



PRA~~X~~IS

# ***DARE FOR MORE***<sup>®</sup>

**CORPORATE OVERVIEW**

November 2024



# Forward-looking statements

This presentation may contain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995 relating to our business, operations, and financial conditions, including but not limited to express or implied statements regarding the current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, statements regarding the estimated market for our product candidates, if approved, our development plans, our preclinical and clinical results and other future conditions, including our cash runway, and the safety, efficacy, and regulatory and clinical design or progress, potential regulatory submissions, approvals and timing thereof of any of our product candidates. Any forward-looking statements in this presentation are based on management’s current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this presentation, including, without limitation, risks relating to: (i) the success and timing of our ongoing clinical trials, (ii) the success and timing of our product development activities and initiating clinical trials, (iii) the success and timing of our collaboration partners’ product development activities, (iv) the timing of and our ability to obtain and maintain regulatory approval of any of our product candidates, (v) our plans to research, discover and develop additional product candidates, (vi) our ability to enter into collaborations for the development of new product candidates, (vii) our ability to establish manufacturing capabilities, and our collaboration partners’ abilities to manufacture our product candidates and scale production, (viii) our ability to meet any specific milestones set forth herein, and (ix) the potential addressable market sizes for product candidates. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. Although we believe the expectations reflected in such forward-looking statements are reasonable, we can give no assurance that such expectations will prove to be correct. Accordingly, readers are cautioned not to place undue reliance on these forward-looking statements.

For further information regarding the risks, uncertainties and other factors that may cause differences between our expectations and actual results, you should review the “Risk Factors” section of our Annual Report on Form 10-K for the year ended December 31, 2023 filed with the Securities and Exchange Commission (“SEC”) and our other filings with the SEC.

Certain information contained in this presentation relates to or is based on studies, publications, surveys and other data obtained from third-party sources and our own internal estimates and research. While we believe these third-party sources to be reliable as of the date of this presentation, we have not independently verified, and make no representation as to the adequacy, fairness, accuracy or completeness of, any information obtained from third-party sources. In addition, all of the market data included in this presentation involves a number of assumptions and limitations, and there can be no guarantee as to the accuracy or reliability of such assumptions. Finally, while we believe our own internal research is reliable, such research has not been verified by any independent source.

Praxis is positioned to bring more innovation to patients

**4**

**Assets in late stage**

**>\$9B**

**Commercial opportunity across the portfolio**

**5**

**High value clinical readouts within the next eighteen months**

**2**

**Discovery platforms to optimize drug development**

*into*  
**2027**

**Cash runway**

# Four pillars guide how we develop medicines



## GENETICS

Focus on therapeutic targets identified through human genetics



## TRANSLATIONAL TOOLS

Translational tools validate potential of target and product candidate and can provide early proof of biology



## EFFICIENT & RIGOROUS

Efficient, rigorous clinical development paths to proof-of-concept in humans applying an agile way of working



## PATIENT-GUIDED

Patient-guided development strategies to deliver on what patients actually need



# Two platforms to generate optimized therapies for defined patient populations

## CEREBRUM™

### SMALL MOLECULE PLATFORM

Cerebrum™ utilizes deep understanding of neuronal excitability and neuronal networks and applies a series of computational and experimental tools to develop orally available precision therapies



Molecule	Indication	Mechanism
<i>ulixacaltamide</i>	Essential Tremor	T-type calcium channel modulator
<i>vormatrigine</i>	Focal Onset Seizures & Generalized Epilepsy	Sodium channel functional state modulator for broad use
<i>relutrigine*</i>	DEE Epilepsies	Sodium channel functional state modulator for pediatric use
<i>PRAX-020<sup>^</sup></i>	KCNT1 Epilepsy	KCNT1 specific inhibitor
<i>PRAX-050</i>	Not disclosed	Not disclosed

## SOLIDUS™

### ANTISENSE OLIGONUCLEOTIDE (ASO) PLATFORM

Solidus™ is an efficient, targeted precision medicine discovery and development engine for ASOs anchored on proprietary, computational methodology



Molecule	Indication	Mechanism
<i>elsunersen**</i>	SCN2A GoF	Gapmer ASO
<i>PRAX-080<sup>†</sup></i>	PCDH19 Mosaic expression	Gapmer ASO
<i>PRAX-090<sup>†</sup></i>	SYNGAP1 LoF	Splice switching ASO
<i>PRAX-100<sup>†</sup></i>	SCN2A LoF	Splice switching ASO

