Aavogen

Precision Muscle Gene Therapeutics Across High-Value Rare & Broad Indications

AVGN7 (rAAVMYO2:CK8e-hSmad7)

Multi-Indication Platform Asset

- **Lead Rare Indication**: sporadic inclusion body myositis (IBM)
- **Cardiovascular Expansion:** heart failure with reduced ejection fraction (HFrEF)

AVGND (rAAVMYO2:CK8e-μDysH3)

Duchenne muscular dystrophy (DMD)

- **Targeted Gene Replacement**: restores functional dystrophin, prevents degeneration
- **Combinatorial Synergism**: AVGND + AVGN7 reverses historical necrosis & fibrosis, rebuilds strength

Strategic Investment Highlights

- **Robust IP Moat**: 6 granted patents | 1 pending
- **Significant Market Potential (5 years)**: $12.6B aggregate | IBM ($4.6B) | DMD ($4.8B) | HFrEF ($3.2B)

AVGN7 Platform

Scalable Pipeline Across Rare & Cardiovascular Diseases

Inclusion Body Myositis (IBM) | lead orphan indication

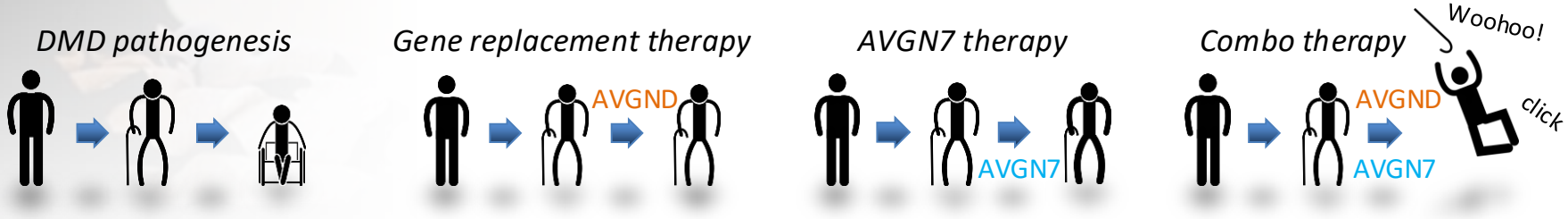
- **Mechanism**: blocks catabolic signaling
- **Clinical value**: halts wasting, restores motor function

Heart Failure with Reduced Ejection Fraction (HFrEF)

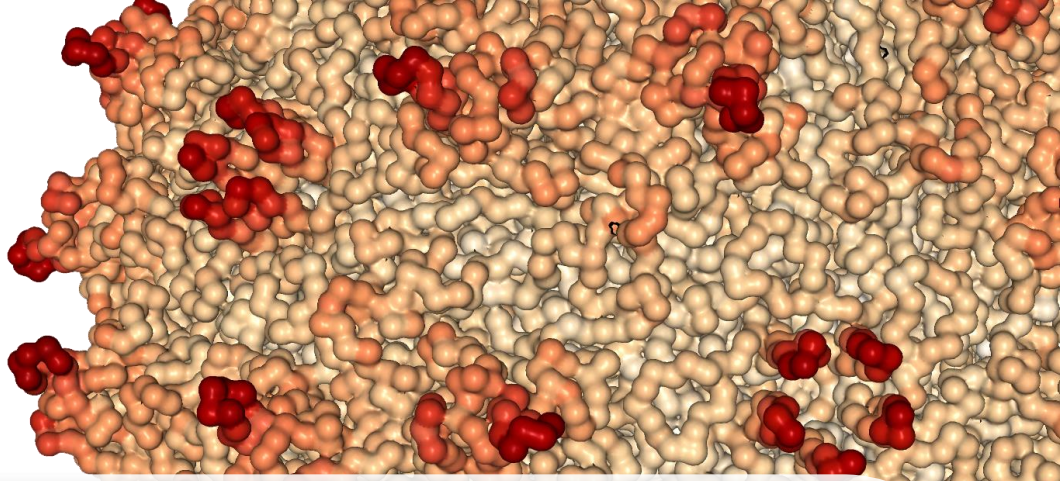
- **Mechanism**: reverses ventricular remodeling
- **Clinical value**: restores cardiac function

