Jefferies Healthcare Conference
November 15, 2018

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Safe Harbor Statement

This presentation contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. These statements are based upon our current expectations and speak only as of the date hereof. Our actual results may differ materially and adversely from those expressed in any forward-looking statements as a result of various factors and uncertainties, including, without limitation, our developmental stage and limited operating history, our ability to successfully and timely develop products, enter into collaborations and achieve other projected milestones, rapid technological change in our markets, demand for our future products, legislative, regulatory and competitive developments and general economic conditions. Our Annual Report on Form 10-K, recent and forthcoming Quarterly Reports on Form 10-Q, recent Current Reports on Forms 8-K, and other SEC filings discuss some of the important risk factors that may affect our ability to achieve the anticipated results, as well as our business, results of operations and financial condition. Readers are cautioned not to place undue reliance on these forward-looking statements. Additionally, Arrowhead disclaims any intent to update these forward-looking statements to reflect subsequent developments.

ARWR Profile

Our mission is to treat intractable medical conditions by silencing the genes that cause them using RNAi

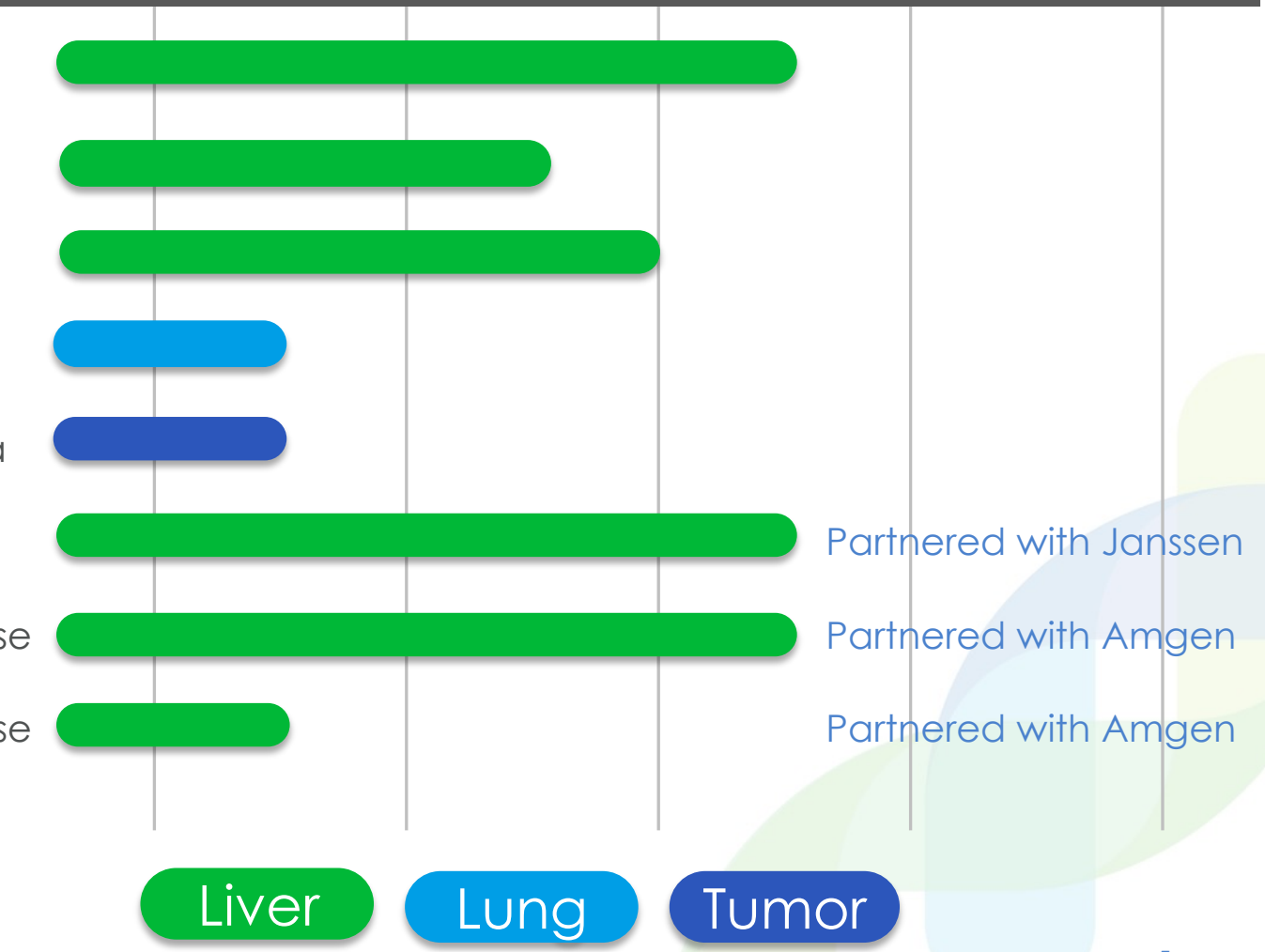
- **Flexible TRiM™ platform**
  - Ability to silence genes across diverse tissue types
- **Broad pipeline**
  - 5 clinical programs built on TRiM™ in 2018
- **Financial resources to push programs to commercialization**
  - Funding via partnerships
  - Access to additional capital as milestones are achieved

Financial Highlights

ARWR - NASDAQ Global Select	
Stock Price (13 Nov, 2018)	$12.47
Common Shares Outstanding	~91.2m
Market Capitalization (13 Nov, 2018)	~$1.14bn
Cash (10Q 6/30/18)	~$78m
Additional Capital Since 10Q	$10m milestone payment from Amgen $250m from Janssen partnership