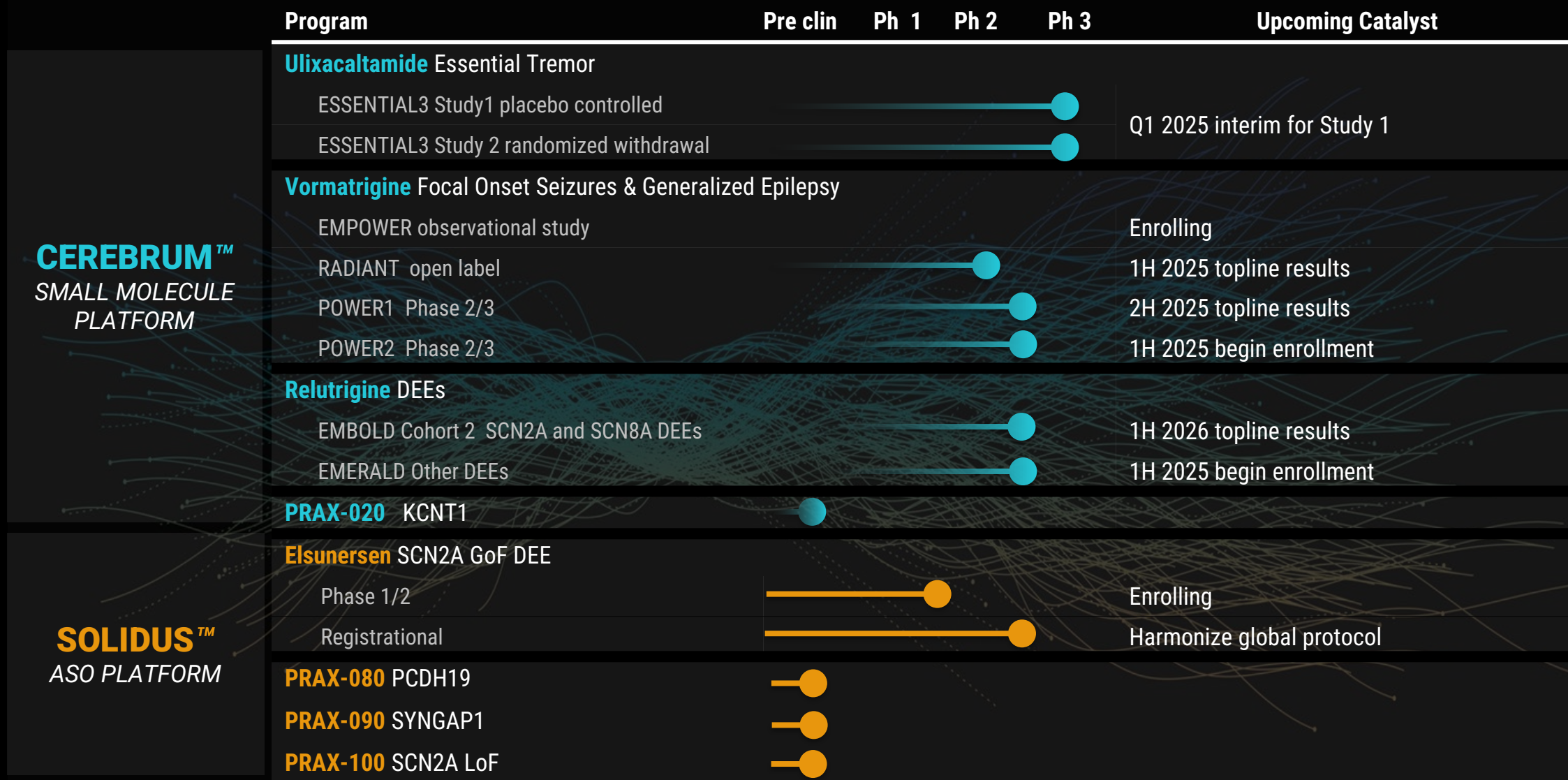
<sup>^</sup>PRAX-020 (KCNT1) is a research collaboration with UCB