Duchenne Muscular Dystrophy (DMD)

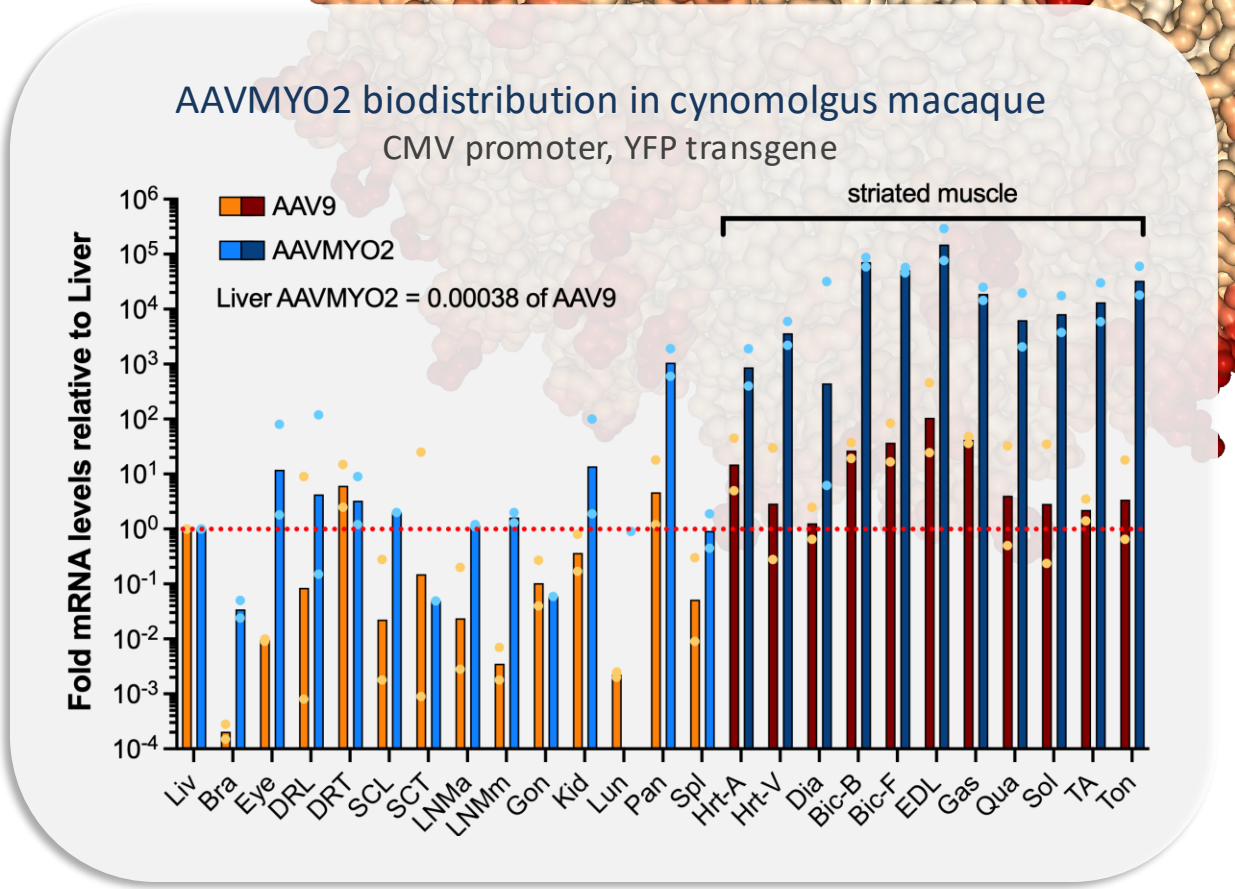
- **Mechanism**: AVGND+AVGN7 combination pipeline
- **Clinical value**: overcomes dystrophin-targeting limits