Pipeline

Competitive Position	Drug	Disease	
First RNAi	ARO-AAT	Alpha-1 Liver Disease	
First RNAi	ARO-APOC3	Hypertriglyceridemia	
First RNAi	ARO-ANG3	Dyslipidemia	
First RNAi	ARO-ENaC	Cystic Fibrosis	
First RNAi	ARO-HIF2	Renal Cell Carcinoma	
Leading RNAi	ARO-HBV	Hepatitis B	Partnered with Janssen
First RNAi	AMG 890	Cardiovascular Disease	Partnered with Amgen
Undisclosed Target	ARO-AMG1	Cardiovascular Disease	Partnered with Amgen



Targeted RNAi Molecules
TRiM™ Platform

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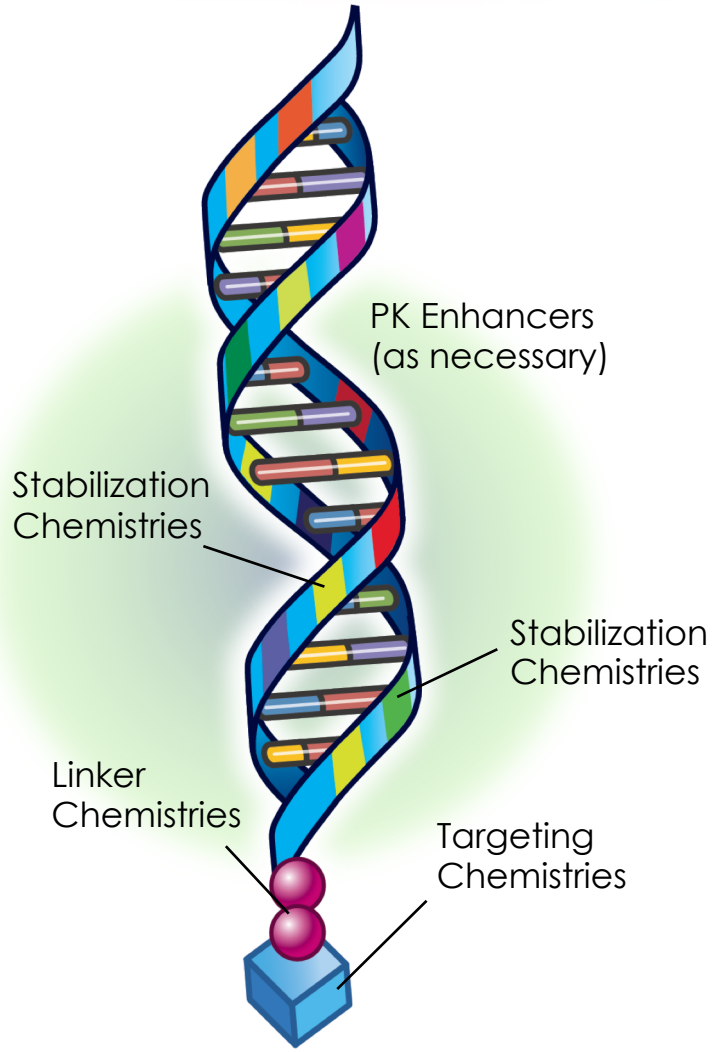
Targeted RNAi Molecules - TRiM™ Platform Simplicity, Specificity, and Activity



- Targeting ligands
  - Targeting has always been a core philosophy
- Linker chemistries
- Proprietary RNAi trigger selection technologies
  - Designed to maximize activity and innate stability
- Stabilization chemistries
- pk enhancers as necessary

Deep KD in diverse tissues using subQ, iv, and inhaled administration routes

Chronic Hepatitis B Virus Infection
ARO-HBV

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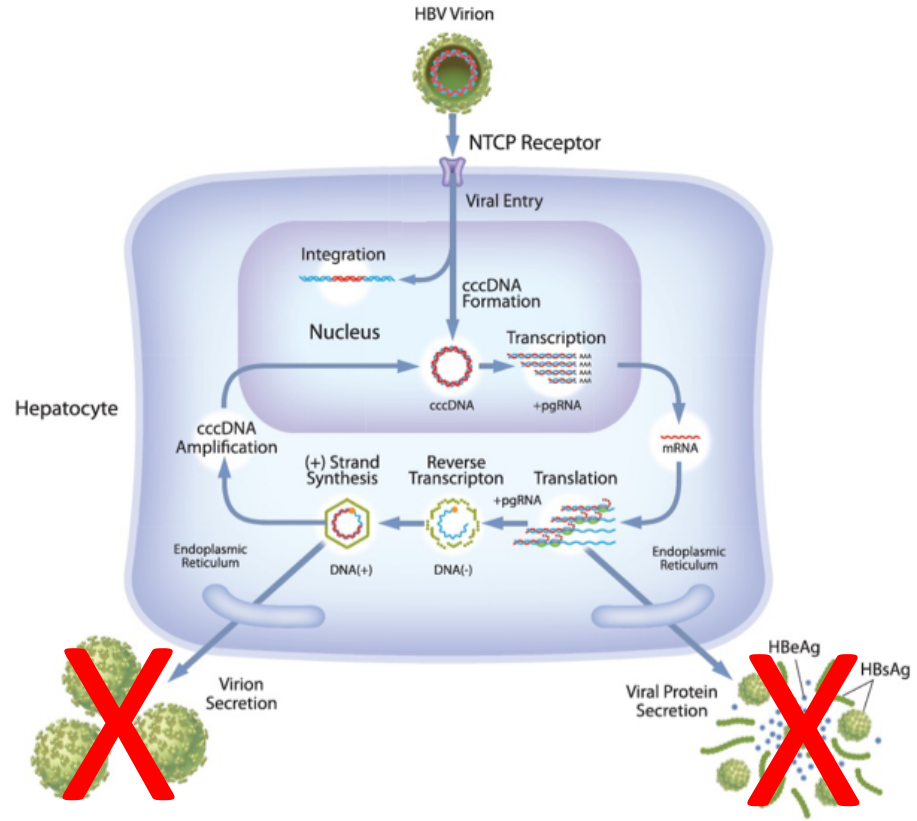
ARO-HBV and the HBV Life Cycle



