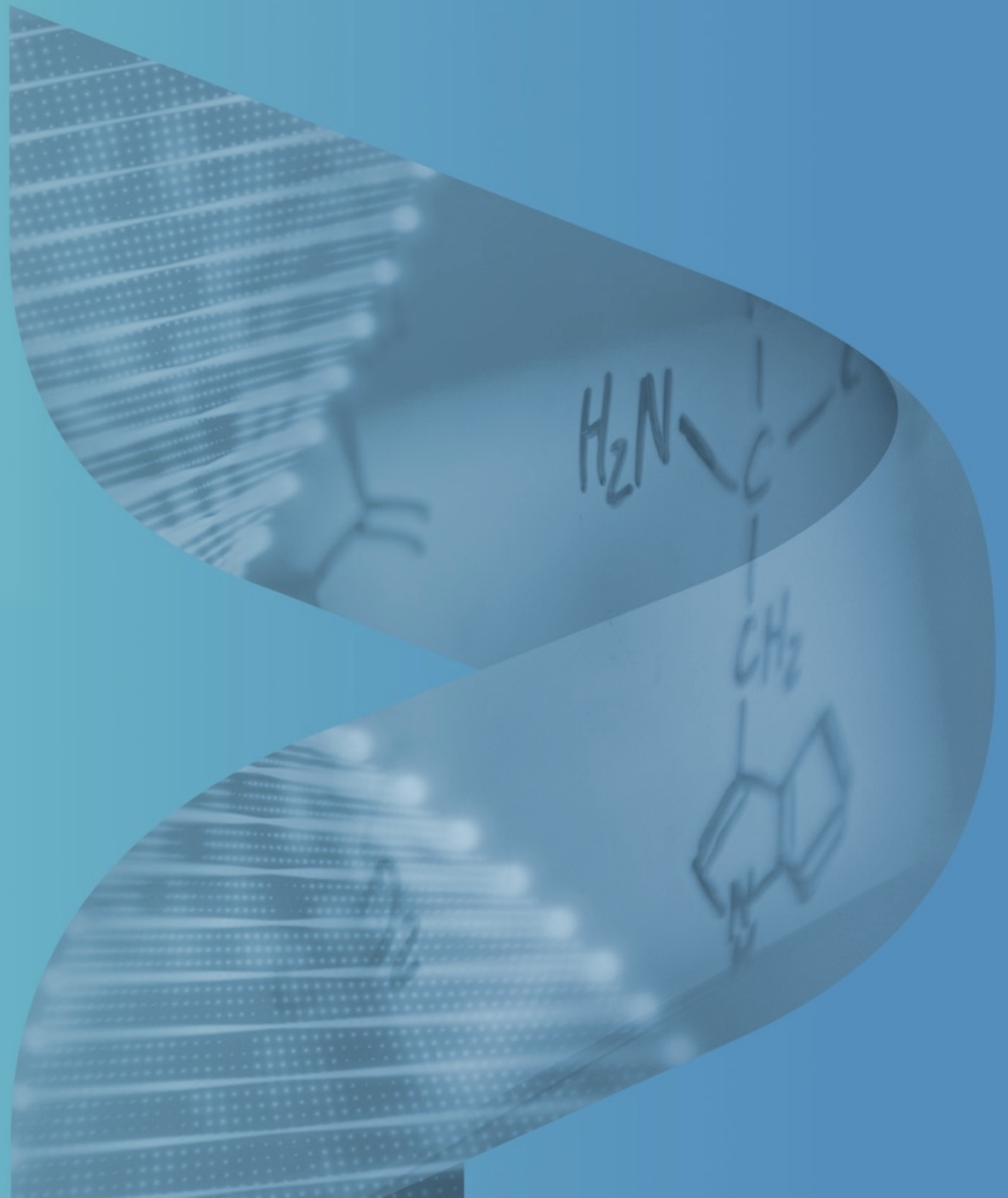
PepGen™

FREEDOM2-DM1
5 mg/kg MAD Cohort
Data Update

March 2026



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,” “on track,” “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 various data demonstrating promising results that support the safety and clinical potential of PGN-EDODM1 as a treatment for DM1 and expected timing of clinical data from the 10 mg/kg multiple dose cohort for PGN-EDODM1, our cash runway, the design, initiation and conduct of clinical trails, including expected timelines for our FREEDOM2-DM1 trial, and ongoing and planned regulatory interactions.