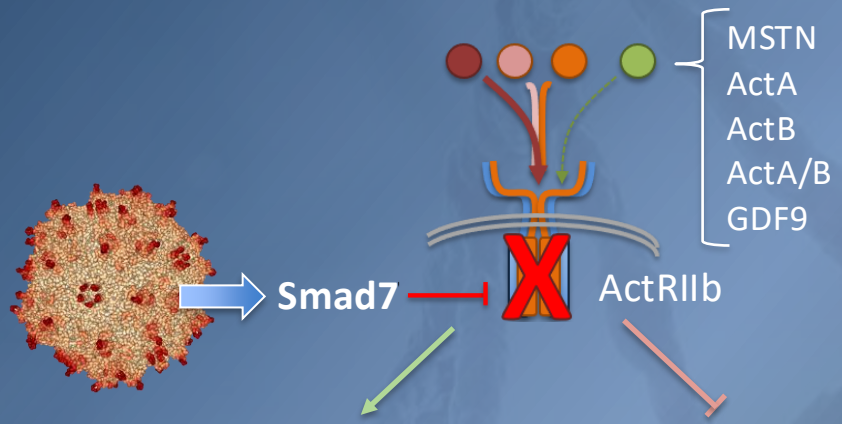
Engineered for superior safety & efficacy



- Liver de-targeted AAVMYO2 capsid avoids immune detection & pathologies
- Muscle-specific CK8e promoter prevents expression in non-muscle tissues and is clinically validated
- Combinatorial therapy is enabled by low dose requirements
- Lower manufacturing burden reduces cost of goods, provides flexible pricing

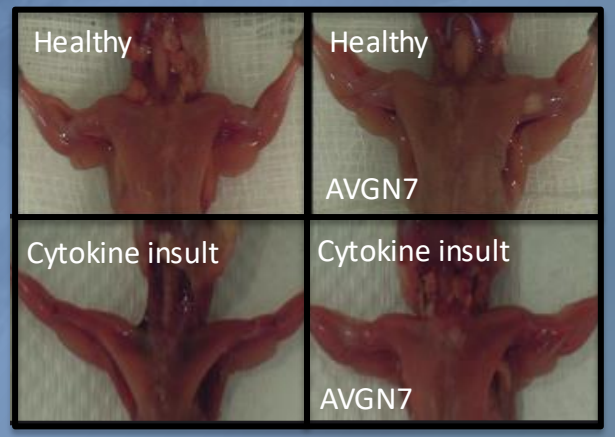


AVGN7 inhibits the inhibitors



- Protein degradation
- Muscle wasting
- Fibrosis

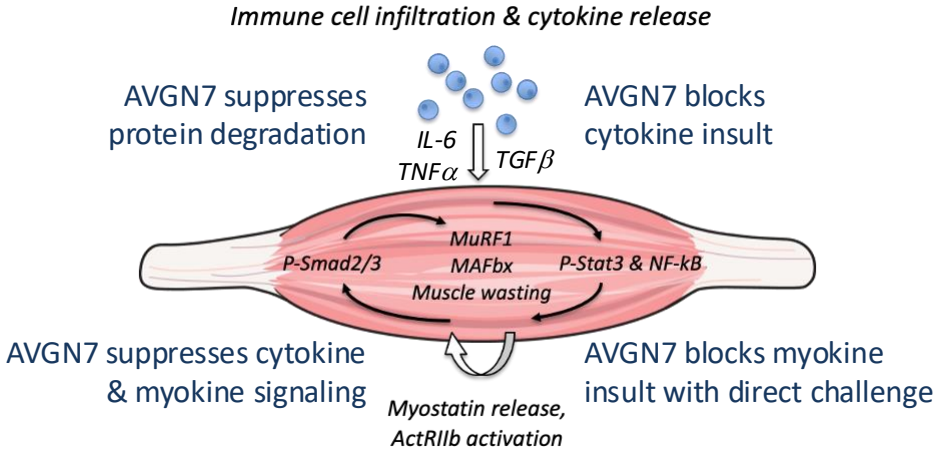
- **Protein synthesis**
- **Muscle growth**



