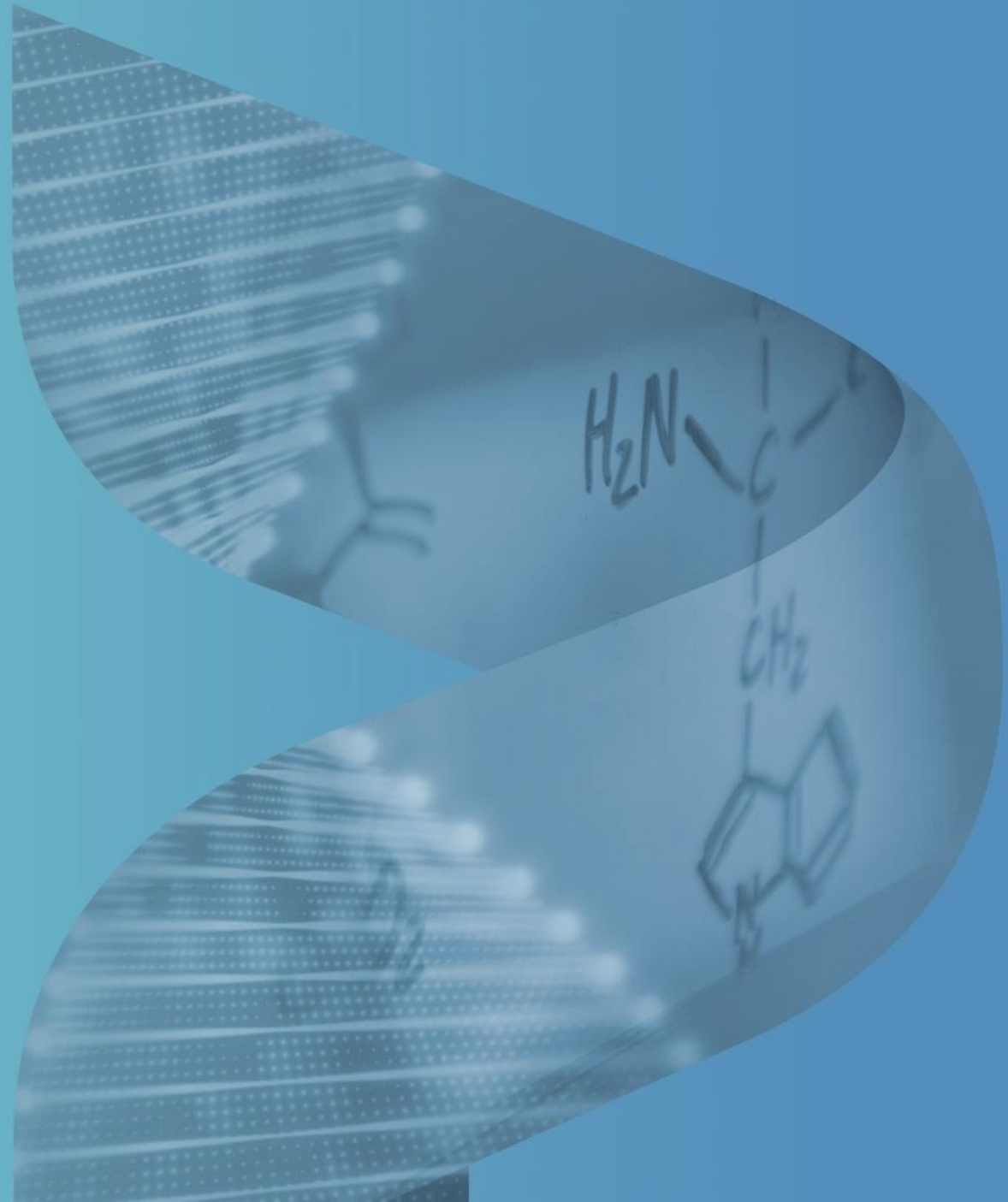




# Company Presentation

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December 2024

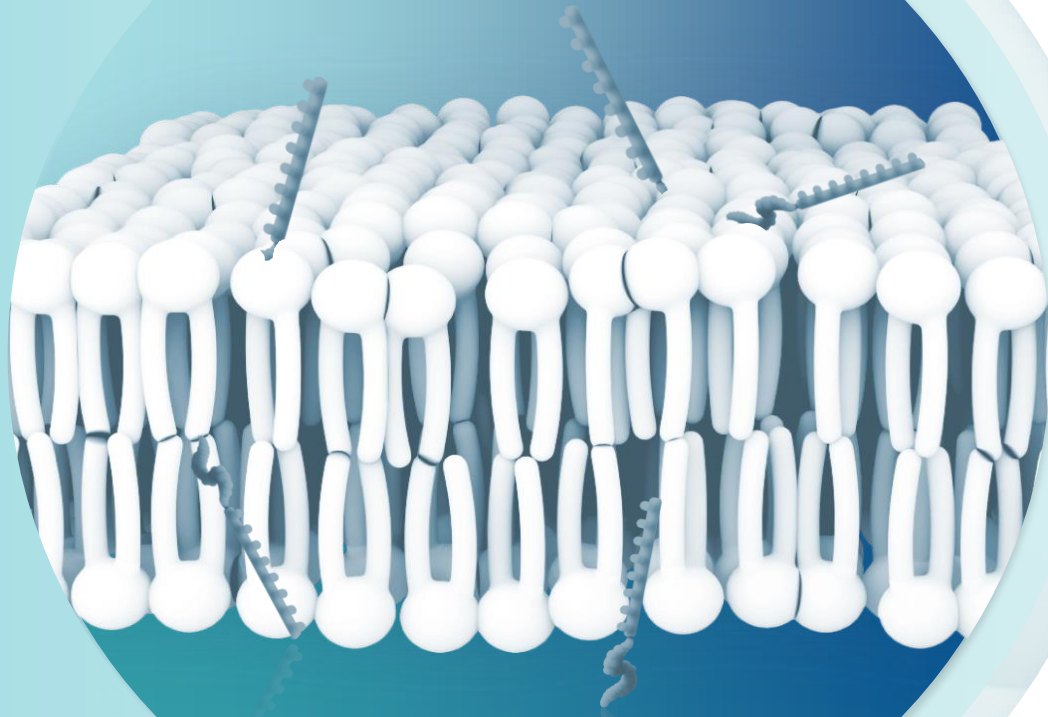


# Forward-Looking Statements

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. These statements may be identified by words such as “aims,” “anticipates,” “believes,” “could,” “estimates,” “expects,” “forecasts,” “goal,” “intends,” “may,” “plans,” “possible,” “potential,” “seeks,” “will,” and variations of these words or similar expressions that are intended to identify forward-looking statements. Any such statements in this presentation that are not statements of historical fact may be deemed to be forward-looking statements. These forward-looking statements include, without limitation, statements regarding the potential of our EDO platform to deliver higher levels of oligonucleotide to the nuclei and to dramatically improve the lives of people living with severe neuromuscular and neurological diseases, the therapeutic potential and safety profile of our product candidates, including based on early data, PGN-EDO51 and PGN-EDODM1, the design, initiation and conduct of clinical trials, including expected timelines for our CONNECT1-EDO51 and CONNECT2-EDO51 Phase 2 trials, and our FREEDOM1-DM1 Phase 1 and FREEDOM2-DM1 Phase 2 trials, the expected timing for additional results from our CONNECT1 Phase 2 trial and results from our FREEDOM Phase 1 trial, ongoing and planned regulatory interactions, the evaluation of PGN-EDO53 in IND/CTA enabling studies, and our financial resources and cash runway.



Any forward-looking statements in this presentation are based on current expectations, estimates and projections only as of the date of this presentation and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to: delays or failure to successfully initiate or complete our ongoing and planned development activities for our product candidates, including PGN-EDO51, PGN-EDODM1 and PGN-EDO53; our ability to enroll patients in our clinical trials, including CONNECT1, CONNECT2, FREEDOM and FREEDOM2; that our interpretation of clinical and preclinical study results may be incorrect, or that we may not observe the levels of therapeutic activity in clinical testing that we anticipate based on prior clinical or preclinical results, including for PGN-EDO51 and PGN-EDODM1; our product candidates, including PGN-EDO51 and PGN-EDODM1, may not be safe and effective or otherwise demonstrate safety and efficacy in our clinical trials; adverse outcomes from our regulatory interactions, including delays in regulatory review, clearance to proceed or approval by regulatory authorities with respect to our programs, including clearance to commence planned clinical studies of our product candidates, or other regulatory feedback requiring modifications to our development programs, including in each case with respect to our including CONNECT1, CONNECT2, FREEDOM and FREEDOM2 clinical trials; changes in regulatory framework that are out of our control; our ability to obtain, maintain and protect our intellectual property; our ability to enforce our patents against infringers and defend our patent portfolio against challenges from third parties; competition from others developing therapies for the indications we are pursuing; unexpected increases in the expenses associated with our development activities or other events that adversely impact our financial resources and cash runway; and our dependence on third parties for some or all aspects of our product manufacturing, research and preclinical and clinical testing. Additional risks concerning PepGen's programs and operations are described in our most recent annual report on Form 10-K and quarterly report on Form 10-Q that are filed with the SEC. PepGen explicitly disclaims any obligation to update any forward-looking statements except to the extent required by law.

This presentation discusses PGN-EDO51 and PGN-EDODM1, investigational therapies that have not been approved for use in any country and is not intended to convey conclusions about their efficacy or safety. There is no guarantee that PGN-EDO51, PGN-EDODM1 or any other investigational therapy will successfully complete clinical development or gain regulatory authority approval.