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-EDODM1; our ability to enroll patients in our clinical trials, including 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-EDODM1; our product candidates, including 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 FREEDOM2 clinical trial; 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 filings 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-EDODM1, an investigational therapy, that has 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-EDODM1 or any other investigational therapy will successfully complete clinical development or gain regulatory authority approval.

Agenda

James McArthur, PhD
President and Chief Executive Officer
Key Takeaways, Platform, Closing Remarks, and Q&A

Paul Streck, MD, MBA
Head of R&D
FREEDOM2 Clinical Trial Design, Clinical Data, and Q&A

Myotonic Dystrophy Type 1 Overview and EDO Platform

PGN-EDODM1 5 mg/kg MAD Lowest Dose Demonstrates Promising Safety, Splicing and vHOT

Safety and efficacy results are supportive of the ongoing dosing in 10 mg/kg MAD cohort

SAFETY & TOLERABILITY	• PGN-EDODM1 was generally well-tolerated; all AEs were mild or moderate in severity, with no SAEs or cumulative toxicity with repeat dosing observed
SPLICING & FUNCTIONAL DATA:	• Mean splicing correction of 7.3% with PGN-EDODM1 (n=6) vs 6.8% placebo (n=2) • Analysis excluding one notable splicing outlier demonstrated mean splicing correction of 22.9% (n=5) • Promising trends observed in vHOT in PGN-EDODM1 treated group

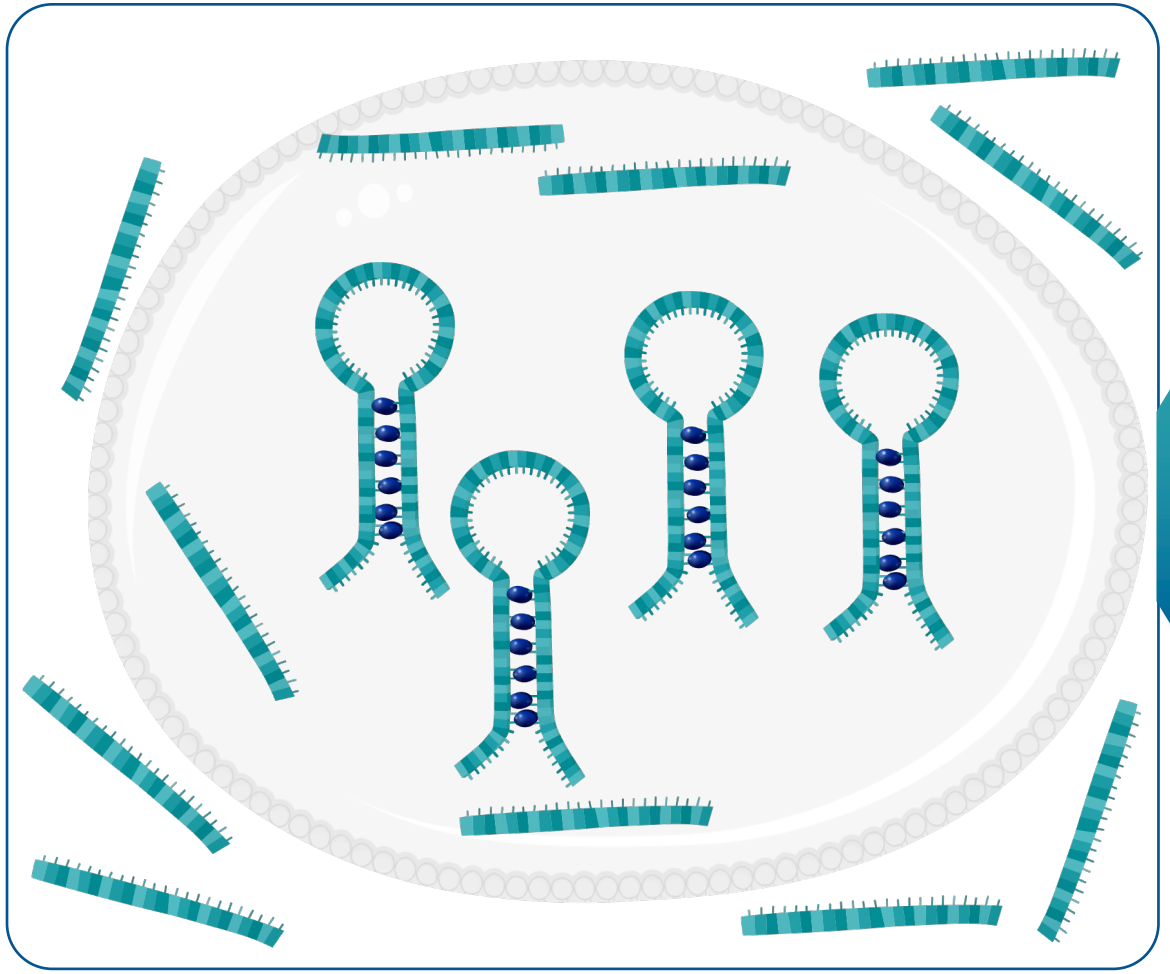
Company on track to report clinical data from 10 mg/kg multiple dose cohort in 2H 2026