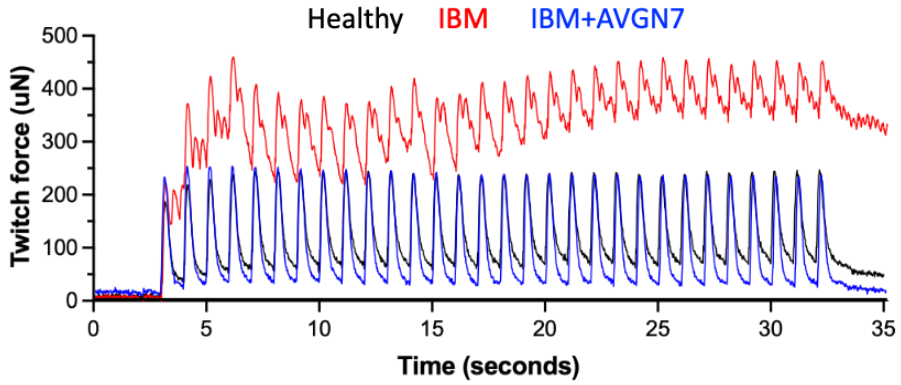
C-26 model of IL-6/TNFα-driven atrophy

AVGN7 restores IBM muscle

Prevents cytokine-induced muscle atrophy



Restores IBM muscle contractility



AVGN7 in HFrEF models

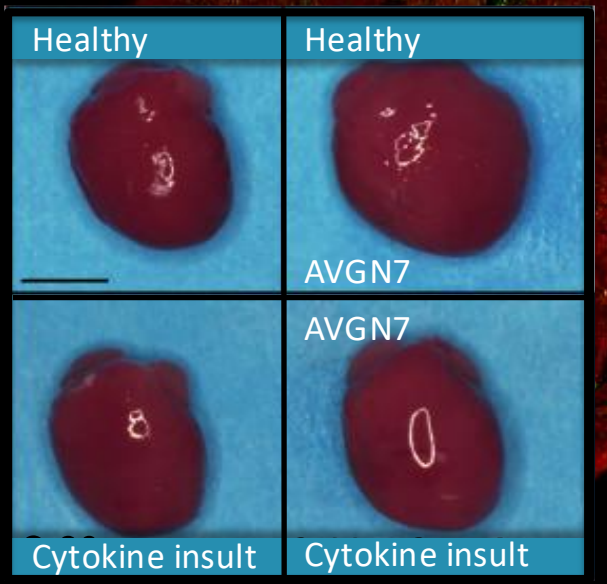
HFrEF is induced by ActRII signaling

- ActRII ligands (MSTN, GDF11, ActA, etc.) stimulate cardiac atrophy
- Circulating ligands are elevated in HFrEF

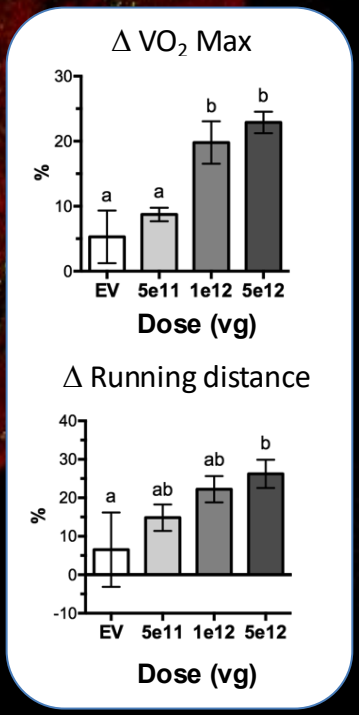
Attenuating ActRII in the heart

- Enhances excitation-contraction coupling
- Enhances cardiac function in stress tests
- Enhances cellular contractility
- Increases progenitor cell pool
- Increases calcium stores
- **Restores cardiac function in different animal models of HFrEF and HFpEF**

AVGN7 induces ***physiological*** cardiac hypertrophy – the "good kind"



C-26 model of IL-6/TNFα-driven atrophy



Synergistic Combination Strategy for DMD

Micro-dystrophin gene therapy

Rodgers et al. *Mol Ther Methods Clin Dev* 2019

Dystrophin 427 kDa

AVGND 137 kDa

δH2-R23+H3/δCT (a.k.a. μDysH3)

