medicines

Building the Pipeline of the Future

Regeneron Pharmaceuticals, Inc.

REGENERON®

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These statements concern, and these risks and uncertainties include, among others, the impact of SARS-CoV-2 (the virus that has caused the COVID-19 pandemic) on Regeneron's business and its employees, collaborators, and suppliers and other third parties on which Regeneron relies, Regeneron's and its collaborators' ability to continue to conduct research and clinical programs, Regeneron's ability to manage its supply chain, net product sales of products marketed or otherwise commercialized by Regeneron and/or its collaborators (collectively, "Regeneron's Products"), and the global economy; the nature, timing, and possible success and therapeutic applications of Regeneron's Products and product candidates being developed by Regeneron and/or its collaborators (collectively, "Regeneron's Product Candidates") and research and clinical programs now underway or planned, including Regeneron's Product Candidates discussed in this presentation (such as itepekimab, cemdisiran and pozelimab, and NTLA-2001) and the use of human genetics in Regeneron's research; safety issues resulting from the administration of Regeneron's Products and Regeneron's Product Candidates in patients, including serious complications or side effects in connection with the use of Regeneron's Products and Regeneron's Product Candidates in clinical trials; the likelihood, timing, and scope of possible regulatory approval and commercial launch of Regeneron's Product Candidates and new indications for Regeneron's Products; the likelihood and timing of achieving any of the anticipated milestones described in this presentation; the extent to which the results from the research and development programs conducted by Regeneron and/or its collaborators (including those discussed in this presentation) may be replicated in other studies and/or lead to advancement of product candidates to clinical trials, therapeutic applications, or regulatory approval; ongoing regulatory obligations and oversight impacting Regeneron's Products, research and clinical programs, and business, including those relating to patient privacy; 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 Regeneron's Product Candidates; competing drugs and product candidates that may be superior to, or more cost effective than, Regeneron's Products and Regeneron's Product Candidates; uncertainty of the utilization, market acceptance, and commercial success of Regeneron's Products and Regeneron's 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 Regeneron's Product Candidates; the availability and extent of reimbursement of Regeneron's Products from third-party payors, including private payor healthcare and insurance programs, health maintenance organizations, pharmacy benefit management companies, and government programs such as Medicare and Medicaid; coverage and reimbursement determinations by such payors and new policies and procedures adopted by such payors; the ability of Regeneron to manufacture and manage supply chains for multiple products and product candidates; the ability of Regeneron's collaborators, suppliers, or other third parties (as applicable) to perform manufacturing, filling, finishing, packaging, labeling, distribution, and other steps related to Regeneron's Products and Regeneron's Product Candidates; unanticipated expenses; the costs of developing, producing, and selling products; the ability of Regeneron to meet any of its financial projections or guidance and changes to the assumptions underlying those projections or guidance; risks associated with intellectual property of other parties and pending or future litigation relating thereto, other litigation and other proceedings and government investigations relating to the Company and/or its operations, the ultimate outcome of any such proceedings and investigations, and the impact any of the foregoing may have on Regeneron's business, prospects, operating results, and financial condition; and 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 the collaboration agreements with Alnylam Pharmaceuticals, Inc., Intellia Therapeutics, Inc., and Decibel Therapeutics, Inc. discussed in this presentation, to be cancelled or terminated. A more complete description of these and other material risks can be found in Regeneron's filings with the U.S. Securities and Exchange Commission, including its Form 10-K for the fiscal year ended December 31, 2020 and Form 10-Q for the quarterly period ended March 31, 2021, in each case in the section thereof captioned "Item 1A. Risk Factors." 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 or otherwise) any forward-looking statement, including without limitation any financial projection or guidance, whether as a result of new information, future events, or otherwise.