- Contagion
- Reinfection

- Immune suppression

Designed to silence the entire transcriptome

- Everything from cccDNA
- HBsAg from integrated DNA

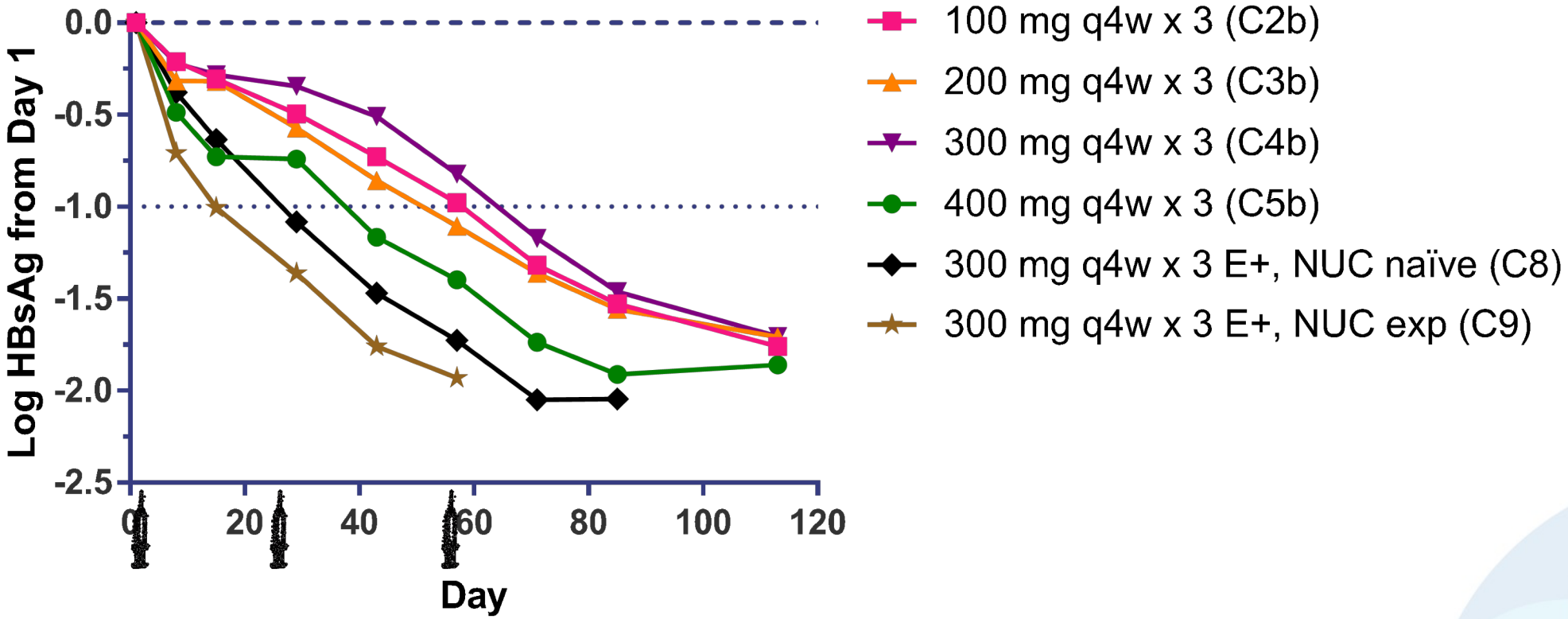
Achieve functional cure after finite therapy by:

- Silencing immunosuppressive proteins
- Disrupting HBV life cycle
- Enabling natural immune control

ARC-520 data suggest that immune recovery and control in humans is possible

Monthly (or less frequent) SQ dosing expected

Mean log HBsAg Change in P1/2



NADIR HBsAg responses for patients with > 6 weeks of HBsAg data

- > 1 log (90%) reduction 100%
- > 1.5 log (97%) reduction 83%
- > 2 log (99%) reduction 38%
- > 3 log (99.9%) reduction 3%

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CHB patient AE Table

24 patients in cohort 2b-5b, 8 and 9 have received 3 monthly doses (400mg highest dose administered)

AEs in HBV Patients	Cohort 2b 100 mg	Cohort 3b 200 mg	Cohort 4b 300 mg	Cohort 5b 400 mg	Cohort 8 300 mg	Cohort 9 300 mg	Total AEs n=24
AE Reported Terms	AROHBV n = 4	AROHBV n = 4	AROHBV n = 4	AROHBV n = 4	AROHBV n = 4	AROHBV n= 4	
Insect bites	1		1				2
Upper respiratory infection, sore throat	1		1		1		3
Erythema, redness, hematoma, rash at injection site			1	2	2	2	7
Acne					2		2
Headache			2				2
Raised creatine kinase			1		1		2
Diarrhea			1	1			2
Lower back ache/pain			1		1		2
Total AEs in >1 CHB	2	0	8	3	7	2	22

- No SAEs reported, no dropouts
- No dose related pattern of adverse changes in laboratory values (e.g. ALT, AST, total bilirubin, creatinine)
- AEs at injection site (rash, erythema, bruising/hematoma, tenderness) reported with approximately 12% of injections, all of which were mild

Alpha-1 Antitrypsin Deficiency
ARO-AAT

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ARO-AAT

ARO-AAT

- For liver disease associated with alpha-1 antitrypsin deficiency
- Alpha-1 Foundation estimates >100k people with the ZZ AAT gene mutation in US
- Restart of clinical program that used prior DPC platform

Initial data released June 29, 2018
Additional data released at AASLD in November 2018

Alpha-1 Antitrypsin Deficiency

Mutation in AAT gene (Z-AAT) leads to mis-folding of the protein and poor export from hepatocytes: low levels in circulation and accumulation in liver