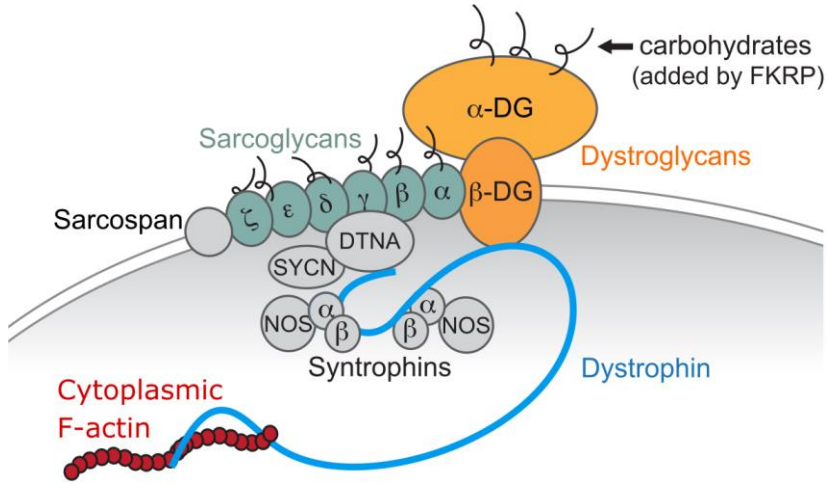
AVGND mechanism of action

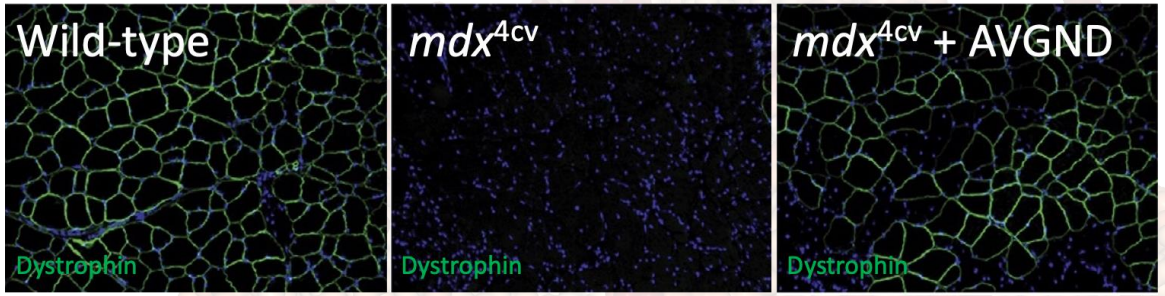
- Restores muscle structure
- Prevents degeneration & loss of function

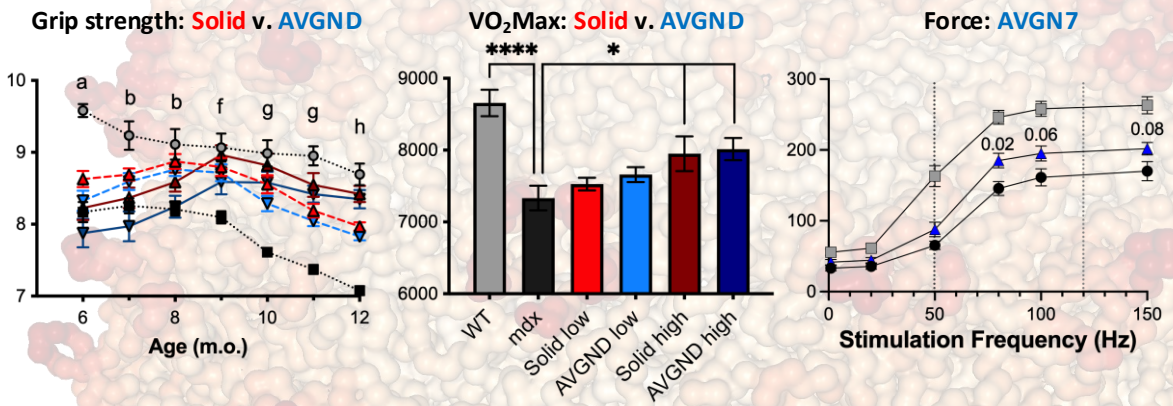
AVGND & Solid's μDys GTx are equally effective