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Vice President of Research, Infectious Diseases and Viral Vector Technologies

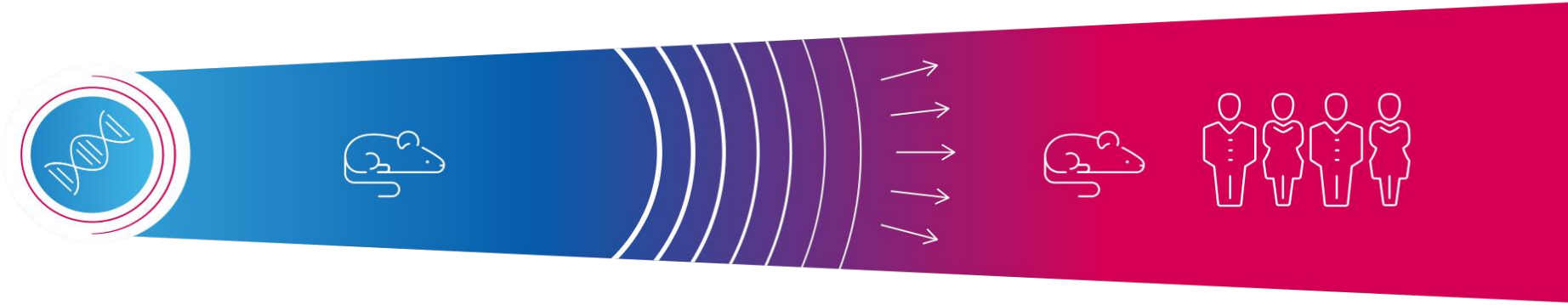
Introduction

George D. Yancopoulos, MD, PhD
Co-Founder, President & Chief Scientific Officer

Agenda

1. Regeneron Genetics Medicines: Building the Pipeline of the Future
2. Regeneron Genetics Center (RGC)
   - Novel Target Discovery
   - Genetics Guided Development
     - Enhance Probability of Success
     - Identify Patients Most Likely to Benefit
3. Future of Medicine: Novel Turnkey Modalities to Drugs
   - siRNA Gene Silencing
   - Genome Editing – Knockout
   - Genome Editing – Insertion
   - Gene Therapy

Supercharging the Future of Genetics and Turnkey Therapeutics Platforms at Regeneron



Learnings from **mouse genetics**

VELOCIGENE®

+

Unlocking capabilities of **mouse and human genetics** through

VELOCIGENE® + REGENERON® GENETICS CENTER

Existing Turnkey Technologies
Biologicals

TRAPs

Antibodies & Bispecifics

siRNA

Genome editing (insertion/ knockout)

Gene Therapy

REGENERON

Regeneron Genetics Medicines

Based on Core Regeneron Principles

- Genetics-based target discovery and validation
- Turnkey therapeutics platforms
  - Precision medicines with target specificity
- Speed to the clinic
- Intelligent and innovative clinical design for rapid proof-of-concept

Turning a Distant Dream Into a Near-Term Reality

- 5-10 years of deep investment:
  - Human sequencing and “Big bioData” generation
  - Internal efforts and external collaborations yielding turnkey therapeutics

Genetics Medicines Portfolio

- Three programs in the clinic
- Multiple clinical program initiations planned per year with several potential product approvals by 2025
- Currently 30+ programs in research and candidate selection

Vision for the Future

Continue to build technology and platforms to expand the power and reach of genetics medicines

Regeneron Genetics Center (RGC)

Aris Baras, MD, MBA
Senior Vice President, Regeneron Genetics Center

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WHAT IS RGC?

The Regeneron Genetics Center® (RGC) is a uniquely integrated research initiative that seeks to improve patient care by using genomic approaches to speed drug discovery and development.