Data cutoff date: 04 March 2026
AE: Adverse event; SAE: Serious adverse event

DM1 is Caused by Pathogenic CUG Repeats in *DMPK* RNA

DM1 is caused by pathogenic *DMPK* transcripts

- Approximately 50% of *DMPK* transcripts are pathogenic while the remaining *DMPK* transcripts are normal[1]
- Pathogenic *DMPK* transcripts containing cytosine-uracil-guanine (CUG) repeat sequences form hairpin loops
- These hairpin loops trap MBNL1 proteins
- MBNL1 is a splicing factor required for processing multiple RNAs into proteins accurately



Trapped MBNL1 is inactive and results in mis-splicing

DMPK transcript Bound MBNL1 (inactive)

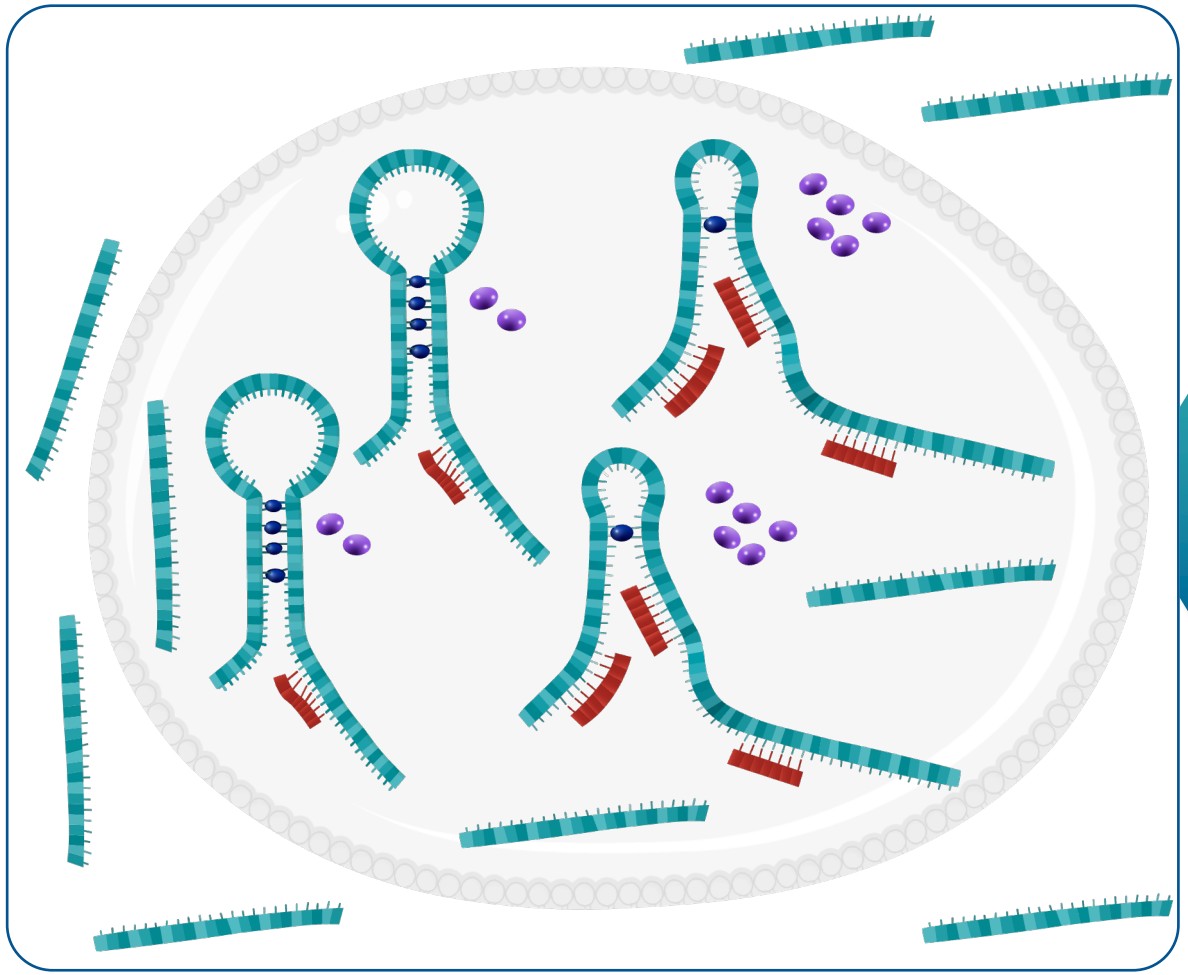