AVGN7 builds muscle mass & strength in dystrophic mice

AVGND + AVGN7 to restore healthy muscle







IBM Competition

Abcuro/Ulviprubart & Pfizer/Sirolimus

- Anti-inflammatory
- Prevents degeneration **ONLY**
- Sirolimus failed Phase 3, discontinued
- Ulviprubart missed 1° endpoint Phase 2/3

Novartis/Bimagrumab

- Modest effect on muscle mass insufficient to improve function
- Affects non-muscle tissues risking pituitary, liver & possibly vascular events not captured by tox studies
- Discontinued for IBM

AVGN7

- Muscle-specific, blocks **ALL** ActRII ligands
- Durable, prevents degeneration
- Restores muscle mass & function

5 yr IBM US Market

- Rare disease indication
- 10% penetration = 2.3K
- $2M/patient

$4.6B

HFrEF Competition

Sardocor SRD-001 & AskBio AB1002

- Increases SERCA2A levels
- Increases PLN activation
- Off-target toxicity risks (AAV1 & 8)

AVGN7

- Increases SERCA2a levels
- Increases PLN activation
- Muscle-specific, blocks **ALL** ActRII ligands
- Durable, prevents degeneration
- Restores cardiac mass & function

5 yr HFrEF US Market

- Large-market indication
- IC delivery for 2% penetration = 63K
- $50K/patient

$3.2B

DMD Competition

Sarepta Elevidys, REGENXBIO RGX-202 & Solid SGT-003 μDys GTXs

- Durable, prevents degeneration **ONLY**
- Serious off-target toxicity risks

Sarepta exon skipping drugs

- Questionable efficacy
- Prevents degeneration **ONLY**
- Limited market penetration

Scholar Rock Apitegromab

- Potential use as combinatorial with Dys-targeting therapeutic
- Targets myostatin only, not other ligands (GDF11, activins, etc.) with identical action

AVGND + AVGN7

- Muscle-specific, blocks **ALL** ActRII ligands
- Durable, prevents degeneration
- Restores muscle mass & function

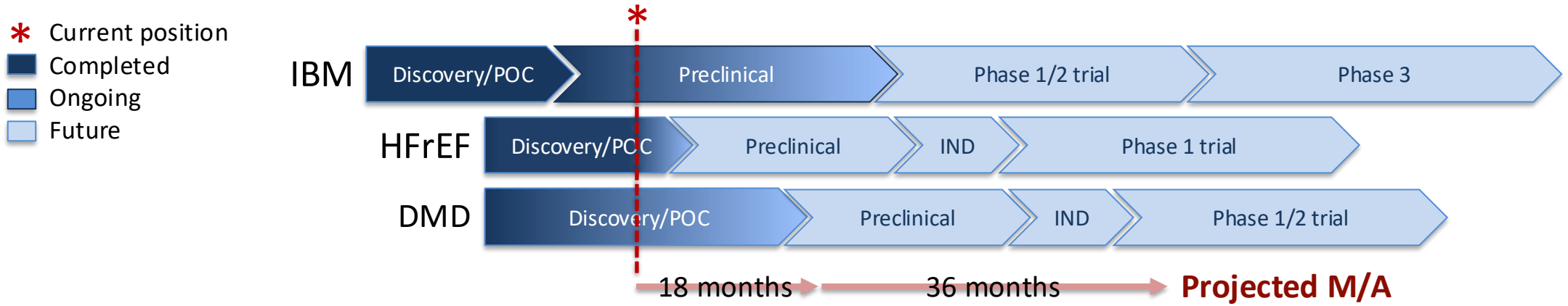
5 yr DMD US Market

- Rare disease indication
- 10% penetration = 1.6K
- $3M/patient

$4.8B

Business Model

Begin buildout with Series A, expand R&D focus capitalizing on core technologies & licensing



Series A ($12M)

- Comparability PoC studies
- IBM preclinical GLP/tox
- Manufacturing readiness
- IND filing