Regeneron Genetics Center (RGC) Fast Facts

- ✓ **LARGEST HUMAN SEQUENCE DATABASE**
  - ~2 million exomes by the end of 2021
    - Includes entire UK Biobank
  - Almost all linked to detailed electronic health records
  - Most powerful resource linking human genetic variation to disease
- ✓ **INNOVATIVE BIG BIODATA ANALYTICS**
- ✓ **LEADER IN ROBOTICS AND SEQUENCING AUTOMATION**
  - Amplifies currently available sequencing technology

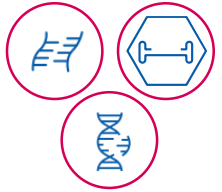
Regeneron Genetics Medicines

Novel Genetics-based Drug Target Discovery

- RGC discovered >10 novel drug targets e.g.:
  - HSD17B13 for NASH (clinical stage)
  - Novel target for obesity and diabetes
  - Novel target for glaucoma

Genetics-based Drug Development & Precision Medicine

- RGC database links drug targets with disease impact, enhancing probability of clinical trial success
  - e.g., IL-33 & COPD
- RGC database identifies patients most likely to benefit
  - e.g., PCSK9 & high-risk/ high-benefit patients



Leveraging New Turnkey Therapeutic Approaches

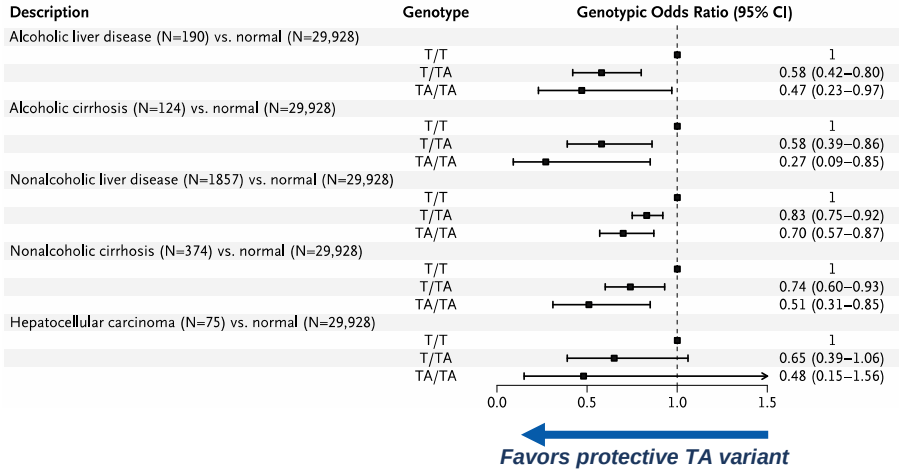
- siRNA gene silencing
  - Alnylam collaboration leverages RGC discoveries
- Genome editing – Knockout
  - Intellia collaboration
- Genome editing – Insertion
  - Intellia collaboration
- Targeted viral-based gene delivery and expression
  - Decibel collaboration

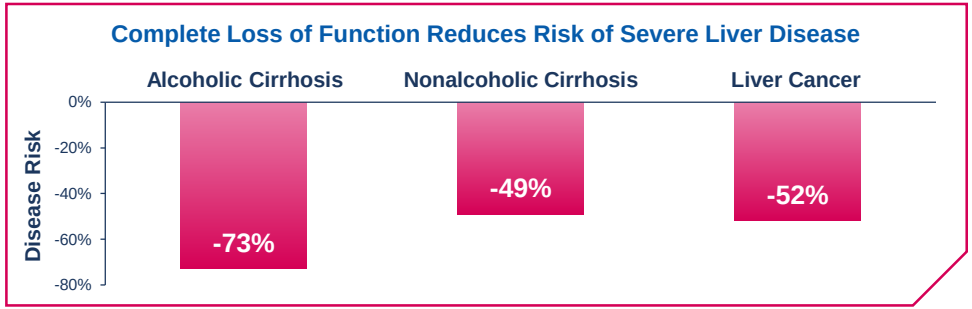
Novel Target Discovery: Translating Protective Genetics Into Therapeutics That Mimic Genetic Effects