Pathophysiology

Lung

Tissues susceptible to damage by neutrophil proteases: COPD

↓

Treated with AAT enzyme replacement therapy today

Liver

Accumulation of mutant Z protein causes clinical liver disease

↓

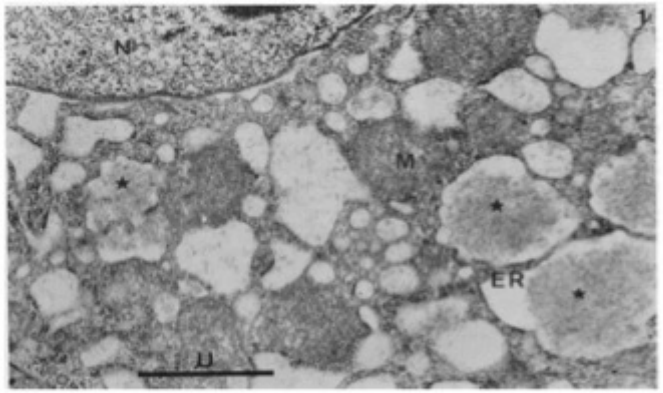
No current treatment

ARO-AAT Mechanism of Action

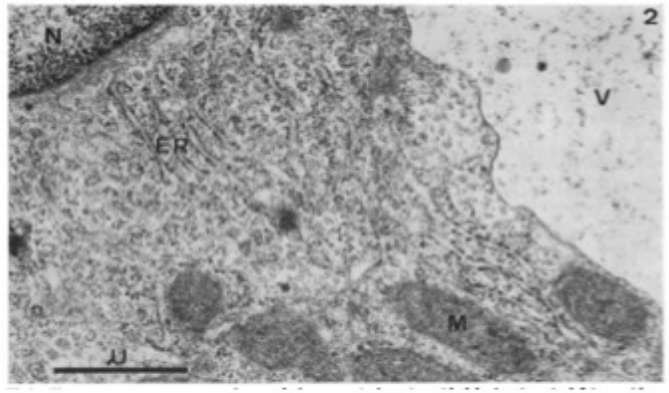
ARO-AAT designed to stop Z-AAT production by silencing AAT gene to:

- Prevent liver accumulation
- Allow clearance of accumulated protein
- Prevent cycles of cellular damage
- Prevent/Reverse progression of liver fibrosis

PiZZ phenotype (diseased)



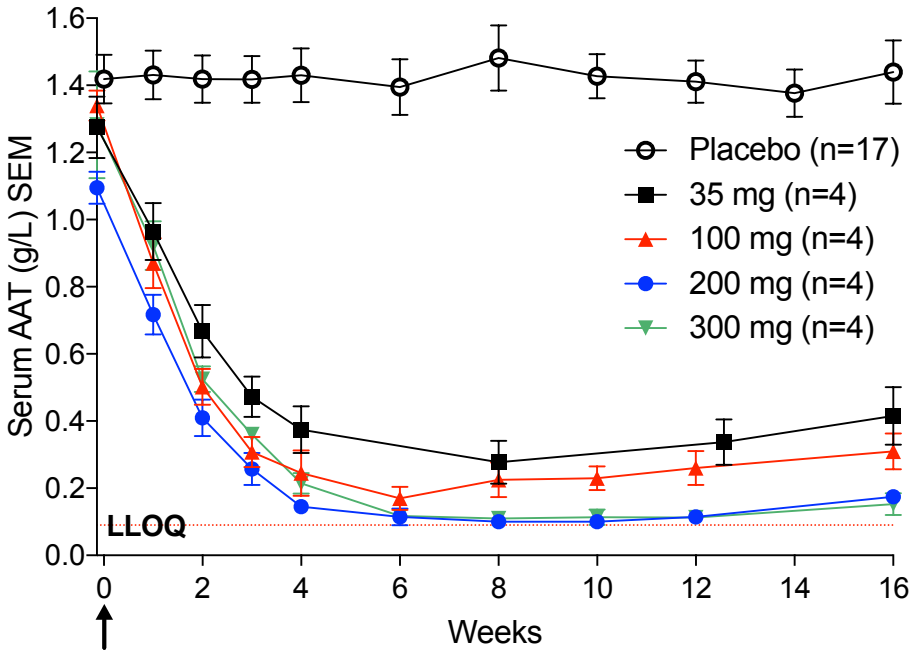
Pi null phenotype (normal)