Driven by our proprietary Enhanced Delivery Oligonucleotide (EDO) platform, PepGen is creating a pipeline of disease-modifying therapeutics with the potential to safely and effectively target the underlying cause of serious genetic neuromuscular and neurological diseases

# PepGen's Pipeline Enabled by EDO Technology

INVESTIGATIONAL CANDIDATES	CLINICAL PROGRAMS	INDICATIONS	PRECLINICAL	PHASE 1	PHASE 2	PIVOTAL
PGN-EDO51		DMD – <i>Exon 51</i>	[Progress bar: ~85%]			
PGN-EDODM1		DM1 – <i>DMPK</i>	[Progress bar: ~80%]			
PGN-EDO53		DMD – <i>Exon 53</i>	[Progress bar: ~25%]			



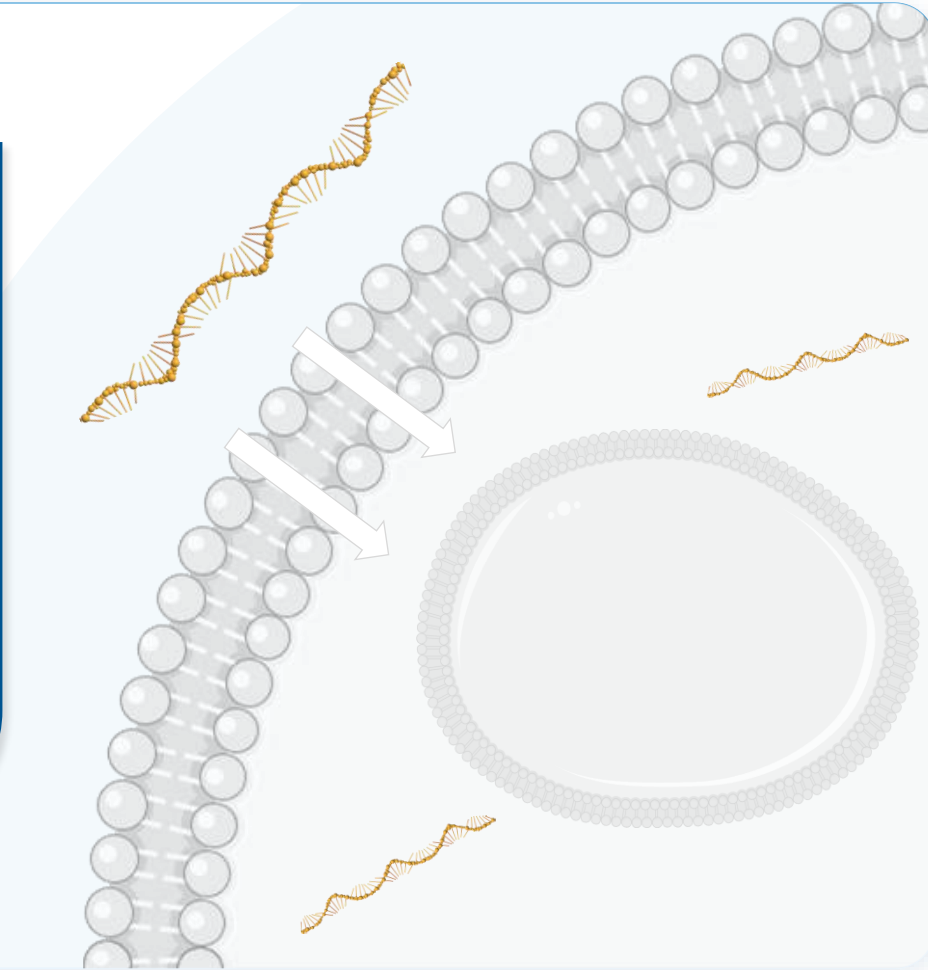
## Research

- DMD *Exon 45, Exon 44*
- Additional neuromuscular diseases
- Neurological diseases