PepGen™

1. Wojciechowska, et al., Quantitative Methods to Monitor RNA Biomarkers in Myotonic Dystrophy, *Nature*, April 12, 2018

PGN-EDODM1 Blocking Approach Targets Only the Pathogenic *DMPK* RNA

PGN-EDODM1 binds selectively to the pathogenic *DMPK* transcript

- PGN-EDODM1 is engineered to bind selectively to the pathogenic CUG repeat expansion present in *DMPK* transcript
- This reduces the ability of these CUG repeats to form hairpin loops and sequester RNA splicing proteins, including MBNL1, in the nucleus

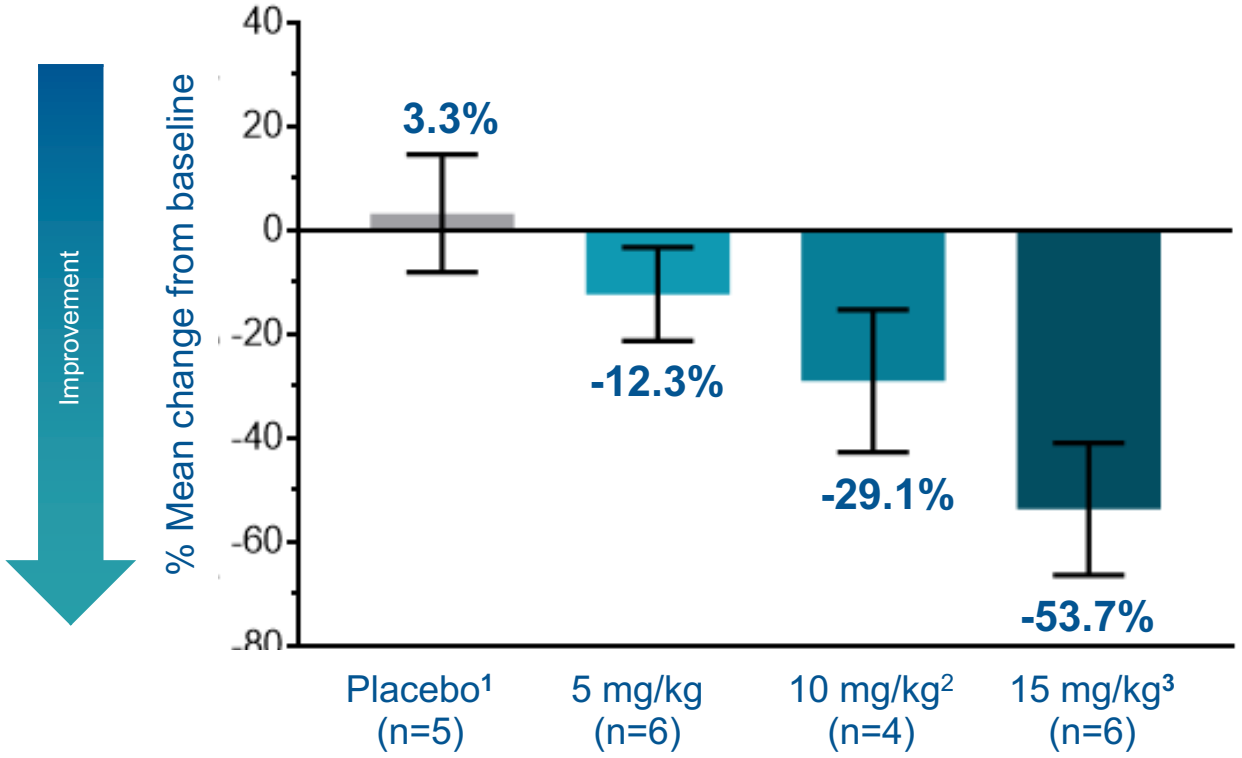


Liberated MBNL1 restores correct splicing

PGN-EDODM1 | Bound MBNL1 (inactive) | Free MBNL1 (active)