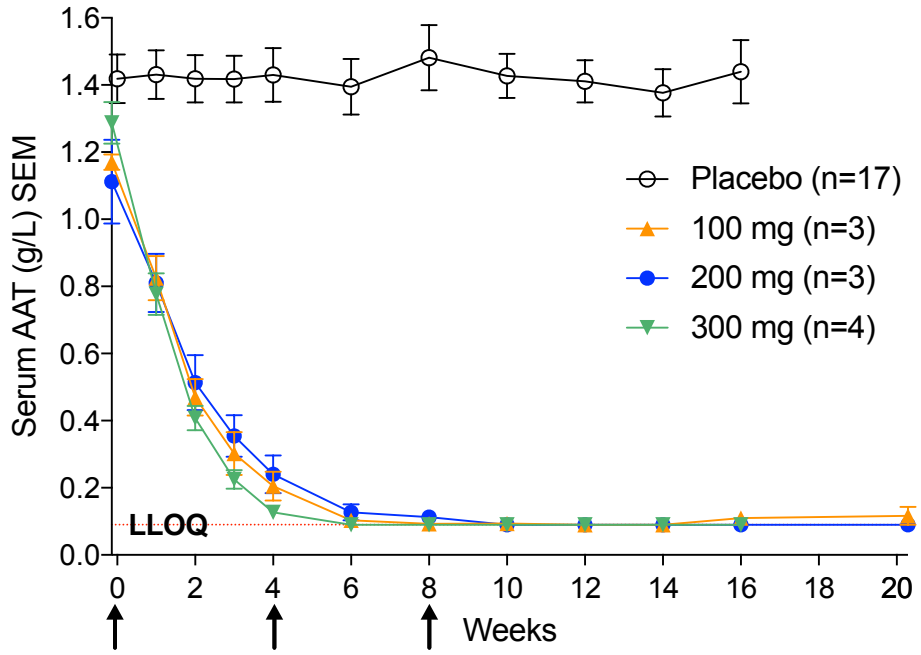
Feldmann G et al., *Gut* 1975

ARO-AAT P1

Single dose ARO-AAT



Multiple dose ARO-AAT



Supports quarterly or less frequent dosing

AROAAT Safety Summary

AE Terms	SD 35 mg n = 4	MD 100 mg n = 4	SD 100 mg n = 4	MD 200 mg n = 4	SD 200 mg n = 4	MD 300 mg n = 4	SD 300 mg n = 4	Placebo n = 17 (#/%)	ARO-AAT n = 28 (#/%)
Upper respiratory tract infection		2	1	1	1	2	4	4/24%	11/39%
Headache	2	1		2	1	1	2	2/12%	9/32%
Sore throat/throat irritation/dry throat	1	1	2		1	1		5/29%	6/21%
Rhinorrhea		1	2	1			1	3/18%	5/18%
Nausea, Dyspepsia	1			2		1	2	1/6%	6/21%
Pain/phlebitis at cannula site	2		2			1		2/12%	5/18%
AE at injection site (e.g. pain, bruising, erythema)			2	1	1	1	1	0/0%	6/21%
Cough			1			1	1	3/18%	3/11%
Abdominal Pain			1	2			2	1/6%	5/18%
Back or neck pain		2				1		2/12%	3/11%
Venipuncture bruise or tenderness		1			2			2/12%	3/11%
Sinus/nasal congestion, sinusitis							1	3/18%	1/4%
Emesis		1	1	1				1/6%	3/11%
Lightheadedness, Dizziness	1			1			1	1/6%	3/11%
Insect bites	2							1/6%	2/7%
Ankle pain, injury	1		1					0/0%	2/7%
Musculosketetal chest pain			1					1/6%	1/4%
Laceration/Abrasion								2/12%	0/0%
Nose bleed, Blood stained nasal mucous		1		1				0/0%	2/7%
Cold sores, Scattered mouth blisters		1	1					0/0%	2/7%
Gastroenteritis								2/12%	0/0%
Feeling Feverish								2/12%	0/0%
Total AEs occurring in >1 subject	10	11	15	12	6	9	15	38	78

- No AEs that increased in frequency or severity with dose
- No AEs rated as serious, or severe
- Most AEs were graded as mild
- Most frequent AEs in subjects receiving ARO-AAT were upper respiratory tract infection (39%) and headache (32%)
- Fifty doses of ARO-AAT were administered with 6 (12%) resulting in an AE at the injection site

Cardiometabolic Diseases
AMG 890, ARO-AMG1, ARO-APOC3, ARO-ANG3

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Amgen Collaboration – AMG 890 and ARO-AMG1

- Cardiovascular collaboration for two RNAi therapeutics
- Amgen received:
  1. Exclusive license to ARO-LPA (now called AMG-890)
  2. Option for an additional candidate against an undisclosed target
- Total deal value of up to $673.5 million
- Arrowhead received $56.5 million upfront
  - $35 million in upfront payments, $21.5 million equity investment
- Up to low double digit royalties for ARO-LPA and single digit royalties for the undisclosed target
- Amgen is wholly responsible for funding and conducting clinical development and commercialization

Building Cardiometabolic Pipeline with TRiM™

ARO-ANG3

- Targeting angiopoietin-like protein 3 (ANGPTL3) for treatment of hypertriglyceridemia
- NASH target
- >90% KD observed in rodent models
- SubQ administration

CTA filed October 2018

ARO-APOC3

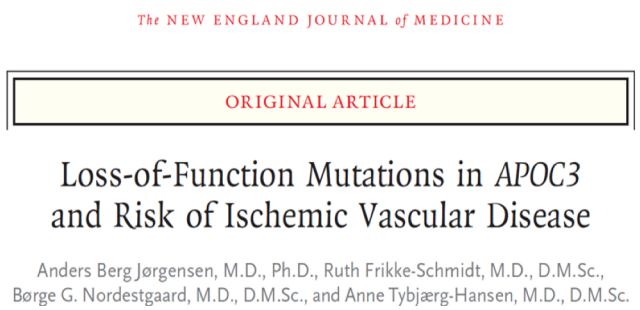
- Targeting Apolipoprotein C-III (apoC-III) for treatment of hypertriglyceridemia
- Up to 90% KD observed in rodent models (intestines also a source of production)
- SubQ administration

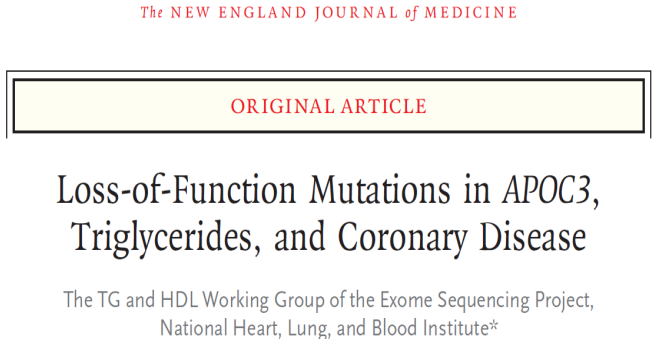
CTA Planned Q4 2018

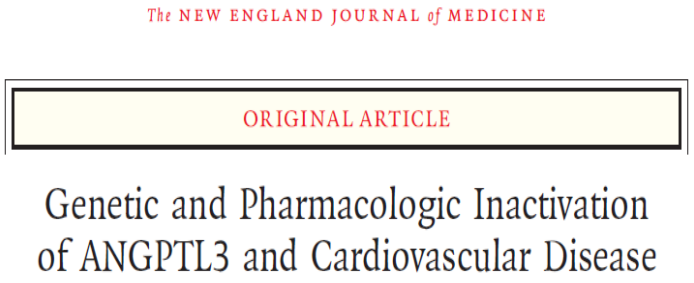
Triglycerides: a Validated Target

Plasma triglyceride levels are an independent risk factor for cardiovascular disease (Rosenson, ACC, 2014)