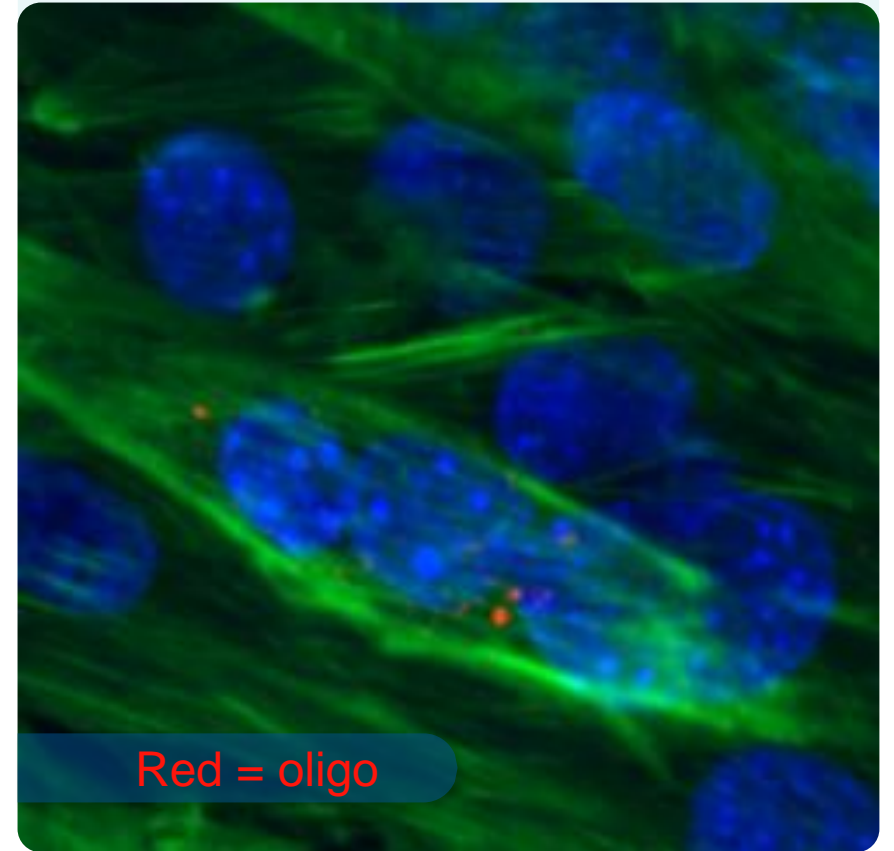


# The Challenge of Oligonucleotides

Naked oligonucleotides do not efficiently penetrate muscle cells and nucleus

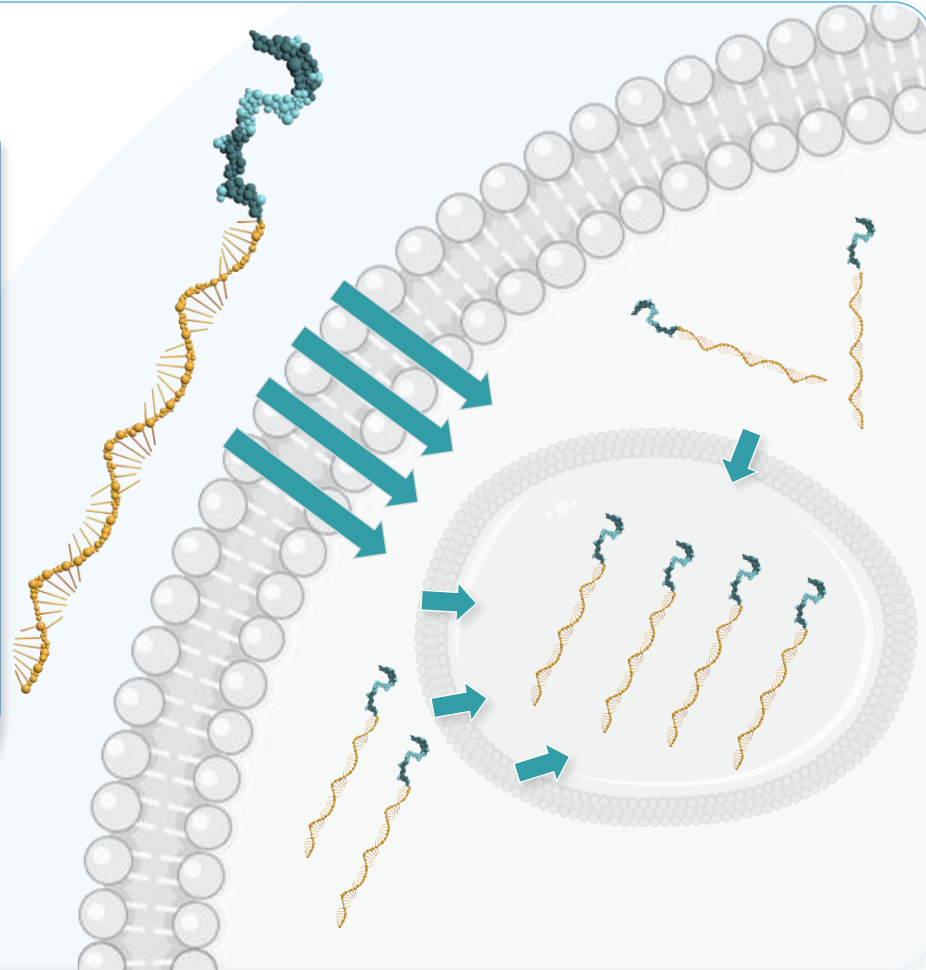


## Naked Oligonucleotide (PMO)

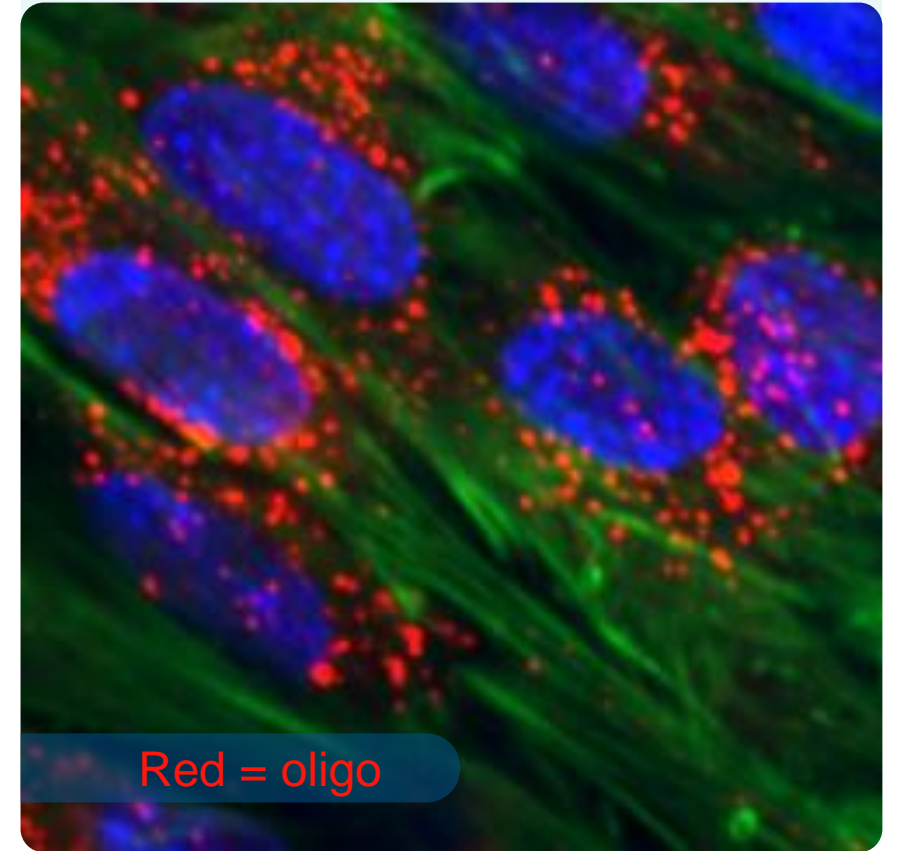


# PepGen's EDO Platform Has Been Designed and Developed to Solve this Decades Long Problem

EDO platform results in nuclear delivery of oligonucleotide therapeutics



PepGen's EDO: Up to 25X Higher Nuclear Uptake of Oligonucleotide



# Latest Achieved Milestones



## DM1: PGN-EDODM1

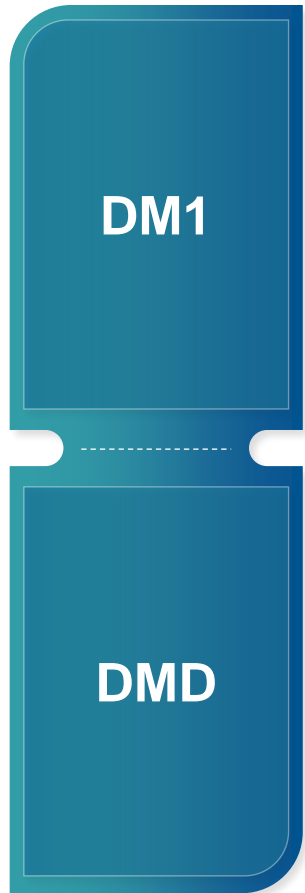
- FREEDOM-DM1 (Phase 1) open in US, Canada and UK
- FREEDOM2-DM1 (Phase 2) open in Canada and UK
  - First participant dosed in Q4 2024



## DMD: PGN-EDO51

- CONNECT1-EDO51 (Phase 2) at 5 mg/kg
  - Encouraging levels of muscle adjusted dystrophin production (0.70%) and total dystrophin production (0.26%) after 3 months and 4 doses
  - High levels of exon 51 skipping (2.15%)
  - Data demonstrates EDO technology delivers high levels of oligonucleotides to the nucleus
- CONNECT1 10 mg/kg – all 4 participants have received at least one dose

# Anticipated Upcoming Milestones



- FREEDOM 5 mg/kg and 10 mg/kg clinical results by end of Q1 2025
- FREEDOM 15 mg/kg clinical results in 2H 2025



- CONNECT1 10 mg/kg clinical results by year-end 2025





## PGN-EDODM1 for DM1

---

# Myotonic Dystrophy Type 1 (DM1) Overview and Unmet Medical Need



## Overview

- Mutation in DMPK gene
- Onset of symptoms variable-  
childhood to adulthood
  - Myotonia
  - Muscle weakness
  - Cardiac arrhythmias
  - Loss of lung function
- Average life expectancy is 50-60 years for non-congenital forms of DM1

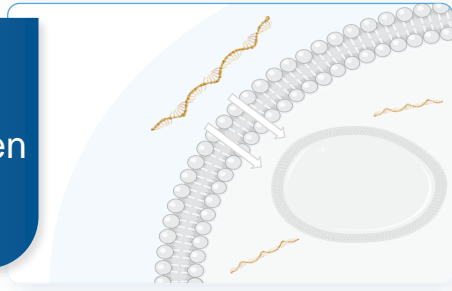
## Market opportunity

- US and EU over 110,000 patients
- No approved therapies that address underlying cause of the disease

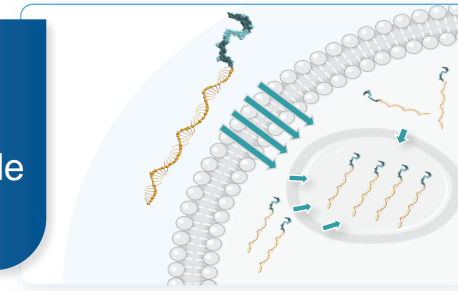


# PGN-EDODM1 is Efficiently Delivered to the Nuclei of Muscle Cells

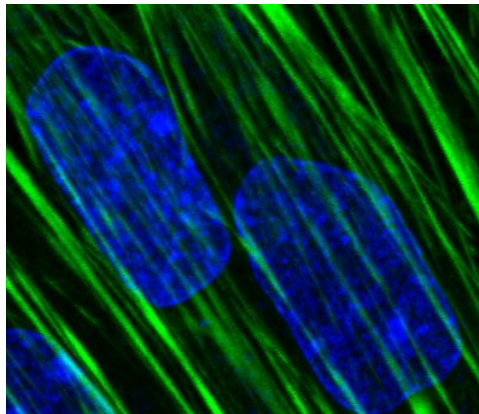
Naked oligonucleotides not efficiently taken up into muscle cells & nucleus