<sup>†</sup>PRAX-080 (PCDH19), PRAX-090 (SYNGAP1) & PRAX-100 (SCN2A-LoF) ASOs are a collaboration with The Florey Institute of Neuroscience and Mental Health

\* Relutrigine has received ODD and RPD from the FDA, and ODD from the European Medicines Agency for the treatment of SCN2A-DEE and SCN8A-DEE

\*\* Elsunersen has received ODD and RPD from the FDA, and ODD and PRIME designations from the European Medicines Agency (EMA) for the treatment of SCN2A-DEE

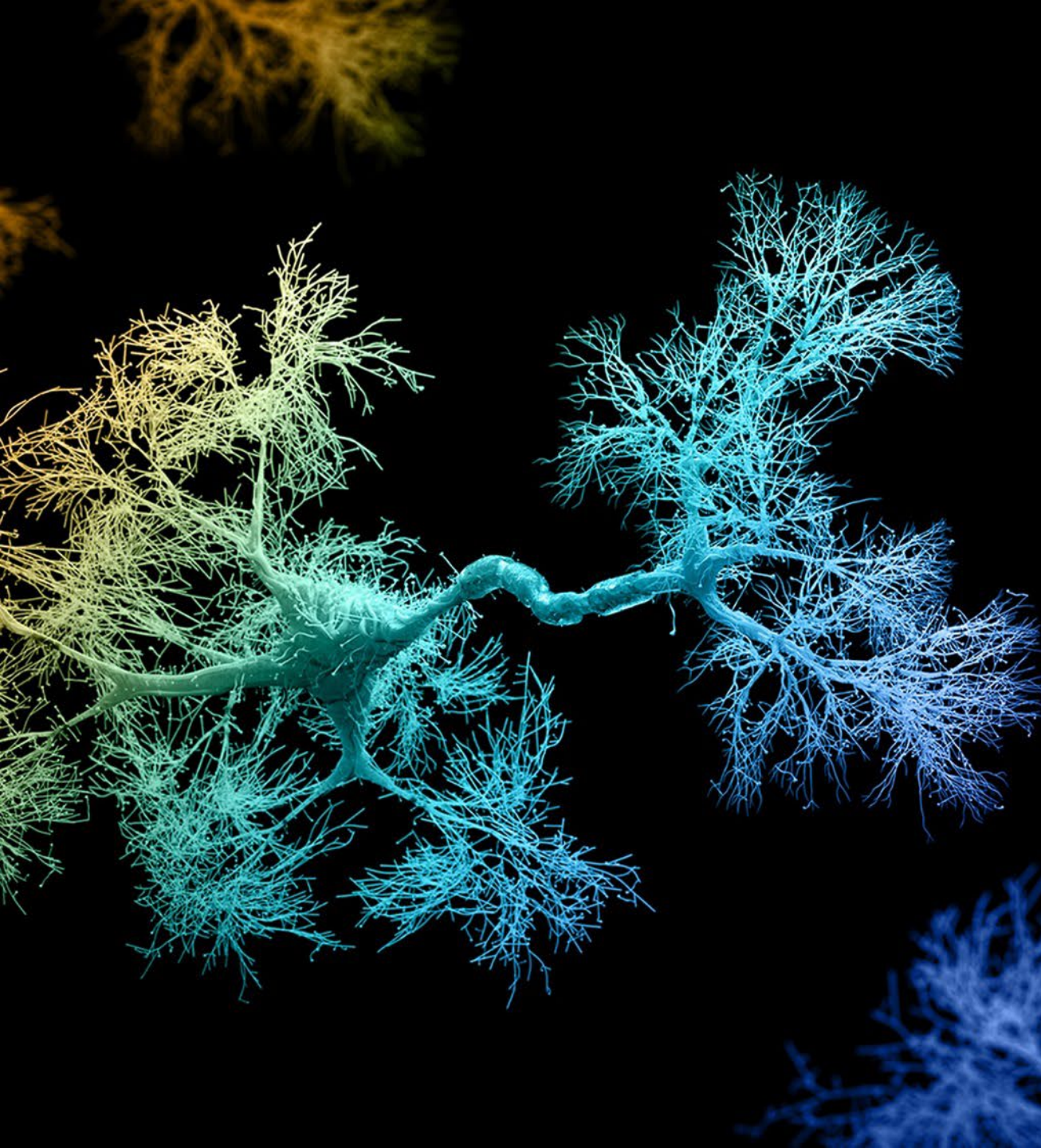
# Four clinical stage assets and multitude of early-stage programs