HSD17B13 Target for Liver Disease: Collaboration with Alnylam

- RGC discovered *HSD17B13* variants that protect against liver disease
  - *Abul-Husn et al. NEJM. 2018*
- HSD17B13 siRNA, in partnership with Alnylam, reached the clinic in <3 years
  - Phase 1 NASH study underway; healthy volunteer data by YE 2021
- RGC has delivered additional novel protective genetic therapeutic targets for NASH that are part of collaborative efforts with Alnylam

People With the Protective *HSD17B13* Gene Variant Have ~30-70% Lower Odds of Chronic Liver Disease





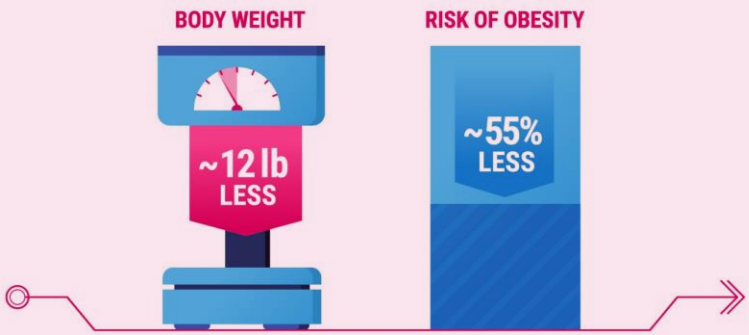
Adapted from Abul-Husn et al. NEJM. 2018

Novel Target Discovery

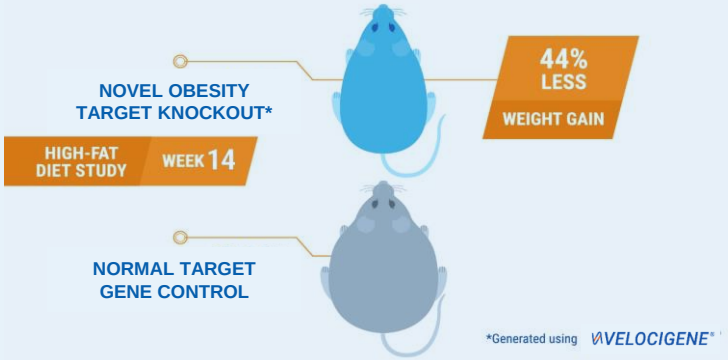
Novel Obesity Target

- Sequenced more than 600,000 participants in UK, US, and Mexico to find rare genetic ‘superpower’ that protects against obesity
- Humans and mice with this rare genetic variant are protected against obesity
- Multiple therapeutic programs under consideration, including *VelocImmune*® technology and siRNA
- Publication forthcoming July 2021

Humans With This Rare Genetic Variant Are Protected Against Obesity



Mice Engineered With This Rare Genetic Variant (By Velocigene®) Are Protected Against Obesity



REGENERON Alnylam PHARMACEUTICALS

Genetics Guided Development, Enhancing Probability of Success

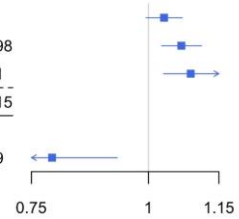
IL-33 Genetics Guiding Successful Clinical POCs

- IL-33 genetically linked to COPD and asthma via risk increasing variants and protective loss of function variants
- Itepekimab (IL-33 antibody):
  - **Two COPD phase 3 studies underway**
  - Clinical proof-of-concept in COPD with reductions in exacerbations in former smokers
  - Positive phase 2 results in asthma
- IL-33 genetics are used to identify other indications of interest

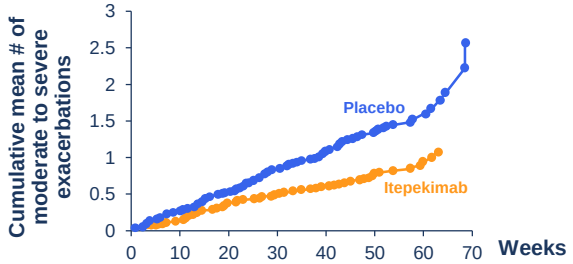
Itepekimab is developed in collaboration with Sanofi.
GOF, Gain of Function; LOF, Loss of Function;
POC, proof of concept; COPD, Chronic obstructive pulmonary disease