EDO's enhance nuclear delivery of oligonucleotide therapeutics

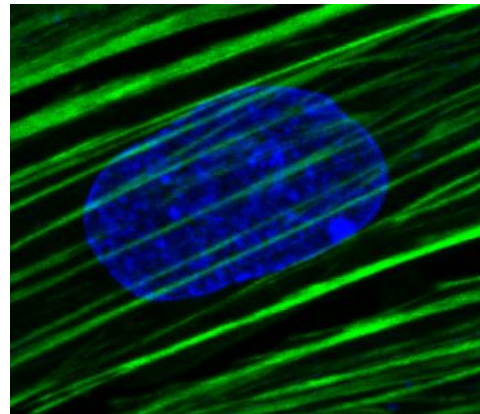


Not treated



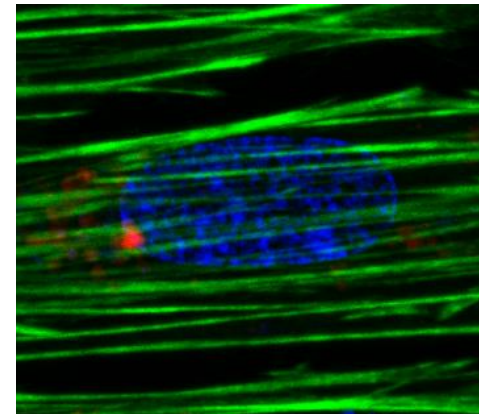
0  $\mu$ M

PGN-PMODM1

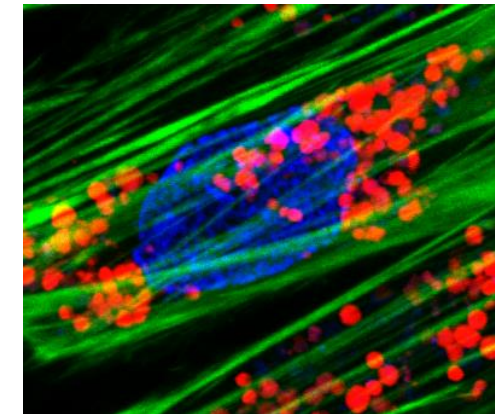


20  $\mu$ M

PGN-EDODM1



2  $\mu$ M



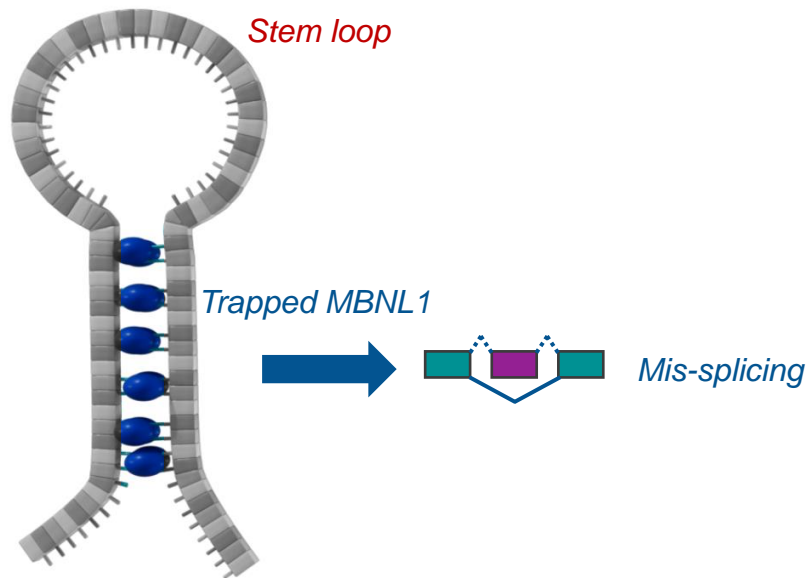
10  $\mu$ M

PGN-EDODM1 / Actin / Nucleus

# PepGen's Novel Therapeutic Approach to Treat Root Cause of DM1

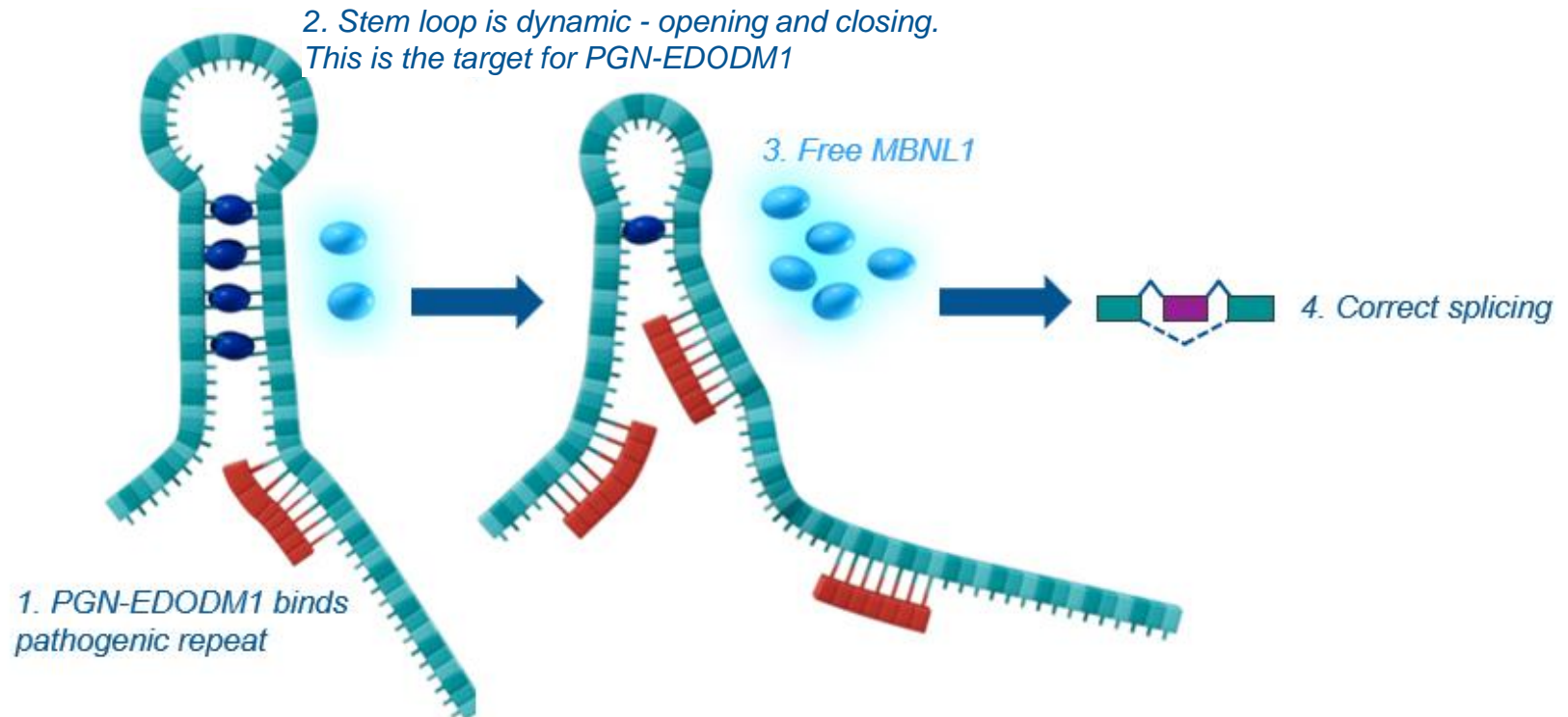
## DM1

Repeating RNA "CUG" sequences, associated with DM1, form stem loop, trapping MBNL1 proteins



## PGN-EDODM1 Targets Pathogenic DMPK

EDO enhances delivery of PMO cargo to the nucleus, targeting pathogenic DMPK with expanded CUG repeats

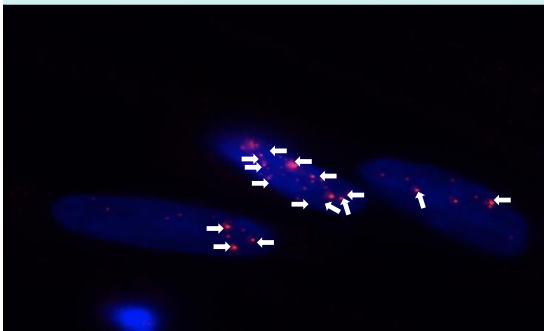




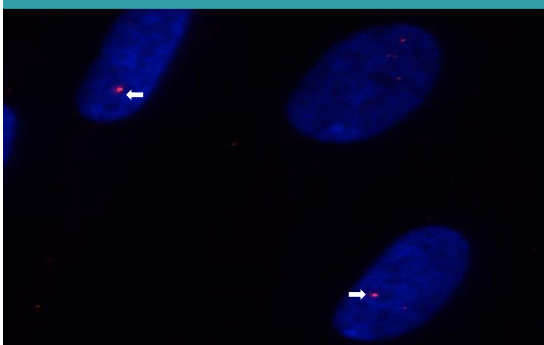
# PGN-EDODM1 Reduced Pathogenic Nuclear Foci, Liberated MBNL1 and Corrected Mis-Splicing in Patient Cells with Long CUG Repeats

## Foci Reduction

Not Treated



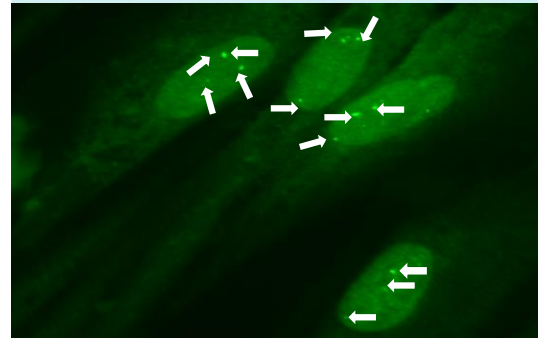
PGN-EDODM1 Treated



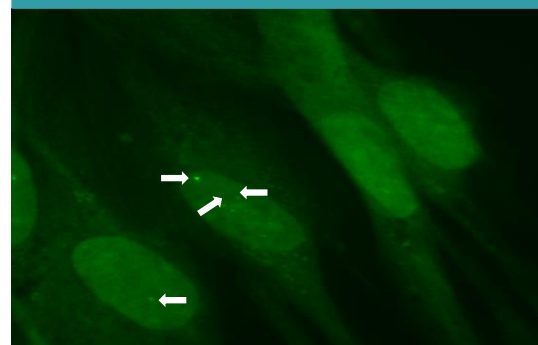
**54%**  
reduction in  
toxic foci

## MBNL1 Liberation

Not Treated



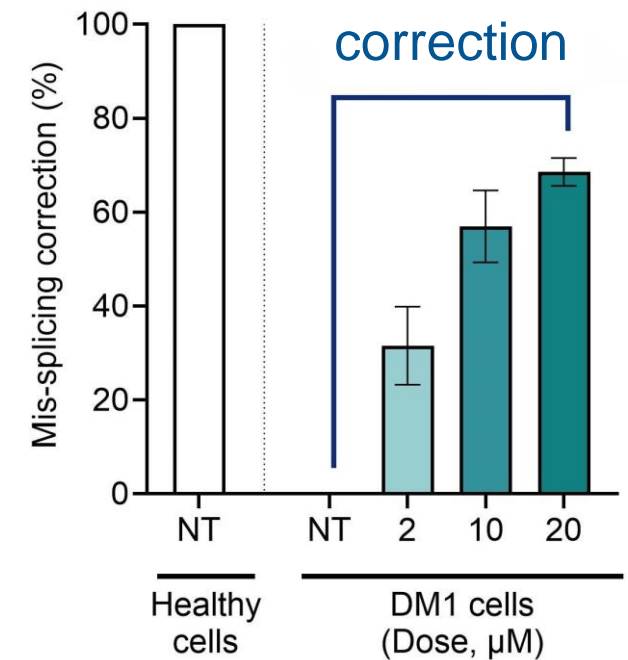
PGN-EDODM1 Treated



## Mis-Splicing Correction

*Across multiple transcripts*

**69%**  
correction



# PGN-EDODM1 Corrected Movement Disorder of DM1 Mouse Model

Non-Treated HSA<sup>LR</sup>



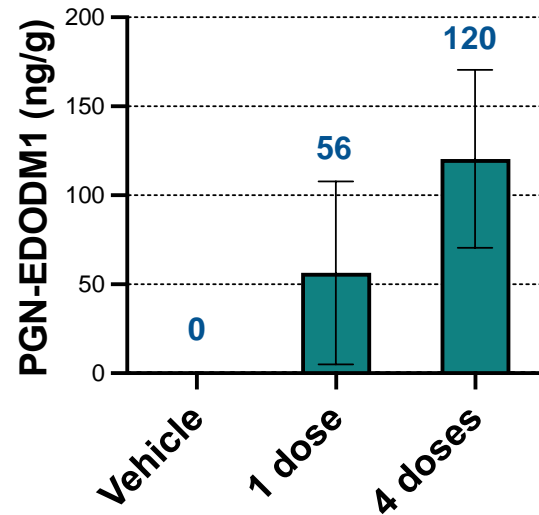
Treated HSA<sup>LR</sup>



# Multiple Doses of EDOs Have Been Shown to Lead to Greater Efficacy Than Single Doses in Both Preclinical and Clinical Healthy Volunteer (HV) Studies

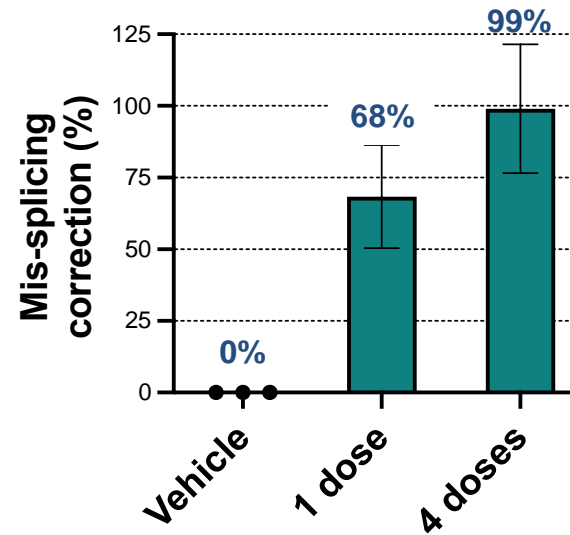
## Tissue Concentration

Skeletal muscle



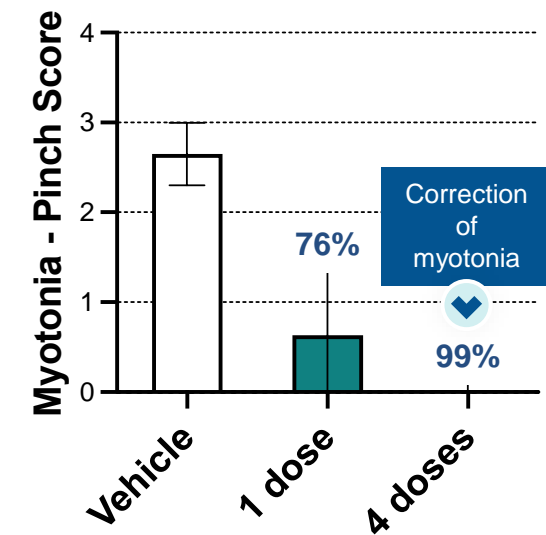
## Mis-Splicing Correction

Across multiple transcripts



## Correction of Myotonia

Pinch test



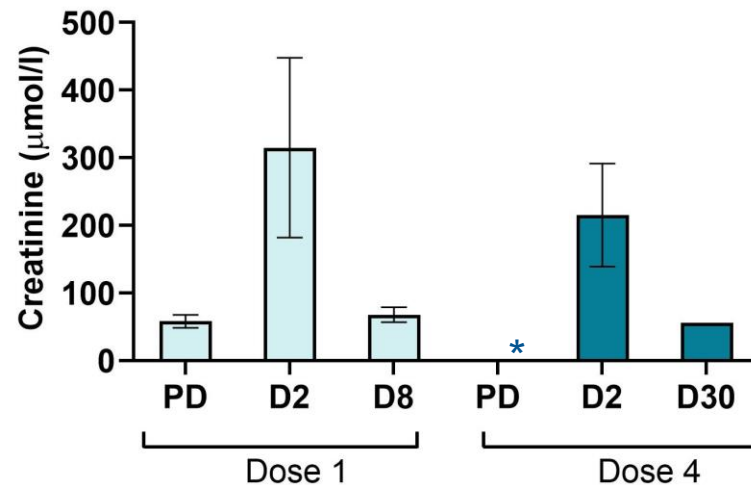
EDO technology (PGN-EDO51) resulted in activity in HVs while achieving PMO concentration of 136 ng/g with a single dose; therefore, we expect meaningful improvement in key biomarkers with a single dose of PGN-EDODM1 in FREEDOM