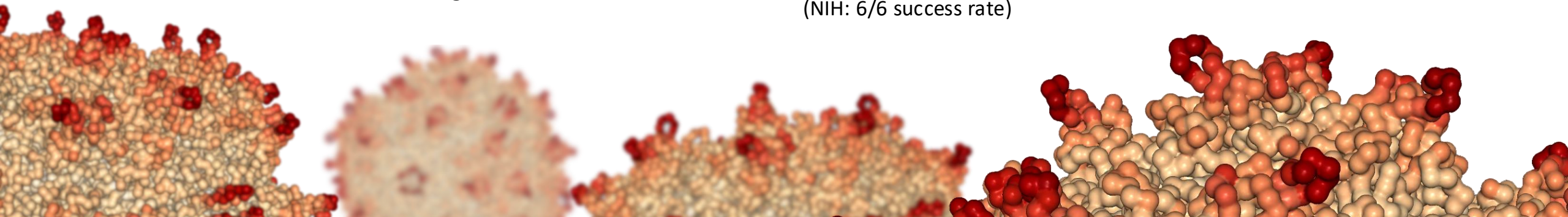
Establish BoD
Begin team buildout

Series B ($58M)

- Manufacturing
- Phase 1/2 IBM trial
- Preclinical for other indications
- Supplemented SBIR & foundation grants (NIH: 6/6 success rate)

Series C ($200M)

- Leveraged by IBM safety & efficacy results
- Expand clinical trials & pipeline



Capital strategy

Current raise, $12M Series A
$3M anchored by Eurofarma Ventures
Supplemented by $6.8M NIH grants

Lead Asset Preclinical & CMC, *$3.2M SBIR grant*

- Comparability studies
- Mouse & minipig GLP/tox studies
- CMC readiness

cGMP & Clinical Readiness, *$12M Equity*

- 200L cGMP production
- 24-month corporate runway
- $2.7M operational risk reserve

Pipeline Proof-of-Concept, *$3.6M SBIR/Catalyze grants*

- In vivo disease model validation
- Multi-indication target expansion
- Non-dilutive pipeline de-risking

Building value without dilution

$5.6M raised to date, 6-for-6 NIH SBIR grant success

National Institute on Aging
National Institute of Arthritis, Musculoskeletal and Skin Diseases
National Institute of Diabetes and Digestive and Kidney Diseases
National Heart, Lung and Blood Institute
National Cancer Institute

Pending grants in review

NIA R44 Phase IIB: $3,246,993

- *Preclinical Development of AVGN7 for Inclusion Body Myositis*
- Supported by The Myositis Association

NIAMS R44 Phase II: $2,299,433

- *Preclinical Development of a Combinatorial Gene Therapy for Duchenne Muscular Dystrophy*
- Supported by The Muscular Dystrophy Association & CureDuchenne

NHLBI R61/R33 Catalyze Phase I/II: $1,301,693

- *AVGN7 to Prevent Heart Failure with Reduced Ejection Fraction*

$18.8M Capital Allocation Breakdown

Workstream	Total Budget	Grant Coverage	Equity Coverage	Deliverable
Mouse & minipig GLP tox	$2.0M	$2.0M	---	Mouse/minipig GLP safety, biodistribution & ADA
CMC process & analytics	$1.2M	$1.2M	---	Full/empty analytics, potency, GMP-comp for tox
cGMP clinical batch	$4.5M	---	$4.5M	Clinical drug product fill/finish & stability
Pipeline expansion	$3.6M	$3.6M	---	*In vivo* proof-of-concept for DMD & HFrEF
24-month runway	$4.8M	---	$4.8M	Team buildout, legal/IP, regulatory submissions
Contingency reserve (-14%)	$2.7M	---	$2.7M	Buffer for grant delays & CDMO/tox/regulatory adjustments

24-month IBM Value Inflection Roadmap

Months 1-6
Non-GLP & Process
- Comparability studies
- CDMO tech transfer
- GMP-like tox batch

Milestone: tox batch release

Months 7-12
IBM Preclinical
- Mouse/minipig GLP tox
- FDA pre-IND meeting
- Pipeline PoC studies