Il-33 Loss of Function Protects From COPD (~20% Decreased Risk) and Gain of Function Increases Risk (Up to ~10% Increased Risk)

Genotype	Cases (%)	Controls (%)	Odds Ratio (95% CI)	P-value
0 (reference)	4803	73879		
1	9140 (0.656)	138465 (0.652)	1.033 (0.995,1.072)	0.091
2	6344 (0.569)	92991 (0.557)	1.070 (1.028,1.113)	0.00098
3 or 4	2065 (0.301)	29730 (0.287)	1.090 (1.032,1.152)	0.0021
Trend	22352	335065		0.00015
LOF	149 (0.003)	3197 (0.005)	0.794 (0.676,0.933)	0.0049



Itepekimab COPD Phase 2: ~40% Exacerbation Reduction in Former Smokers



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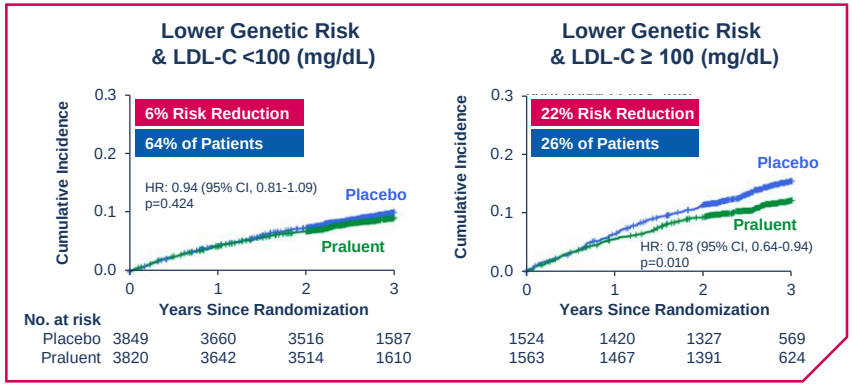
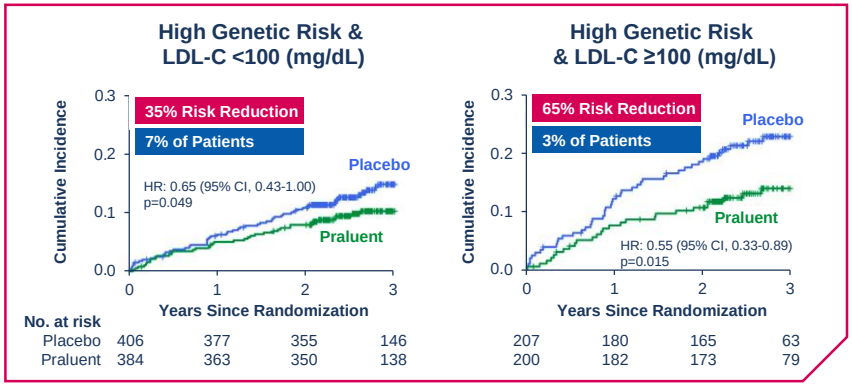
Genetics Guided Precision Medicine: Identify Patients Most Likely to Benefit

PCSK9 and High-Risk, High-Benefit Populations

- Praluent® reduced major adverse cardiovascular events by 15% in a large outcomes trial in post acute coronary syndrome patients
- Post-hoc analysis: patients with higher “composite genetic risk scores” (cGRS) and clinical risk factors had higher event rates and greater risk reduction with Praluent
  - Two-thirds had low genetic risk and low lipids and derived little treatment benefit
  - One-third had high genetic risk or high lipids and received greater treatment benefit
- Precision medicine approaches enable larger effect, smaller, and less expensive trials
  - Identify patient populations and indications with greatest patient benefit
  - Inform commercial efforts

Post-hoc Analysis Revealed That Patients With Higher cGRS and Clinical Risk Derive Greater Benefit From Praluent





Adapted from Damask et al. Circulation. 2019.