# Preclinical Safety: Observed Changes in Creatinine are Transient and Not Associated with Adverse Kidney Findings

We believe these results support the potential tolerability of PGN-EDODM1 with repeat dosing



## PGN-EDODM1 REPEAT-DOSE SERUM CREATININE



Dosing schedule

Month:	0	1	2	3
	●	●	●	●

● PPMO dose: 60 mg/kg

- Transient increase in serum creatinine resolved within a week post-dose
- No adverse findings in the kidney even after 4 doses up to 60 mg/kg
- No notable hematologic, cardiovascular or hepatic effects in 13-week study



# FREEDOM: Phase 1 PGN-EDODM1 Single-Ascending Dose Study Design



## FREEDOM Study Overview

Multinational, randomized, double-blind, placebo-controlled SAD study in patients

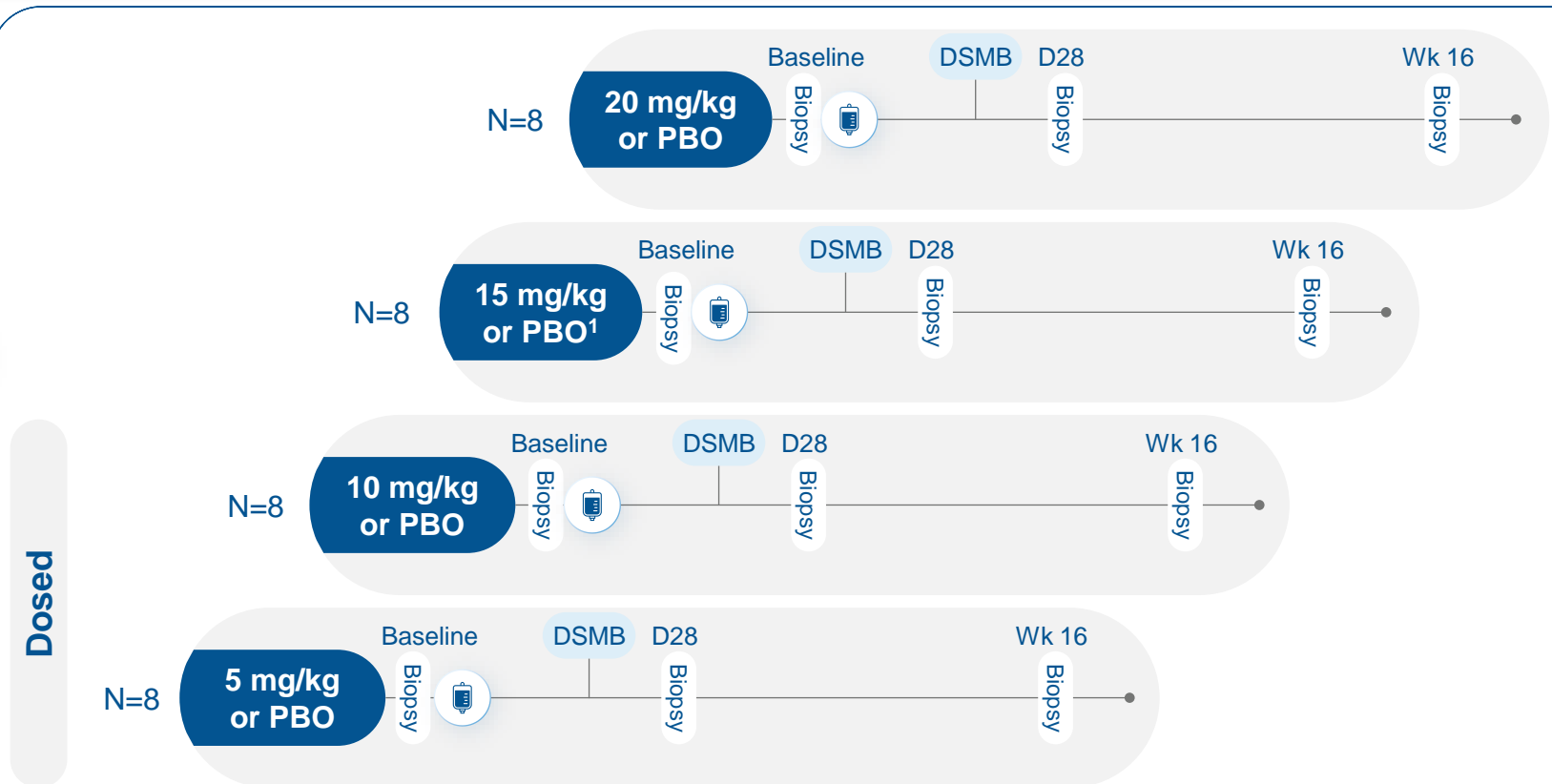


Single IV administration of PGN-EDODM1

Muscle biopsies in tibialis anterior at baseline, day 28, week 16

Initial functional assessments, correction of mis-splicing and safety

## Single Dose PGN-EDODM1 or Placebo (randomized 3:1)



# FREEDOM Informed Design of Phase 2 FREEDOM2 Trial



## Enrolling in US, Canada and UK

- Phase 1 randomized, double-blind, placebo-controlled SAD study in patients
- Key anticipated readouts: Functional assessments, correction of mis-splicing, safety data



## Multinational Study Initiated

- Phase 2 randomized, double-blind, placebo-controlled multiple-ascending dose (MAD) study in patients
- Dosing initiated in FREEDOM2 in Q4 2024
  - IV administration of PGN-EDODM1 every 4 weeks up to 12 weeks
  - Key anticipated readouts: Functional assessments, correction of mis-splicing, safety data

# FREEDOM2: Phase 2 Multiple-Ascending Dose Study Design



## FREEDOM2 Study Overview

Multinational, randomized, double-blind, placebo-controlled, MAD study

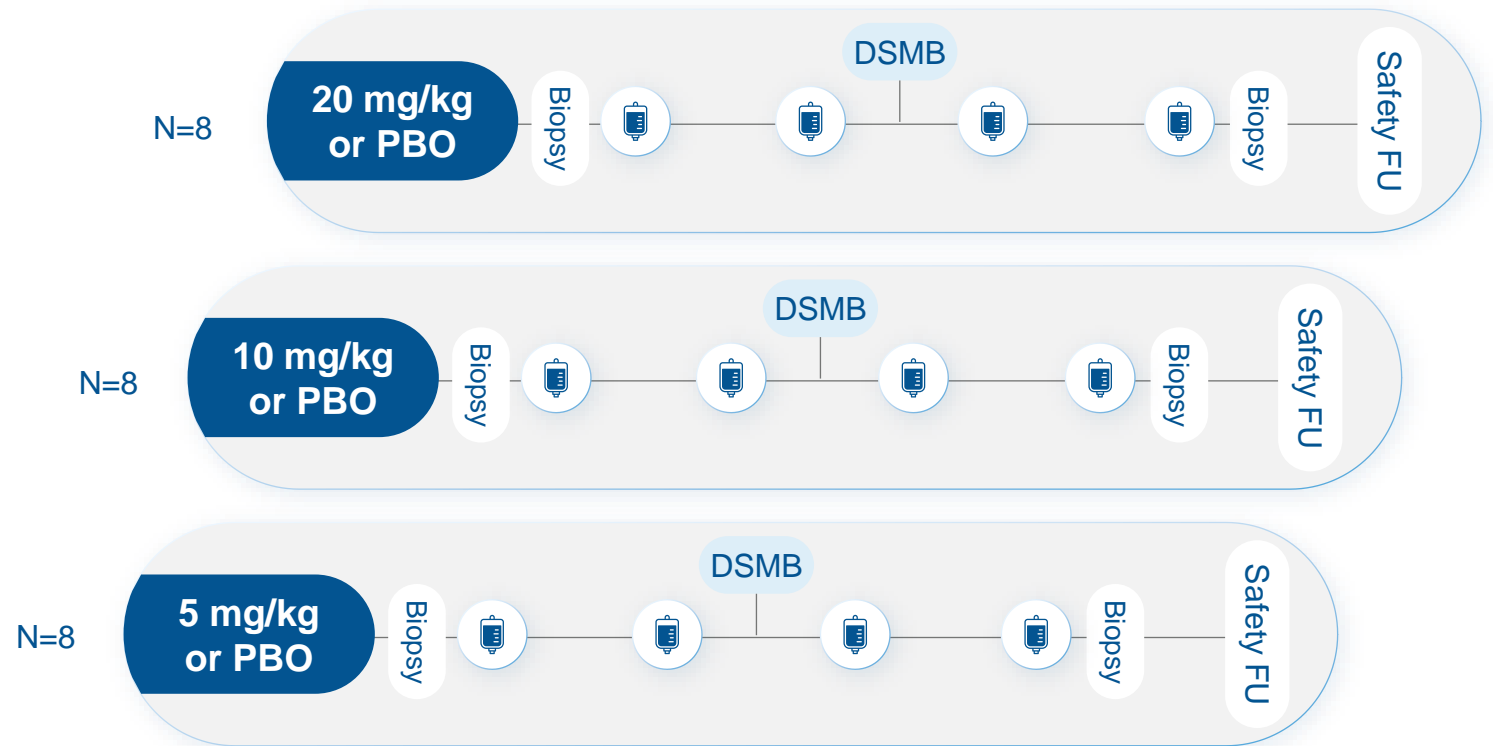
IV administration of PGN-EDODM1 or placebo every 4 weeks for a period of 12 weeks