- Genetic studies support causal relationship
- Independent of LDL-C or HDL-C







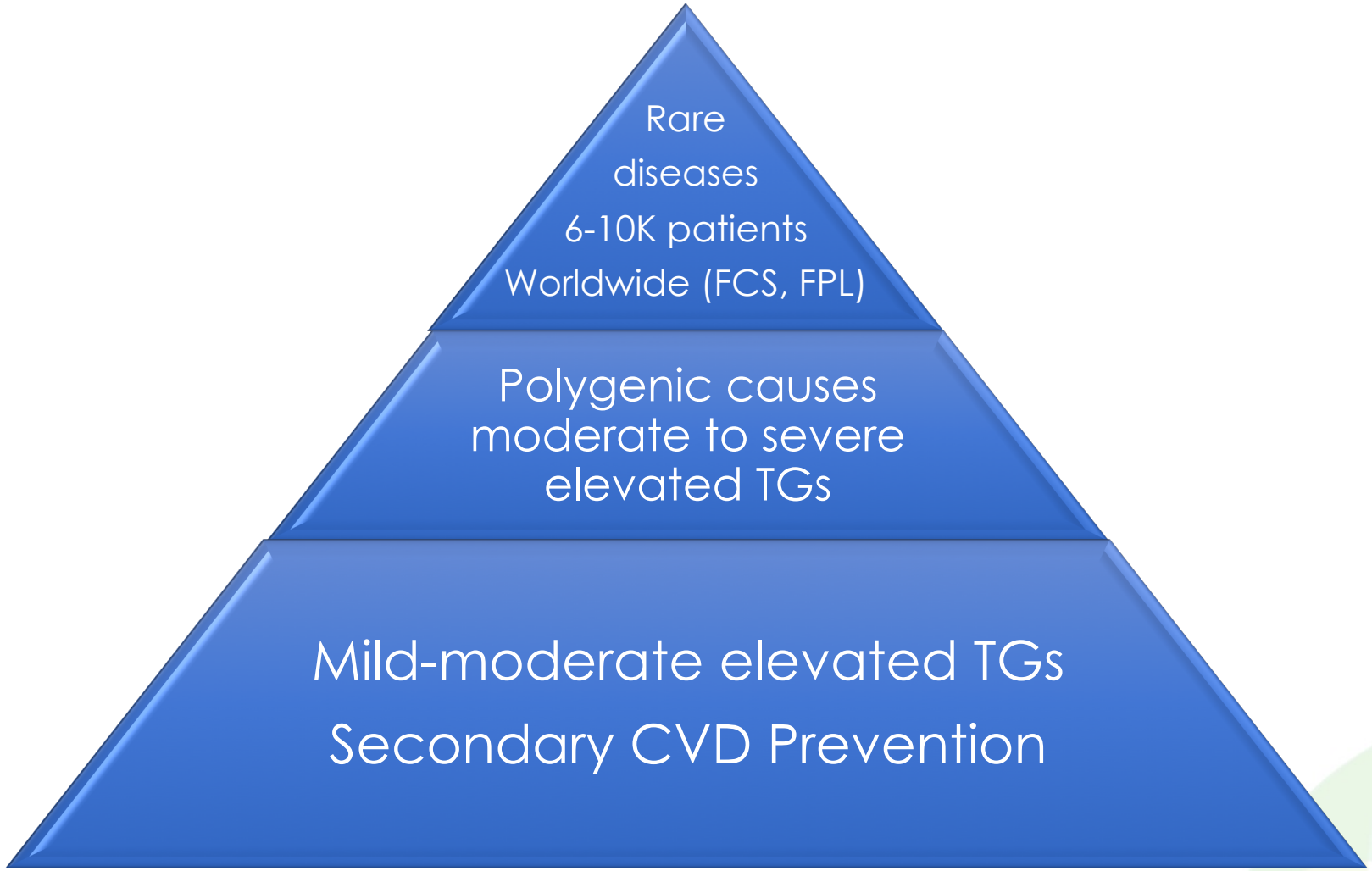
APOC3, ANGPTL3 Genetic Validation and Clinical Data

Mean or Median changes in lipid parameters after therapy and in heterozygotes and homozygotes for *APOC3 and ANGPTL3* LOF mutations versus non-carriers