REGENERON

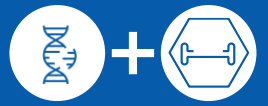
Novel Turnkey Therapeutic Approaches

The Future Is Now

INHIBITING GENES

- siRNA Gene Silencing
- Genome Editing: Knockout

RESTORING GENES

- Genome Editing: Insertion 
- Gene Therapy: Targeted Viral-based Gene Delivery and Expression 

Utilizing the target discovery engine by applying validated siRNA technology

- Rapid path to therapeutics for validated intracellular targets not suitable for antibodies
- Antibody-siRNA combinations for high target load
- Extending dosing intervals

Alnylam collaborates exclusively with Regeneron for CNS and Eye targets, as well as select liver targets

- Initial 5-year discovery period through Apr'24, with an option to extend

siRNA Gene Silencing

Alnylam Collaboration

20+ Targets in All Stages of Development and More Coming (CNS, Eye, Liver)

PHASE 3

- **C5**: siRNA cemdisiran + pozelimab combination Ph3 for myasthenia gravis to start 2H21
  - Differentiated combination approach for a large market

PHASE 2

- **C5**: cemdisiran + pozelimab combination; multiple Ph2s in PNH to start 2H21
  - Phase 3 initiation in 2022

PHASE 1

- ***HSD17B13***: ongoing for NASH
- **APP**: Planned (early onset Alzheimer's; cerebral amyloid angiopathy)

PRE IND

- 3-5 additional potential targets to advance to IND-enabling studies in next 12 months

Alnylam PHARMACEUTICALS REGENERON

Other Novel Turnkey Technologies

Christos Kyratsous, PhD
Vice President of Research,
Infectious Diseases and Viral Vector Technologies

REGENERON

Genome Editing – Knockout: TTR Collaboration With Intellia

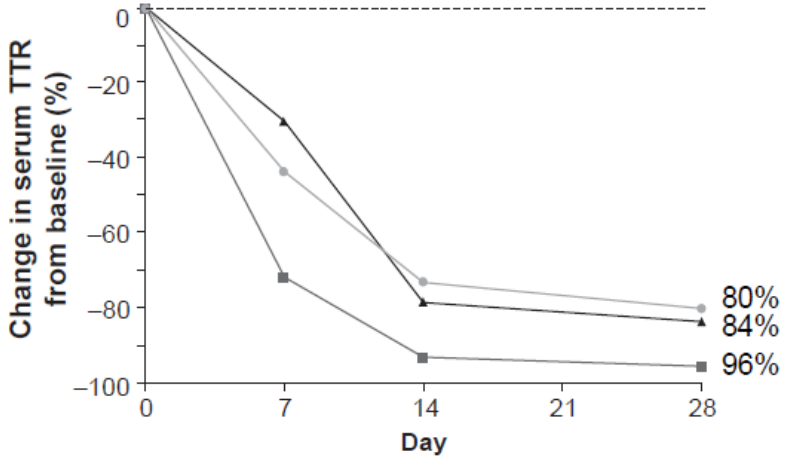
First Human Proof-of-Concept Achieved for First Systemic CRISPR-based Therapeutic

- First-in-human data validate our CRISPR-based TTR knockout approach
  - Single dose with NTLA-2001 led to dose-dependent reductions in serum TTR
  - Mean serum TTR reduction of 87% at 0.3 mg/kg dose, including one patient with 96% reduction
  - No serious adverse events observed in the first six patients by day 28

Proof-of-Concept With TTR Increases Probability of Success for Both Knockout and Insertion Programs