FREEDOM SAD Study: PGN-EDODM1 Produced Dose-Dependent Best-in-Class Splicing Correction Following Single Dose

FREEDOM SAD Study: Splicing Index Changes (22-Gene Panel* at D28)



1.Missing samples due to unavailability of biopsy tissue or sample outside of assay window.
2.One subject at 10 mg/kg biopsy was not collected at day 28 due to pseudoaneurysm in connection with biopsy and one participant's splicing index fell below the pre-specified assay range at baseline and at day 28 (indicating no detectable mis-splicing)
3.One subject at 15mg/kg received 77% of the dose and was still included in the splicing index change analysis for the cohort
*Provenzano et al., The Splice Index as a prognostic biomarker of strength and function in myotonic dystrophy type 1,J Clin. Invest. 2025

FREEDOM2-DM1
5 mg/kg MAD Cohort

Overview and Results

FREEDOM2 Phase 2 MAD Study Design

Freedom 2 DM1

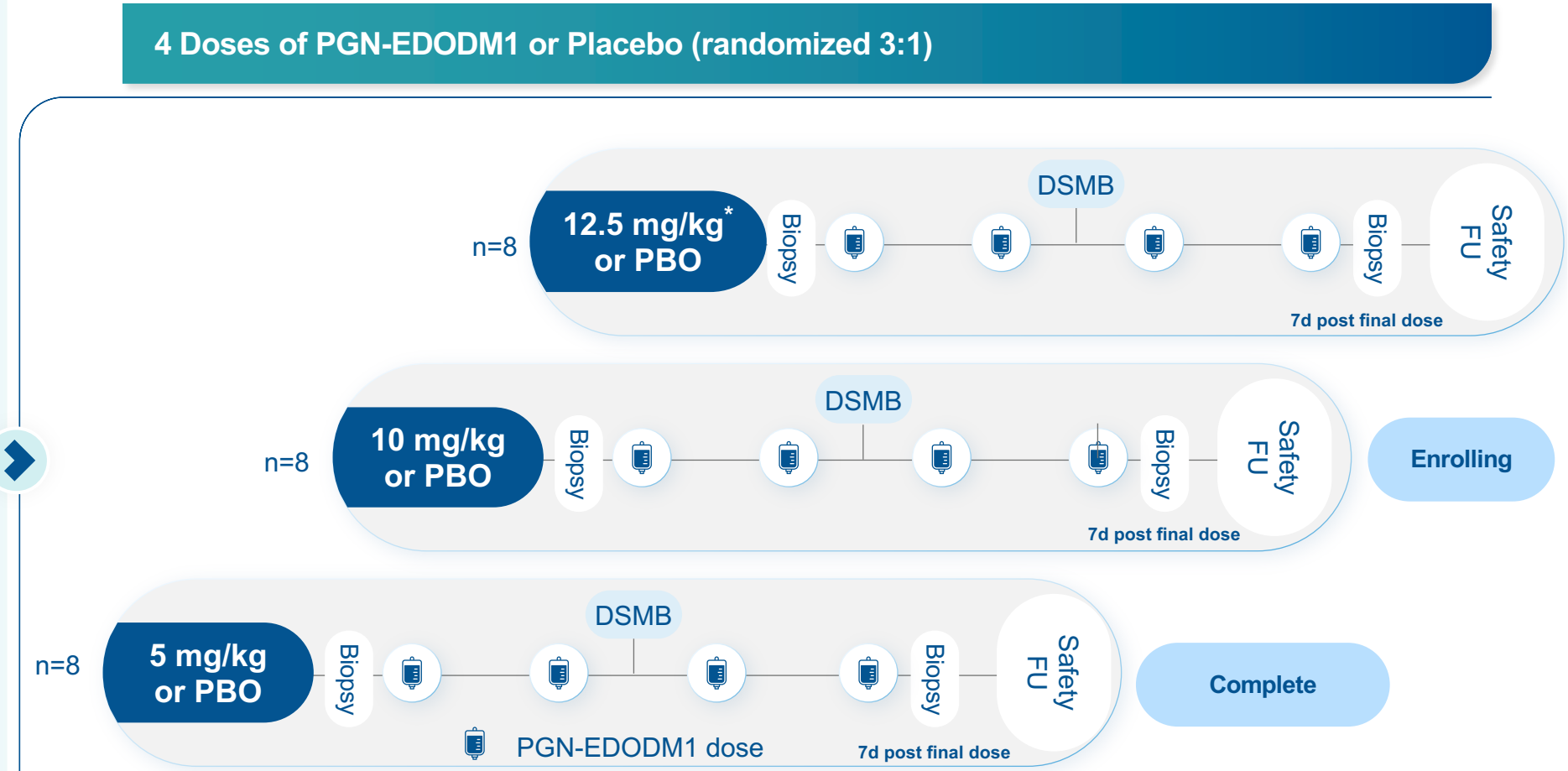
FREEDOM2 Study Overview

Multinational, randomized, double-blind, placebo-controlled, MAD study open in Canada, UK, NZ, Australia and South Korea**

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

FREEDOM-OLE open in CA and UK for patients in FREEDOM & FREEDOM2



DSMB: data safety monitoring board; FU: follow-up; IV: intravenous; MAD: multiple-ascending dose; PBO: placebo; PK: pharmacokinetics; vHOT: video hand opening test; OLE: open label extension

* Dose dependent on recommendations of DSMB