Key endpoints: Safety, PK, correction of splicing, functional assessments: vHOT, hand grip, 10-meter walk run test

## 4 Doses of PGN-EDODM1 or Placebo (randomized 3:1)

Screening

Dosing





## PGN-EDO51 for DMD

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# Duchenne Muscular Dystrophy (DMD) Overview and Unmet Medical Need

## Overview

- Caused by mutation in dystrophin gene resulting in progressive muscle damage
- Onset of symptoms in early childhood
  - Loss of ambulation by early adolescence
  - Loss of respiratory and cardiac function resulting in early adulthood mortality

## Market opportunity

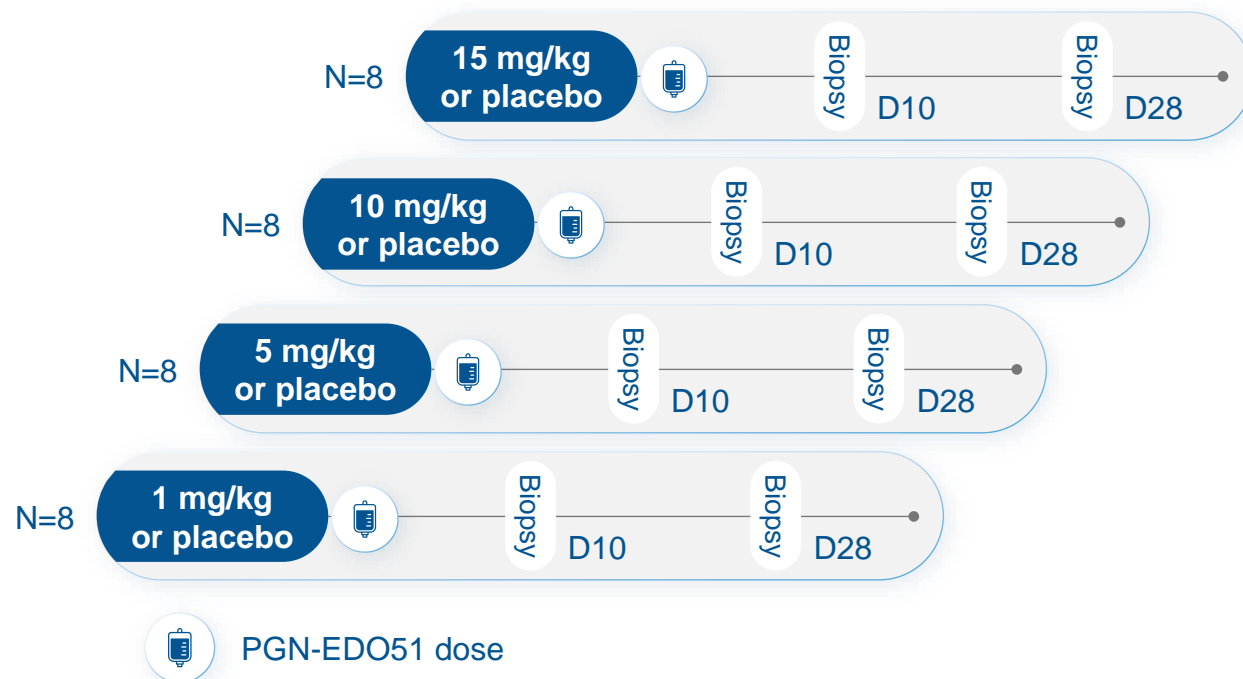
- US and EU ~40,000 patients
- ~21% patients amenable to:
  - PGN-EDO51: Phase 2 (exon 51)
  - PGN-EDO53: CTA/IND enabling studies advancing (exon 53)
- Novel therapies needed to restore functional dystrophin and prevent loss of muscle function and early mortality



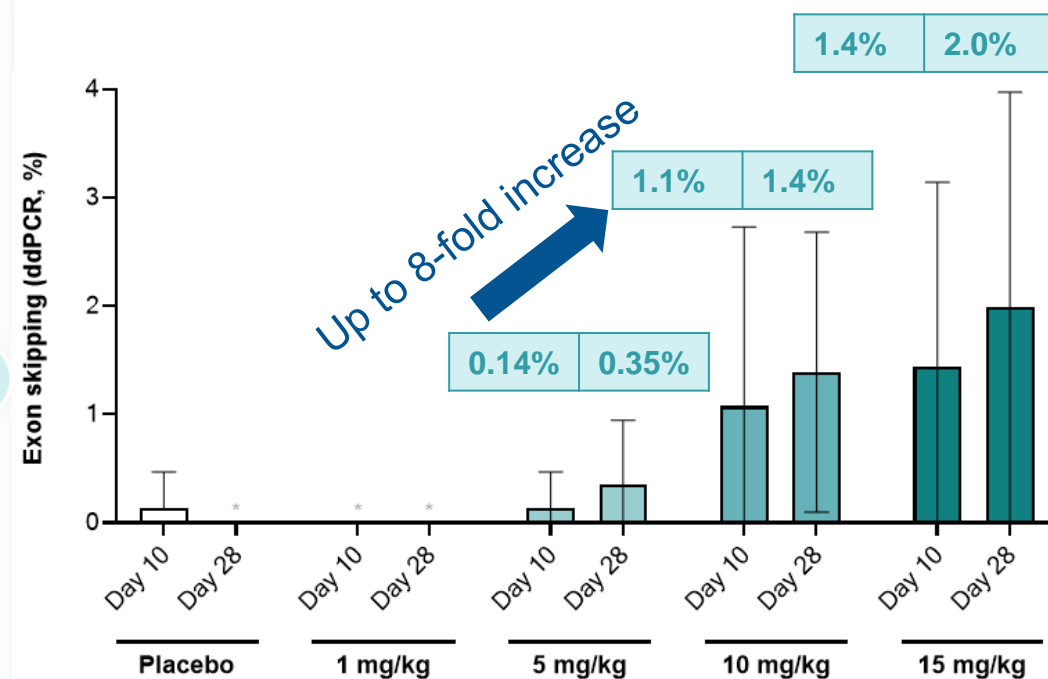
# Healthy Volunteer Study Results Led to CONNECT1: Highest Levels of Exon 51 Skipping in Humans Following Single Dose of PGN-EDO51<sup>1</sup>

## Phase 1 Healthy Volunteer (HV) Trial Design

- Study population: Healthy adult males (n=32; 8 per cohort, 3:1 PGN-EDO51:placebo)
- Dosing: Single dose, IV administration
- Biceps biopsies conducted on Day 10 and Day 28



## Trial Results: Exon Skipping (Biceps)



# CONNECT1: Designed to Establish Proof-of-Concept and Inform CONNECT2 Clinical Trial Design



## Connect 1

EDO51

### CONNECT1 Study Overview

Open label, multiple ascending dose (MAD) clinical trial in Canada

DMD patients (n=11) with exon 51 skippable mutation

Ages 6-16, ambulatory and non-ambulatory

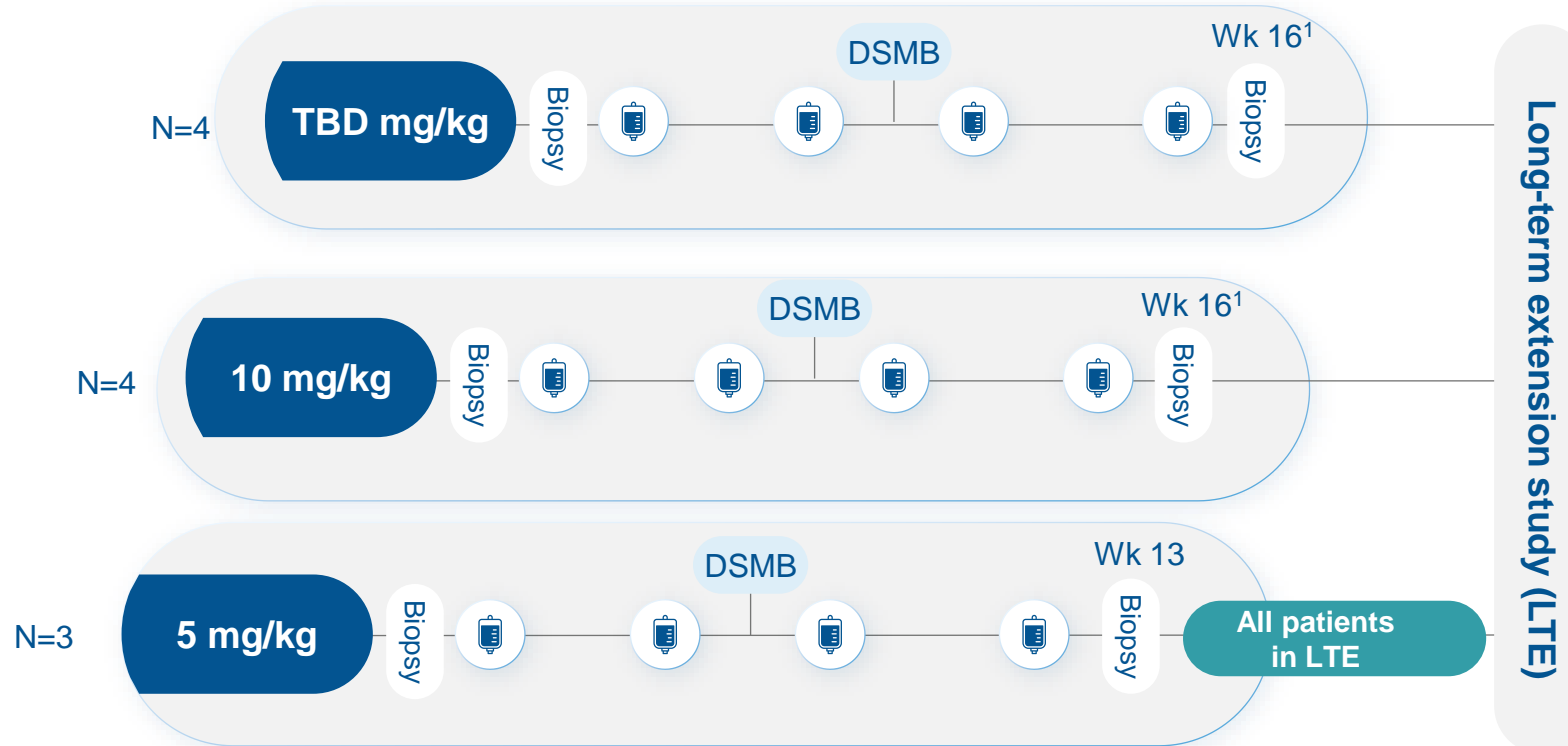
Key endpoints: Safety and tolerability, dystrophin production, muscle tissue concentration of PGN-EDO51, exon skipping