- REGN has exclusive rights to Intellia's CRISPR technology for therapies targeting the liver*
  - 20+ preclinical programs under evaluation
- REGN has license to commercialize up to 10 *ex vivo* CRISPR products in defined cell types

Landmark Clinical Data at Peripheral Nerve Society Meeting Showed Deep Reduction in Disease-Causing TTR Protein After Single Infusion of NTLA-2001



Change in serum TTR in individual patients at 0.3 mg/kg (n = 3)

*REGN has rights to develop up to 15 *in vivo* products; except certain named targets

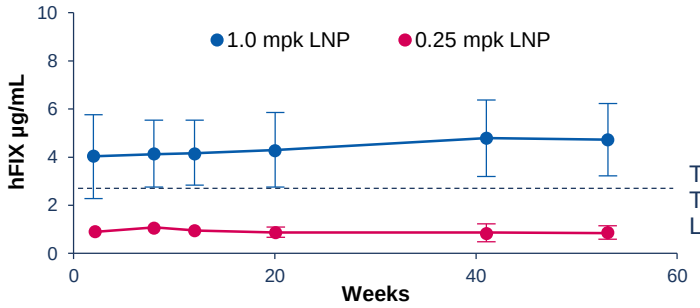
Genome Editing – Insertion

Factor 9 (F9): Collaboration with Intellia

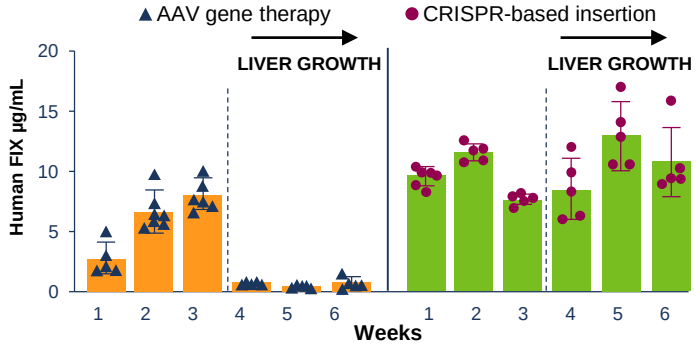
Technology collaboration with Intellia: co-development of the knock-in technology

- REGN leads F9 and F8 knock-in programs
- Key preclinical data so far:
  - Therapeutic F9 levels are stable through one year
  - F9 levels persist following liver growth and regeneration with REGN/NTLA insertion approach vs. traditional AAV-based gene therapy
- F9 insertion program for Hemophilia B is advancing toward IND-enabling studies
- Additional knock-in programs preclinical work ongoing

Durable F9 Levels Achieved for 1-Year in Mice (Similar Levels Achieved in Non-Human Primates)



F9 Levels Persist Following Liver Growth and Regeneration With REGN/NTLA Insertion Approach vs. Traditional AAV-based Gene Therapy



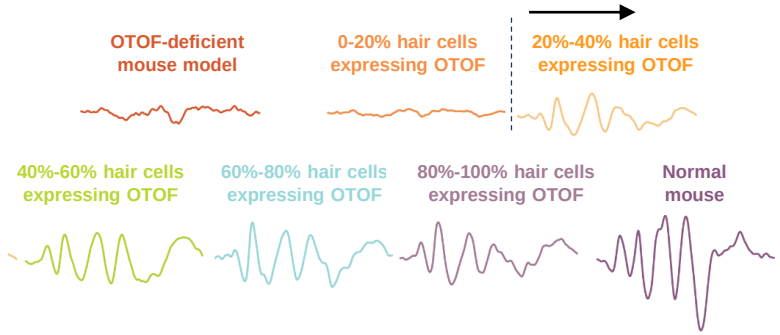
Adapted from Annual Meeting of the Oligonucleotide Therapeutics Society (OTS) 2020.