**The U.S. FDA recently placed a partial clinical hold on FREEDOM2-DM1

FREEDOM2:
Demographics and Baseline Characteristics for 5 mg/kg MAD Cohort

	5 mg/kg (n=8) Mean (SD) or n (%)
Age (years)	32.5 (6.0)
Female, n (%)	2 (25.0)
BMI (kg/m^2)	24.8 (5.0)
Splicing Index	69.2 (17.3)
vHOT – mean, middle finger (sec)	10.3 (8.3)
CTG Repeats	603 (301)

Favorable Emerging Safety Profile of PGN-EDODM1; No Increase in Toxicity with Multiple Doses

Summary of Treatment Emergent Adverse Events (TEAEs)[1]	5 mg/kg (n=8) n(%)
Any TEAE	7 (87.5)
Mild	4 (50.0)
Moderate	3 (37.5)
Severe	0 (0.0)
Any SAE	0
Any related SAE	0
Any AESI or dose-limiting toxicities	0
Any TEAE leading to study withdrawal	0
Any TEAE leading to death	0

PGN-EDODM1 was Generally Well-Tolerated, with All AEs Mild or Moderate in Severity[1]

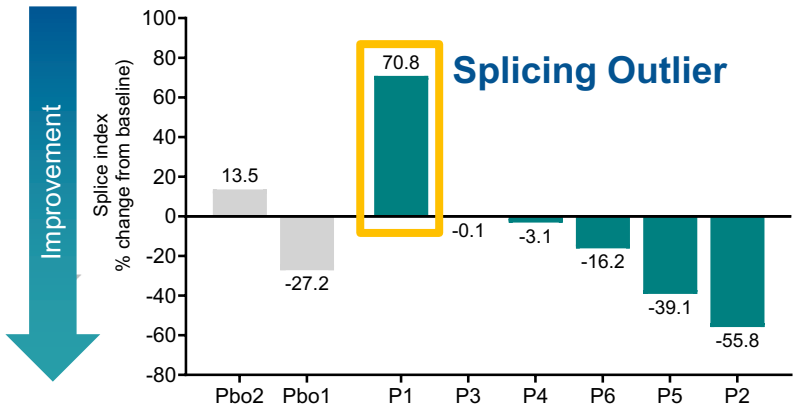
- All participants completed all 4 doses, with no evidence of cumulative AEs
- The overall AE profile of MAD 5 mg/kg is consistent with that observed in SAD 5 mg/kg
- Nausea was the most common AE
- No SAEs, AESIs, or DLTs and no signs of hypersensitivity
- No kidney TEAEs
  - eGFR and creatinine measurements within the normal range
  - Transient albuminuria observed – did not increase with repeat dosing

1. Data cutoff date: 04 March 2026
AE: Adverse event; AESI: Adverse event of special interest; DLT: Dose limiting toxicities; SAE: Serious adverse event; TEAE: Treatment emergent adverse event; eGFR: estimated Glomerular Filtration Rate