## Open Label Study in Patients with DMD Amenable to Exon 51 Skipping Therapy

Dosing

Initial data  
readout



# CONNECT1 5 mg/kg: Baseline Characteristics of Participants (N=3)

	<b>Mean (SD)</b>
Age (years)	11.7 (1.5)
BMI (kg/m <sup>2</sup> )	19.8 (2.7)
Height (cm)	132.0 (9.9)
Weight (kg)	34.4 (3.9)
Age of DMD genetic diagnosis (years)	6.3 (1.5)
Number of patients on daily corticosteroid dosing regimen	3
Number of ambulatory patients	3
Number of patients previously on DMD therapy	0



# CONNECT1 5 mg/kg: Safety Profile<sup>1</sup>

MAD Period	N(%)
Any TEAEs, n(%)	3 (100)
Related to study drug	1 (33.3)
<ul style="list-style-type: none"> <li>Mild</li> <li>Moderate</li> <li>Severe</li> </ul>	1 (33.3) 0 0
Serious Adverse Events (AEs)	0
AEs leading to dose modification/ discontinuation/interruption	0
AEs leading to death	0

- All treatment emergent adverse events (TEAEs) were mild and resolved
- Related TEAE was mild (abdominal pain, flatulence)
- No discontinuations, dose modifications or dose interruptions
  - All participants rolled over to the long-term extension study
- No sustained elevation in kidney biomarkers
- No changes in electrolytes
  - No hypomagnesemia or hypokalemia
- No changes in hepatic function
- No anemia or thrombocytopenia

At 5 mg/kg, a total of 31 doses have been administered (12 doses in the MAD period+19 doses in the LTE period)<sup>2</sup>

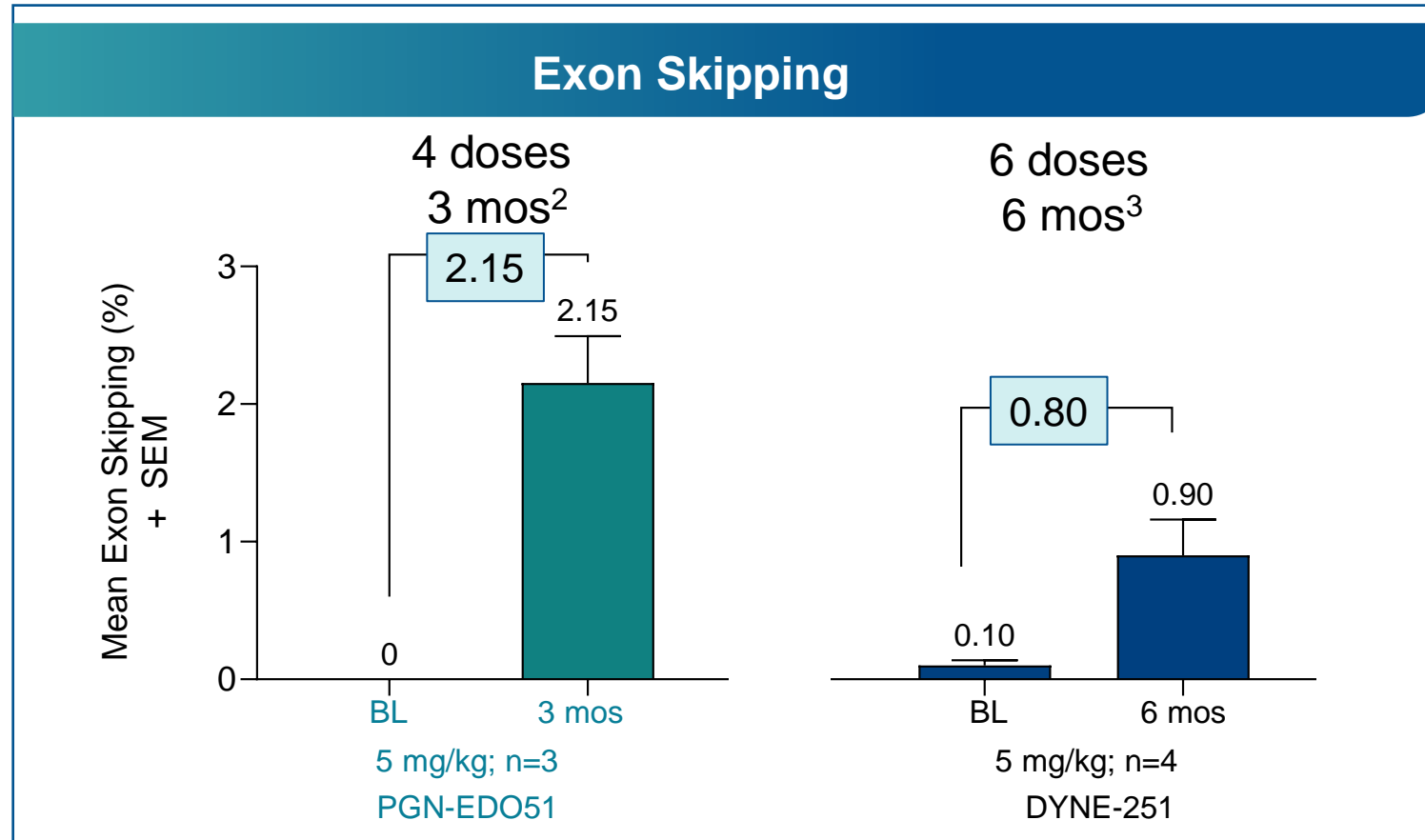
1. As of May 31, 2024  
 2. As of November 5, 2024



# Dosing Continues in Cohort 2 at 10 mg/kg<sup>1</sup>

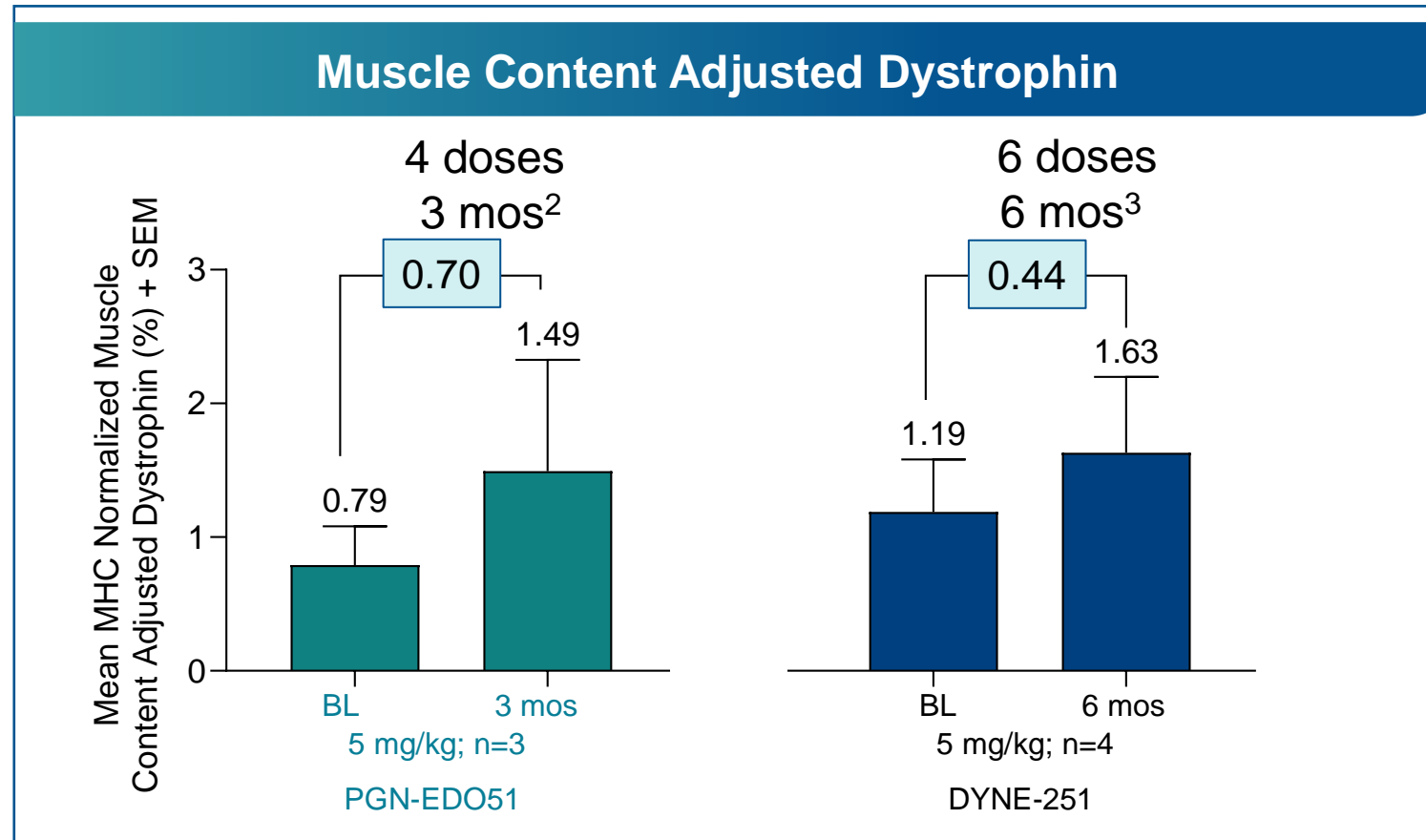
- Emerging safety profile is favorable
- At 10 mg/kg, a total of 10 doses have been administered
- All treatment-related adverse events have been mild or moderate
- No treatment-related serious adverse events
- Asymptomatic hypomagnesemia has been observed in 2 patients. They have been treated with oral supplementation and remain on study
- No dose discontinuations, dose modifications or dose interruptions
- No sustained elevation in kidney biomarkers
- No changes in hepatic function
- No hypokalemia, anemia or thrombocytopenia

# PGN-EDO51 Showed High Levels of Mean Exon Skipping



2. PGN-EDO51 muscle biopsy taken approximately 7 days after last dose
3. DYNE-251 muscle biopsy taken approximately 28 days after last dose