\*PRAX-020 (KCNT1) is a research collaboration with UCB

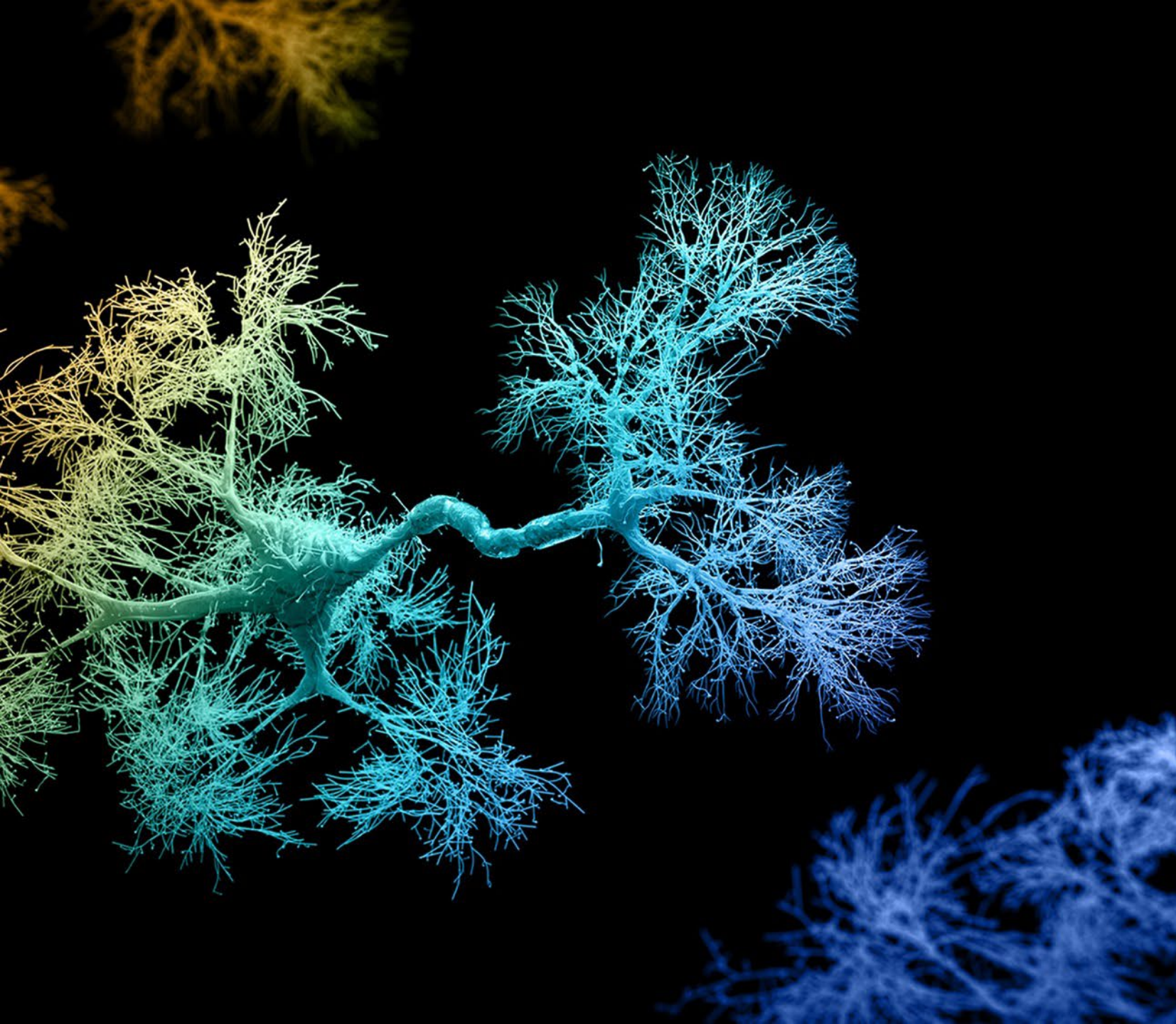
\*PRAX-080 (PCDH19), PRAX-090 (SYNGAP1) & PRAX-100 (SCN2A-LoF) ASOs are a collaboration with The Florey Institute of Neuroscience and Mental Health