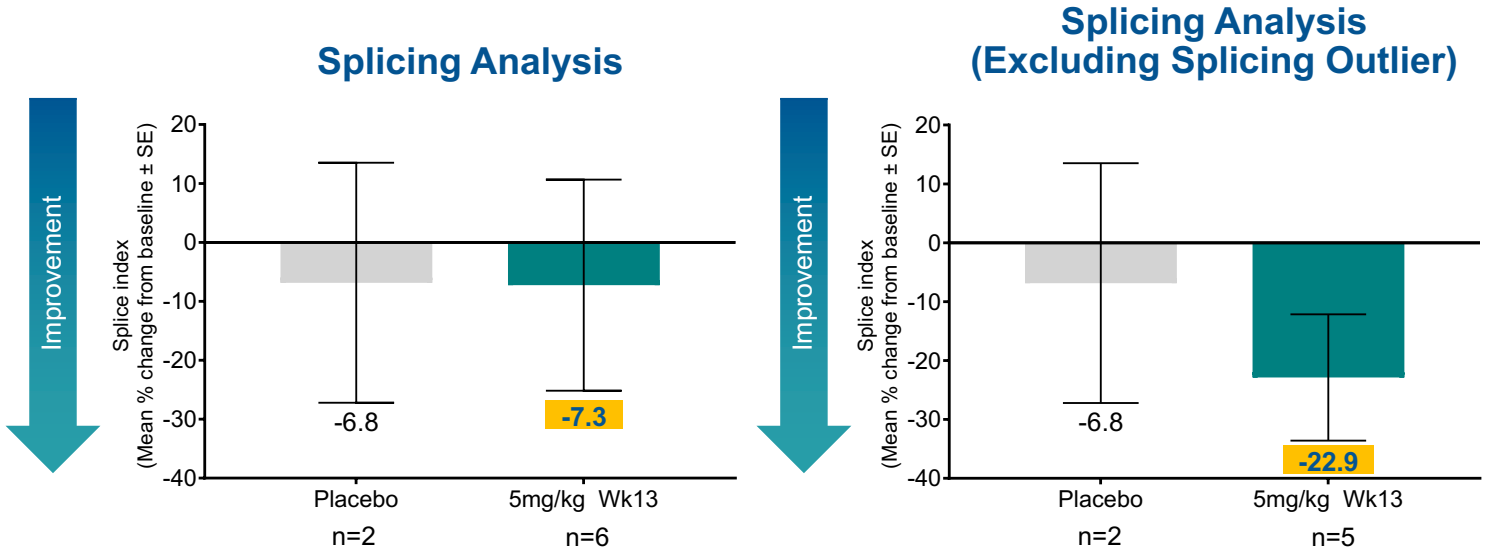
FREEDOM2 5 mg/kg Splicing Correction*

- Mean splicing correction of 7.3% with PGN-EDODM1 (n=6)
- Excluding notable splicing outlier, mean splicing correction of 22.9% (n=5)

5 mg/kg Individual Splicing Data



5 mg/kg Collective Splicing Data

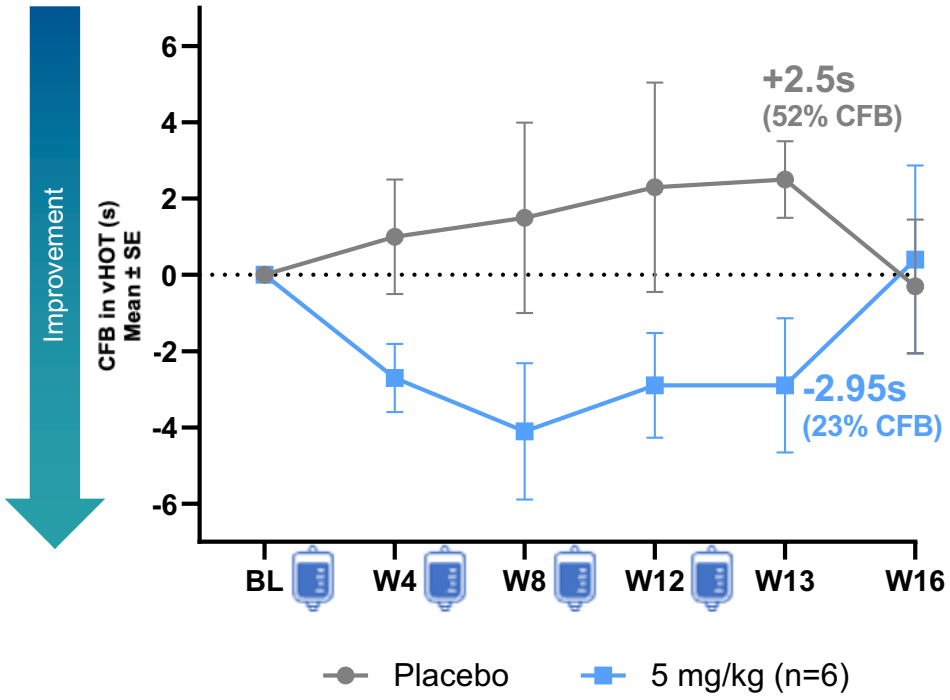


High mean muscle tissue concentration of PGN-EDODM1 of 158 ng/g at Day 7 post-dose (n=5)**