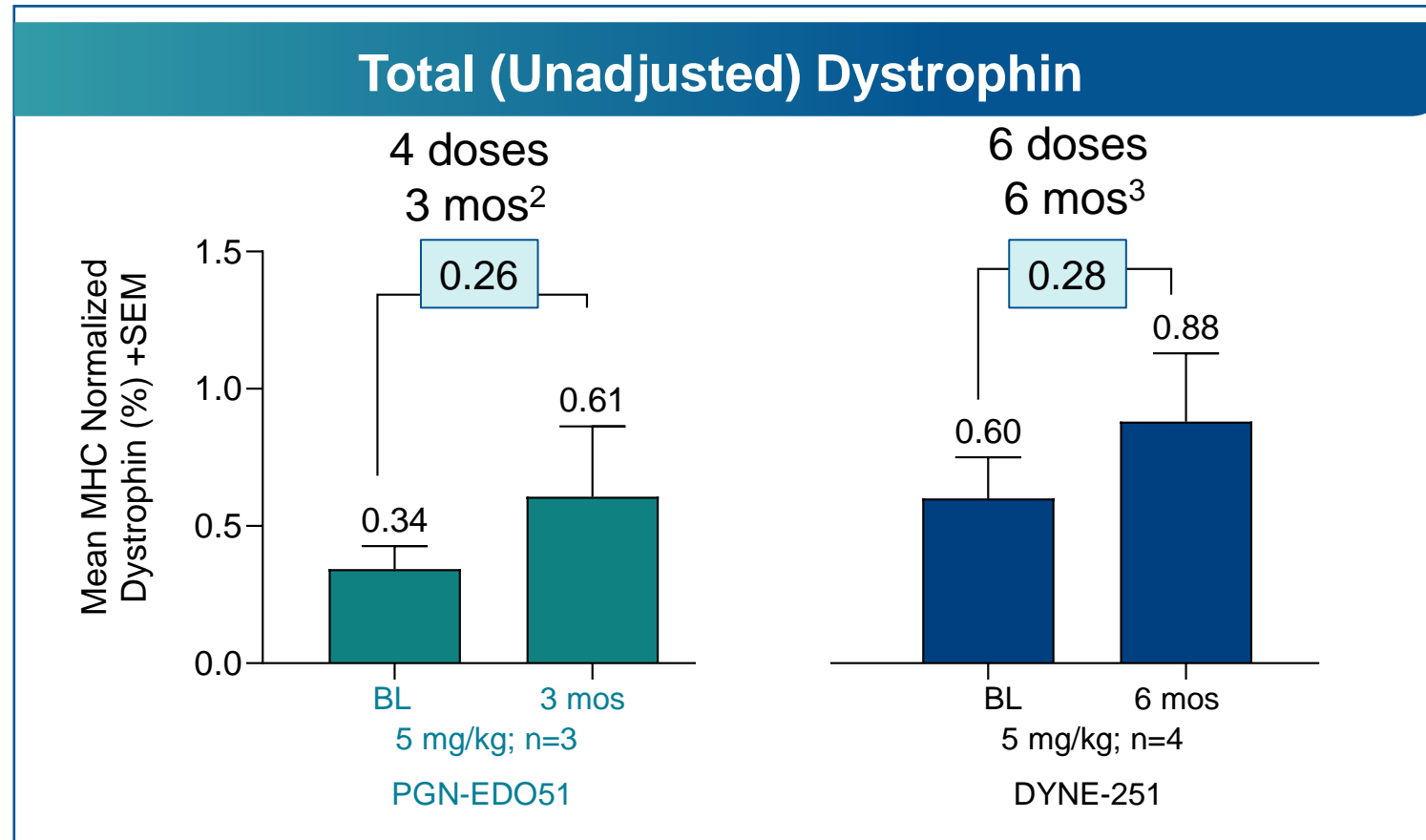
# PGN-EDO51 Produced Greater Muscle Content Adjusted Dystrophin Increase in Half the Treatment Duration and Fewer Doses<sup>1</sup>



2. PGN-EDO51 muscle biopsy taken approximately 7 days after last dose

3. DYNE-251 muscle biopsy taken approximately 28 days after last dose

# PGN-EDO51 Produced Similar Dystrophin Increase in Half the Treatment Duration<sup>1</sup>



2. PGN-EDO51 muscle biopsy taken approximately 7 days after last dose

3. DYNE-251 muscle biopsy taken approximately 28 days after last dose



# CONNECT1 Key Takeaways

- Emerging safety profile is favorable<sup>1</sup>
- All patients dosed at 5 mg/kg demonstrated increased exon skipping and dystrophin production and have continued into the long-term extension study
- PGN-EDO51 generated encouraging levels of muscle adjusted dystrophin production (0.70%) and total dystrophin production (0.26%) after just 3 months and 4 doses at 5 mg/kg
- PGN-EDO51 produced high levels of mean exon 51 skipping (2.15%) after just 3 months and 4 doses at 5 mg/kg
- Initial results support that our EDO technology delivers high levels of oligonucleotides to the nucleus

Potentially higher levels of dystrophin production are expected with higher doses of PGN-EDO51 over longer treatment periods

# PGN-EDO51 Development Path to Support Registration



## Ongoing

Phase 2: Open-label  
MAD trial

Open in Canada



Proof-of-concept: Dystrophin  
expression at 13-16 weeks<sup>1</sup>

## Open

Phase 2: Randomized,  
double-blind, placebo-  
controlled MAD trial

Multinational trial; open  
in United Kingdom



Potential to support  
accelerated approval<sup>2</sup>:  
Dystrophin expression at  
25 weeks

# CONNECT2: Phase 2 PGN-EDO51 MAD Study



## CONNECT2 Study Overview

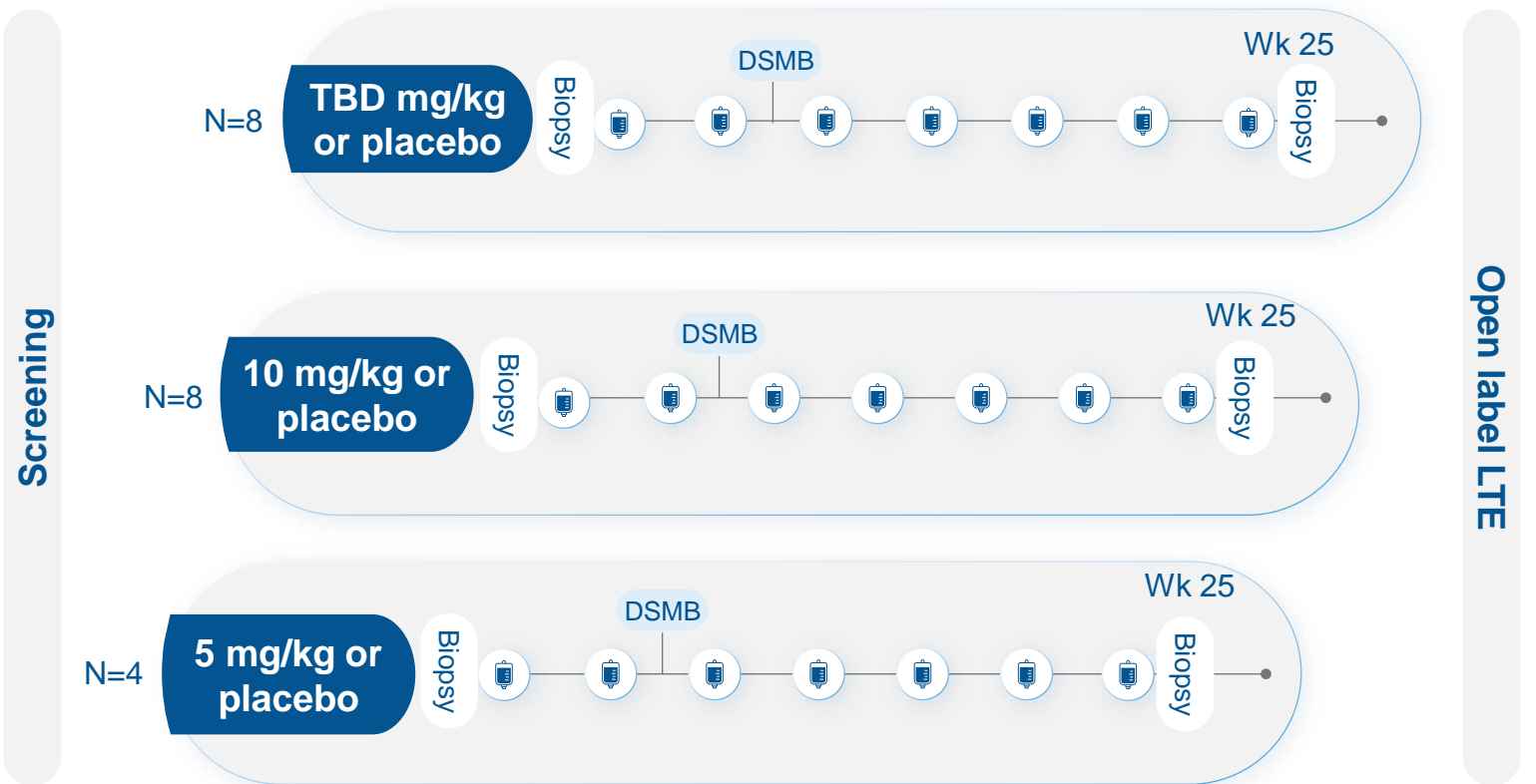
Multinational, randomized, double-blind, placebo-controlled trial

IV administration of PGN-EDO51 or placebo every 4 weeks

Muscle biopsies in biceps at baseline and week 25

Key endpoints: Safety biomarkers, dystrophin, exon skipping, North Star Ambulatory Assessment (NSAA), Time to stand from supine, Performance of Upper Limb

## PGN-EDO51 Dosing Q4W for Treatment Period of 24 weeks Prior to Rolling over into LTE Trial (randomized 3:1)





## Conclusion

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# Key Readouts Starting in Q1 2025 with Existing Cash Funding Planned Operations into 2026

## Key expected data readouts/milestones

### PGN-EDODM1 DM1

- FREEDOM 5 mg/kg and 10 mg/kg clinical results by end of Q1 2025
- FREEDOM 15 mg/kg clinical results in 2H 2025
- FREEDOM2 first participant dosed in Q4 2024

### PGN-EDO51 DMD Exon 51

- CONNECT1 10 mg/kg clinical results by year-end 2025
- CONNECT2
  - Currently open in UK
  - Engaging with EU regulators
  - Received clinical hold notice December 2024 from US FDA