Gene Therapy: Targeted Viral-based Gene Delivery and Expression

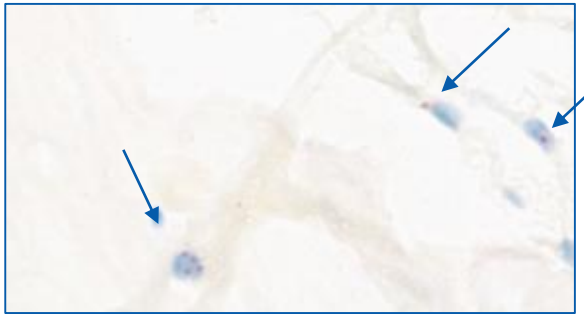
Otoferlin (OTOF): Collaboration with Decibel

- Genetic absence of OTOF in the hair cells of the inner ear causes profound hearing loss
  - Est. ~20,000 patients in US and EU5
  - Patient diagnosis expected to increase due to recent adoption of genetic testing at birth
- AAV-based gene therapy for OTOF is appropriate for non-dividing hair cells
- Viral-based gene delivery of OTOF restores hearing in mouse model:
  - >20% of inner hair cells expressing OTOF required to restore hearing
  - Hearing rescue durable out to at least 6 mo
- Non-Human Primates:
  - Full-length OTOF successfully expressed
- Clinical trial initiation in 2022

>20% Expression Required for Hearing Rescue in Mouse Model



Virally-Delivered Human OTOF Detected (*red dots*) in Nuclei (*blue*) of Hair Cells of Primate Ear



Adapted from presentation at Association for Research in Otolaryngology (ARO) 2021.

Decibel THERAPEUTICS REGENERON

Conclusion

George D. Yancopoulos, MD, PhD
Co-Founder, President & Chief Scientific Officer

Regeneron is investing in and delivering technologies well beyond antibodies

- **3** genetics medicines programs in the clinic
- **3-5** additional potential targets to advance to IND-enabling studies in next 12 months
- **30+** additional programs in research and candidate selection phase
- **10+** novel genetic targets discovered

Several near-term opportunities emerging from Regeneron Genetics Medicines:

- Reported landmark TTR genome editing data in Jun'21
- C5 combo program Ph3 start (Myasthenia Gravis in 2H21, PNH in 2022)
- HSD17B13 siRNA healthy volunteer data readout in 2H21
- APP siRNA Ph1 start for Alzheimer's
- DB-OTO gene therapy (hearing loss) Ph1/2 start in 2022

Regeneron Genetics Medicines

Building the Pipeline for the Future

Pre-IND

FACTOR 8 GENE INSERTION[2]
CRISPR/Cas9 + AAV Transgene Insertion
- Hemophilia A

PNPLA3[1]
PNPLA3 siRNA
- Nonalcoholic Steatohepatitis

DB-OTO[3]
OTOF AAV Dual Vector Gene Therapy
- *OTOF* Related Hearing Loss

FACTOR 9 GENE INSERTION[2]
CRISPR/Cas9 + AAV Transgene Insertion
- Hemophilia B

ALN-APP[1]
APP siRNA
- Alzheimer's Disease

Clinical Development

POZELIMAB + CEMDISIRAN[1]
C5 Antibody + C5 siRNA
- Myasthenia Gravis
- Paroxysmal Nocturnal Hemoglobinuria

CEMDISIRAN[1]
C5 siRNA
- Immunoglobulin A Nephropathy

ALN-HSD[1]
HSD17B13 siRNA
- Nonalcoholic Steatohepatitis

NTLA-2001[2]
CRISPR/Cas9
- Hereditary Transthyretin Amyloidosis with Polyneuropathy

ADDITIONAL PROGRAMS
30+ Programs in Research and Candidate Selection

1. Alnylam Pharmaceuticals
2. Intellia Therapeutics
3. Decibel Therapeutics

This graphic displays pipeline drug candidates currently undergoing clinical testing in a variety of diseases. The safety and efficacy of these drug candidates have not been fully evaluated by any regulatory authorities for the indications described in this section.

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