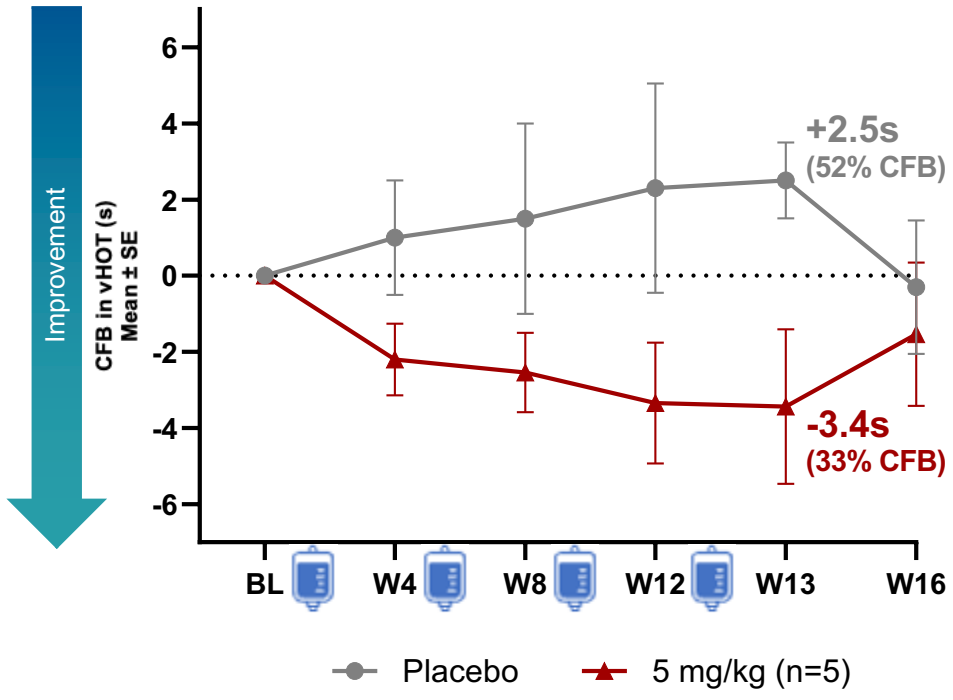
*Data cutoff date: 04 March 2026
**One patient's muscle tissue concentration reading was pending at cutoff date.

FREEDOM2 5 mg/kg Myotonia (vHOT): PGN-EDODM1 Shows Promising Middle Finger vHOT Trends at Lowest Dose

vHOT Analysis



vHOT Analysis Excluding Splicing Outlier



CFB: Change from baseline; SE: Standard error
Data cutoff date: 04 March 2026

Promising Safety, Splicing and vHOT Data in FREEDOM2 Lowest Dose – Supports Ongoing 10 mg/kg MAD Cohort

FREEDOM2 5 mg/kg MAD Cohort

SAFETY:

- PGN-EDODM1 was generally well-tolerated; all AEs mild-to-moderate, no SAEs, and no signs of cumulative toxicity
- No kidney related TEAEs

SPLICING & vHOT:

- Strong splicing correction at lowest dose when outlier is excluded
- vHOT trends observed - suggesting higher doses with repeat dosing may drive further improvements

PHASE 2 FREEDOM2 MAD & OLE

- Company has **dosed 5 of 8 patients** in the 10 mg/kg MAD cohort of FREEDOM2 with up to 3 doses of PGN-EDODM1
- **12 patients** have enrolled in the FREEDOM-**OLE** at 5 mg/kg, including 5 patients from FREEDOM2

GUIDANCE:

- **H2 2026:** FREEDOM2 10 mg/kg clinical results

Cash runway expected into **H2 2027**

Question and Answer Session

James McArthur, PhD
President and Chief Executive Officer

Paul Streck, MD, MBA
Head of R&D

Noel Donnelly, MBA
Chief Financial Officer

Thank you