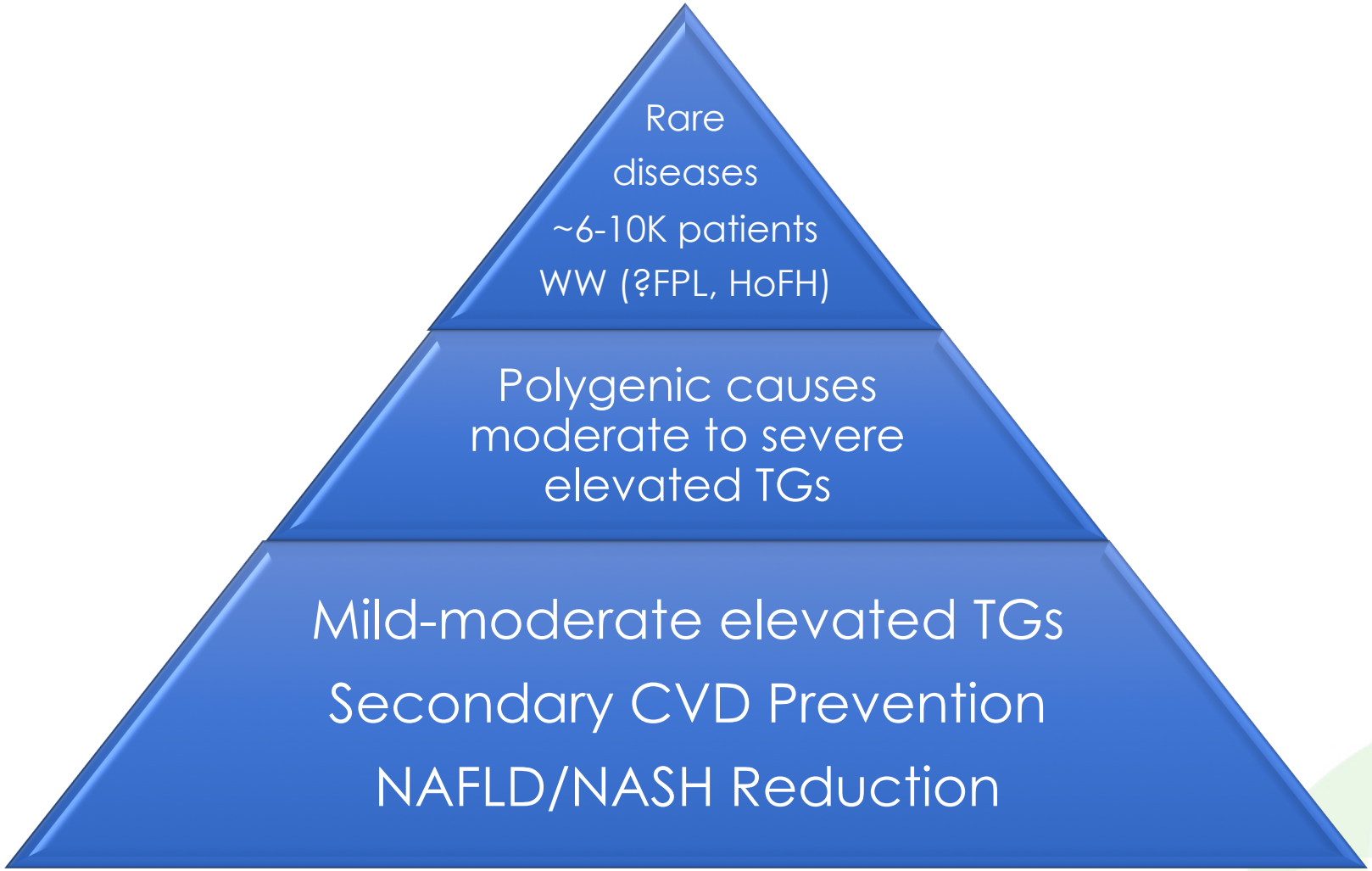
Metric (serum level)	*APOC3* deficient heterozygote[1]	*APOC3* deficient homozygote[2]	*APOC3* ASO inhibition[3]	*ANGPTL3* deficient heterozygote[4]	*ANGPTL3* deficient homozygote[4]	*ANGPTL3* ASO inhibition[6]	ANGPTL3 Mab Inhibition[7] 25 mg/kg IV
ApoC-III	-46%	-88.9%	-77.5%	NA	NA	-58.8%	NA
ANGPTL3	NA	NA	NA	-40% to -87%	undetectable	-84.5%	NA
Triglycerides	-39%	-59.6%	-43.8%	-21.1%	-71.2%	-50.4%	-76% i.v. (median)
LDL-C	-16%	Similar to non-carrier	-3.9%	-8.6%	-67.2%	-32.9%	-25%
HDL-C	+22%	+26.9%	+8.0%	-16.8%	-39.0%	-26.9%	-25%
CAD risk	-40%	Not reported	NA	-41%[5]	NA	NA	NA
Adverse Phenotype/AEs	None described	None described	**Thrombocytopenia, ISRs, renal**	None described	None described	None described	**Elevated ALT (11% in active v 0% PBO)**

1. Triglyceride working group, NEJM 2014
2. Saleheen et al., Nature 2016
3. Graham et al., Circulation Research 2013. [Phase 1 MAD study, 400 mg dosed D1, D3, D5, D8, D15 and D22 with non-GalNac targeted ASO. Median % change 1-week after last dose in NHV population compared to baseline]
4. Minicocci et al., J of Lipid Research 2013
5. Dewey et al, NEJM 2017
6. Graham et al., NEJM 2017 [Six weekly 60 mg doses using GalNac conjugate ASO in NHV population, mean values 1 week after last dose versus baseline]
7. Dewey FE, Gusarova V, Dunbar RL, et al. Genetic and pharmacologic inactivation of ANGPTL3 and cardiovascular disease. N Engl J Med 2017;377:211-21. [approximate mean nadir reduction at highest IV dose]

Clinical Indications for APOC3: Tiered by Size and Regulatory Complexity



Clinical Indications for ANG3: Tiered by Size and Regulatory Complexity



Extra-hepatic Progams
ARO-ENaC, ARO-HIF2

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Targeting New Tissues Using TRiM™ Platform

ARO-ENaC

- Targeting the epithelial sodium channel (ENaC) alpha subunit for treatment of cystic fibrosis
- Inhaled administration targeting pulmonary epithelium
- Large animal studies and disease models underway