**CEREBRUM™**  
*SMALL MOLECULE PLATFORM*





# Ulixacaltamide

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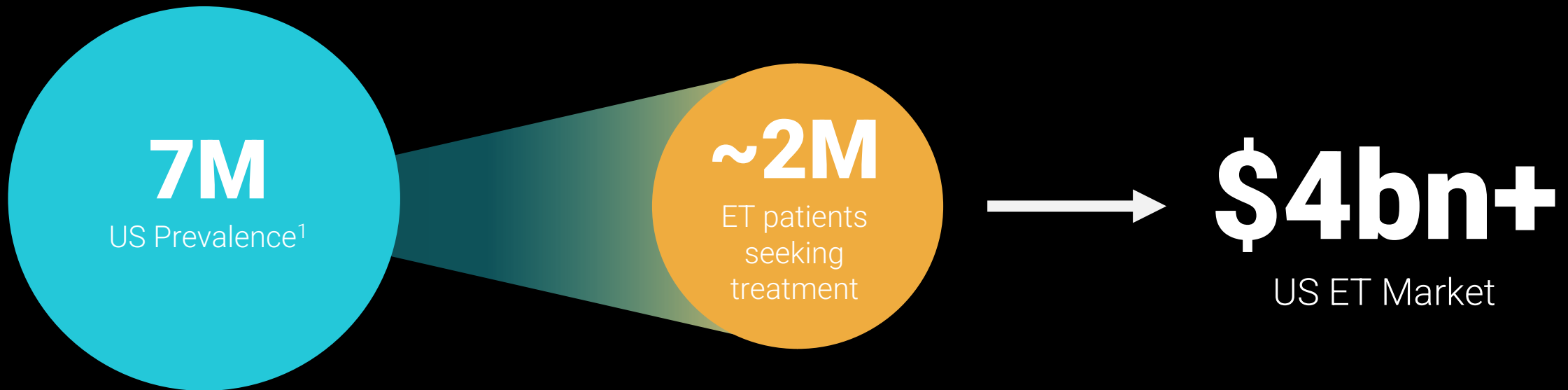
## Milestones

Q1 2025: Study 1 interim analysis

2025: NDA filling



# Essential tremor market is significantly underserved and ready for disruption



- Essential Tremor (ET) is the most prevalent movement disorder
- People with ET experience significant disturbance of their daily activities
- Hallmark feature of ET is action tremor that primarily affects the hands<sup>2,3</sup>
- Almost all ET patients suffer from at least one comorbid condition (e.g., depression, anxiety, sleep disorders, cognitive dysfunction)<sup>4</sup>

Vast majority of patients are left without any treatment option

- <30% of patients are eligible to receive propranolol due to other medications/health conditions
- Of those who start propranolol >50% discontinue after only 1 month
- Of those who start propranolol <20% still receive propranolol after 2 years

1. Louis ED, Ottman R. Tremor Other Hyperkinet Mov (N Y). 2014;4:259. 2. Elble RJ. Curr Neurol Neurosci Rep. 2013 Jun;13(6):353. 3. Putzke JD, et al. J Neurol Neurosurg Psychiatry. 2006 Nov;77(11):1235-7. 4. Vetterick, C., Lyons, K.E., Matthews, L.G. et al. The Hidden Burden of Disease and Treatment Experiences of Patients with Essential Tremor: A Retrospective Claims Data Analysis. Adv Ther (2022). <https://doi.org/10.1007/s12325-022-02318-8>

# Modified Activities of Daily Living 11 (mADL11) as Primary Endpoint

## 11 items from the well-established TETRAS ADL scale

Each item is individually scored, up to a total of 33

- 0** = Slightly abnormal. Tremor is present but does not interfere with \_\_\_.
- 1** = Mildly abnormal. Spills a little.
- 2** = Moderately abnormal. Spills a lot or changes strategy to complete task.
- 3** = Severely abnormal. Cannot drink from a glass or uses straw or sippy cup.