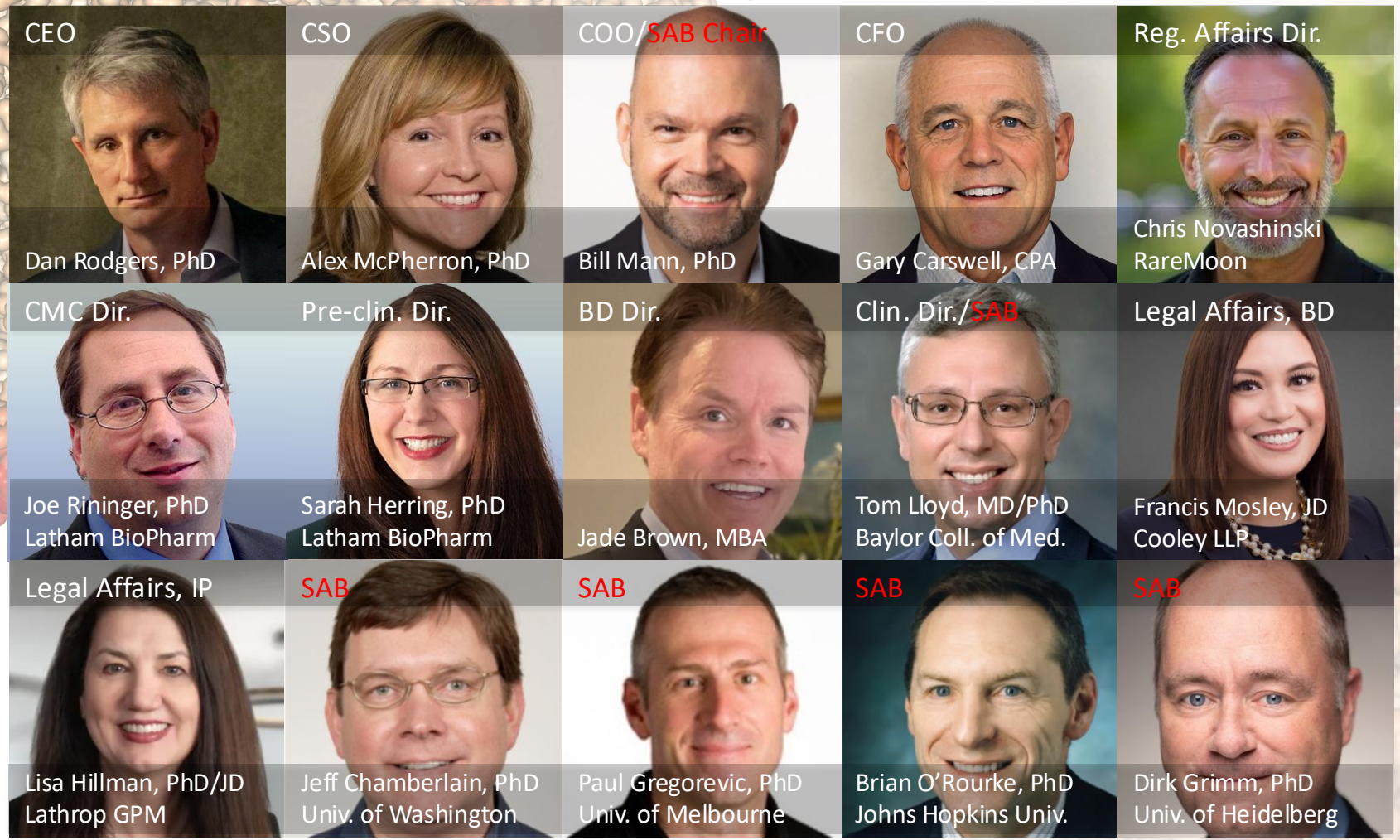
Milestone: FDA alignment

Months 13-18
cGMP Manufacturing
- 200L cGMP
- Pipeline PoC studies
- IND package

Milestone: Clinical drug product

Months 19-24
Milestones
- IND filing
- Initiate PI/II

Our Team



Our Partners

Animal research CROs

- Myologica
- Noble Life Science

CMC

- Andelyn Biosciences
- CHOP Vector Core

Assay Development CROs

- Smithers
- InfinixBio

University Collaborators

- Johns Hopkins
- Baylor
- Columbia