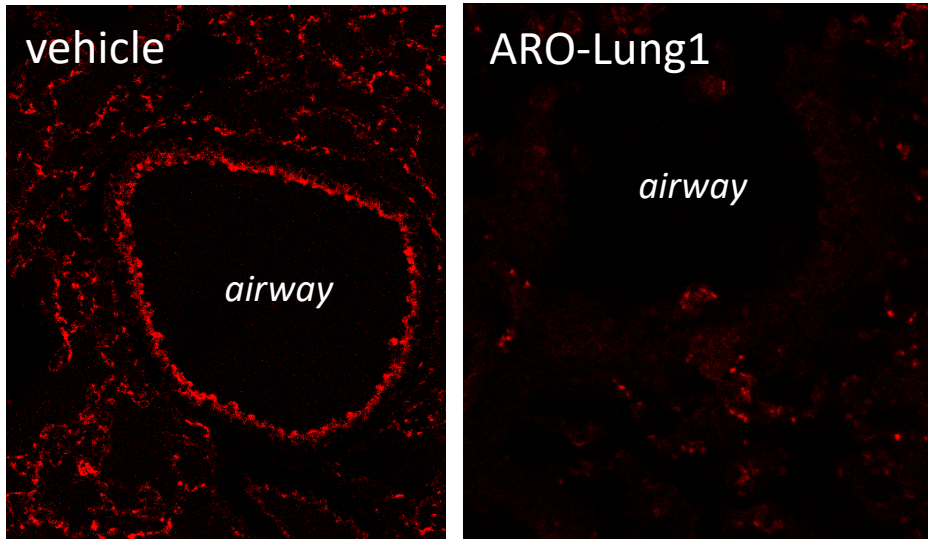
CTA Planned 2019

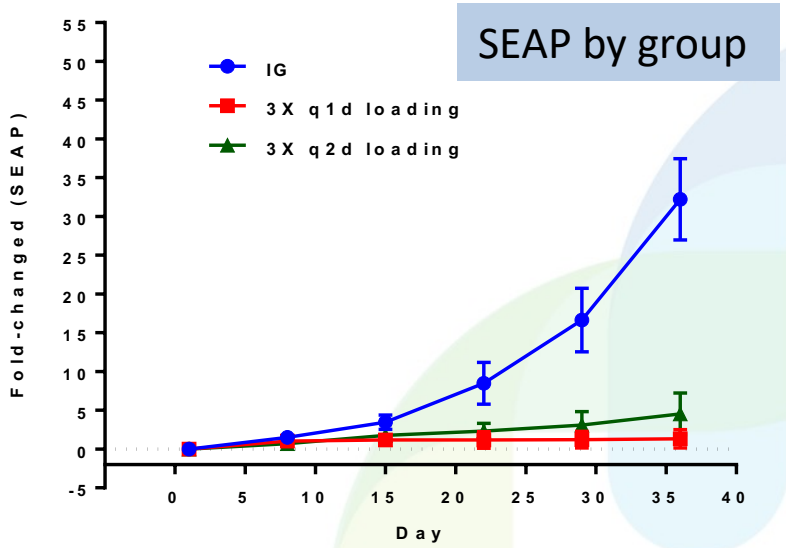
ARO-HIF2

- Targeting HIF2 alpha for treatment of clear cell renal cell carcinoma
- Up to 85% KD observed in rodent tumor model
- IV and subQ administration targeting solid tumors

CTA Planned 2019

Red: lung target protein expression by IHC





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Exciting, but how will we pay for all of this?

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Janssen Partnership

Development and Commercialization Partnership for HBV and 3 New Targets

- **Deal value up to $3.7bn**
  - $250m up front
    - $175m cash + $75m equity at $23/share
  - $1.6bn in potential milestone payments for HBV, including $50m after P2 initiation
  - $1.9bn in potential milestone payments for the 3 new targets
    - Targets will be novel: not from our pipeline
    - Hepatocytes and non-hepatocytes possible
  - Tiered royalties to mid teens

Validation

The right partner

Capital: transformational opportunities

Janssen as a Partner

We view Janssen as an ideal partner for HBV

- Demonstrated clear commitment to HBV: most committed in pharma?
- Substantial resources with global reach
- Well positioned to take on the biology risk associated with addressing chronic HBV
  - Large, well-funded virology group
  - Multiple agents/mechanisms in-house
- Experience in complex global trials
  - Many cohorts will be required: HBV genotypes, different therapy combinations, different dosing schedules
- Well positioned for global launch

Capital Infusion: Transformational

Balance sheet and access to additional capital transforms our business

- Cash at last 10Q + Amgen payment: ~$90m
- $250m at close + $50m after ARO-HBV Phase 2 initiated = $300m of near-term capital
- **Together $390m: represents 6-8 years of operations at current burn**

- Will our burn increase over time? Yes, but:
  - **~$4bn of additional potential milestone payments between Janssen and Amgen**

Enables us to create value as *Pharmaceutical* company rather than small biotech company

Arrowhead as a Commercial Enterprise

Arrowhead can now create value by retaining most of its pipeline and commercializing its drugs

Effectively traded clinical and commercial control of HBV and 3 novel targets (while retaining substantial upside exposure) for the ability to commercialize our own drugs

- Plans for ARO-AAT to initiate a Phase 2/3 study in Q1 2019
  - Pre-IND meeting with the FDA this month
  - Expectations for biopsies pre- and post-treatment
    - Decrease in monomer, polymer, and globules
    - Possible decrease in fibrosis
- 4 additional programs (now) targeting 3 different cell types

Looking to 2019

2019 will be productive

- **Expect 2 new CTAs**
  - ARO-HIF2
  - ARO-ENaC
- **Expect to be in Phase 2 or later with 3 wholly-owned candidates**
  - ARO-AAT, ARO-ANG3, ARO-APOC3
- **Expect progress with partnered clinical candidates**
  - ARO-HBV, AMG 890
- **Wildcards**
  - New Janssen targets
  - Amgen undisclosed CV target
  - Muscle targeting
  - ARWR breakthroughs

Beyond 2019

Innovation and speed will continue to define us

- We expect 2 - 3 new CTAs ***every*** year
- We expect to be able to target a new cell type every ~18 months
- We expect 10 TRiM™ enabled clinical programs by the end of 2020
- Just need to execute: look to the past year for our ability to execute