Speaking



Dressing



Using Keys



Hygiene



Pouring



Working



Writing



Drinking from a glass



Feeding with a spoon



Carrying food trays, plates or similar items



Overall disability with most affected task

## Each point reduction provides benefit to a patient's ability to perform regular activities

- Improvement based on regaining function
- ADL assessment performed by a physician
- Aligned with FDA as primary endpoint for Essential3 studies



# Surveys of >400 ET patients across the US highlight ongoing hidden burden of ET and associated challenges in managing everyday life

## ET burden has a profound impact on daily activities

Up to **80%**

of patients with ET reported needing to adjust how they complete daily tasks due to their symptoms

### Top Challenges:



working / attending social events



writing



drinking from a glass

## Patients with ET experience high psychosocial burden

Nearly all patients with ET experience a level of psychosocial burden, with many reporting feeling:



hopeless



ashamed



worried



frustrated



sad

## ET is inadequately managed and undertreated

Up to **77%**

of patients do not feel their ET symptoms are manageable with current treatments

Up to **50%**

of patients are not receiving treatment for their ET

# US neurologists emphasize the need for more effective treatments and the importance of patient-physician dialogue in ET

## ET burden has a profound impact on daily activities

>90%

of neurologists stated their patients' descriptions of their ET symptoms and impact on daily activities influence treatment decisions

## Patients with ET experience high psychosocial burden

60%

of neurologists reported **mental and emotional challenges** among the top three challenges for their ET patients

## ET is inadequately managed and undertreated

85%

of neurologist visits are for patients seeking ET treatment

40%

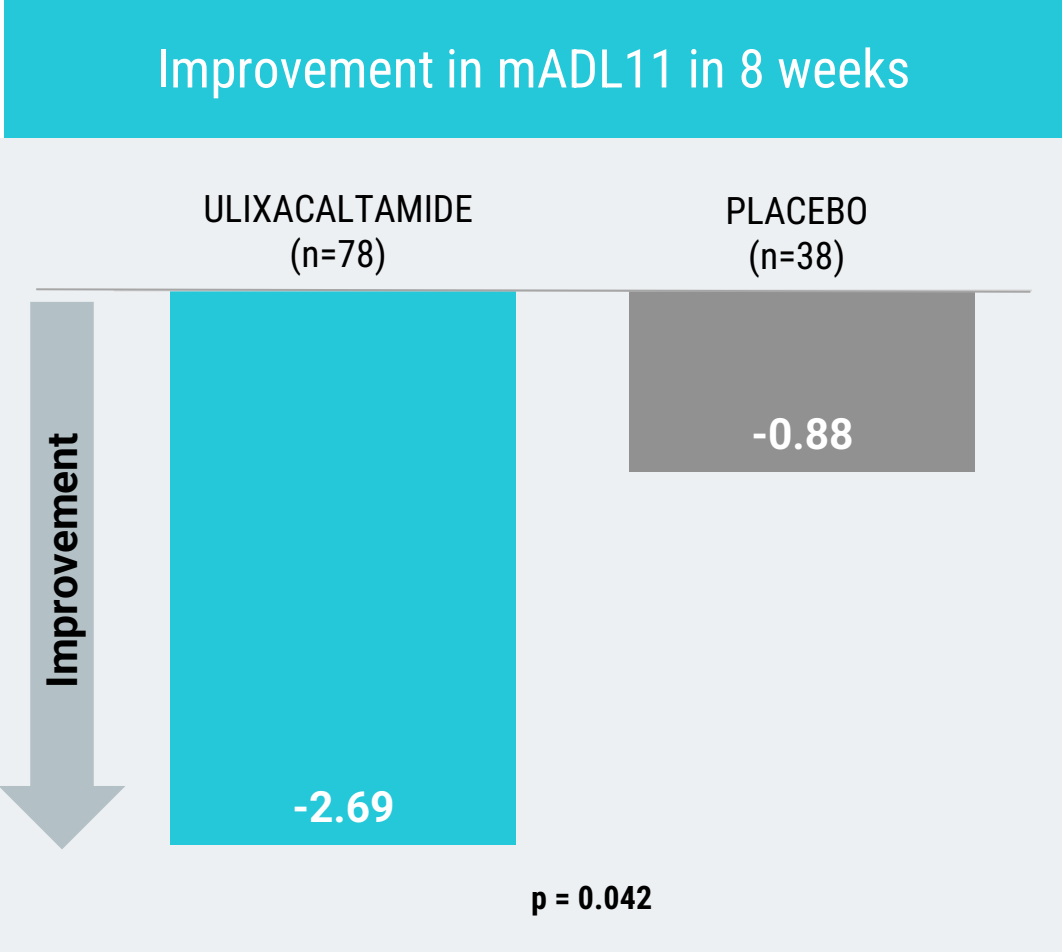
of patients seen by neurologists are not receiving treatment

Nearly 1/2

of neurologists rarely refer ET patients for specialist management



# Essential1 Phase 2b study set foundation for the Essential3 Phase 3 program



## Validated the clinical hypothesis

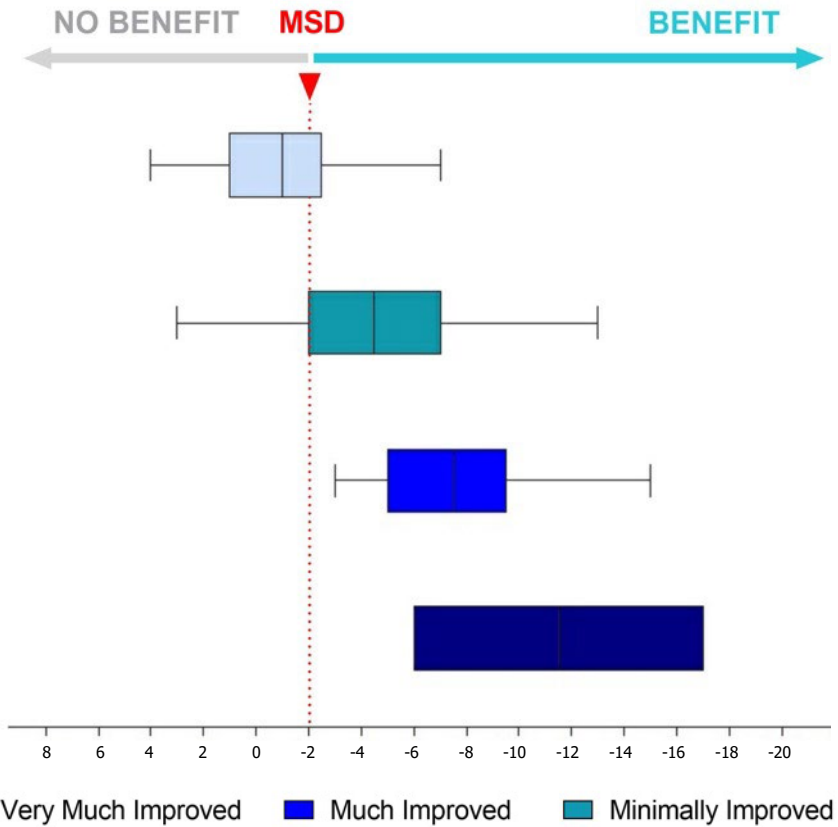
- Strong efficacy signal with robust endpoint (mADL11)
  - Early clinical benefit in 8-Week Study
  - Long-term, durable benefit
- Well-tolerated with a differentiated safety profile
- Tested Phase 3 design concepts

## Sets up a clear path to registration

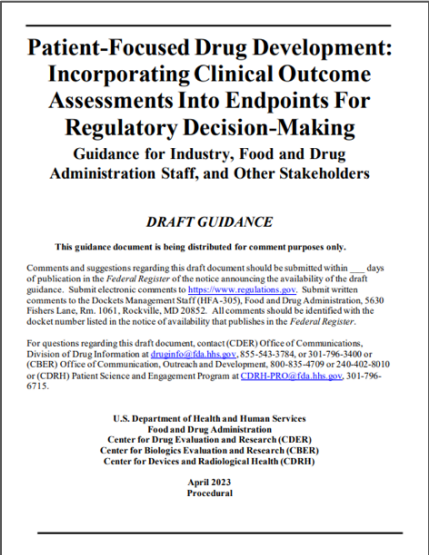
- Alignment with FDA on dose and primary endpoint
- Phase 3 program design structured around patient needs
- Robust recruitment strategy

# Using Essential1 to define clinical meaningfulness in essential tremor

## ESSENTIAL1 ANCHOR-BASED ASSESSMENT PGI-C:mADL11



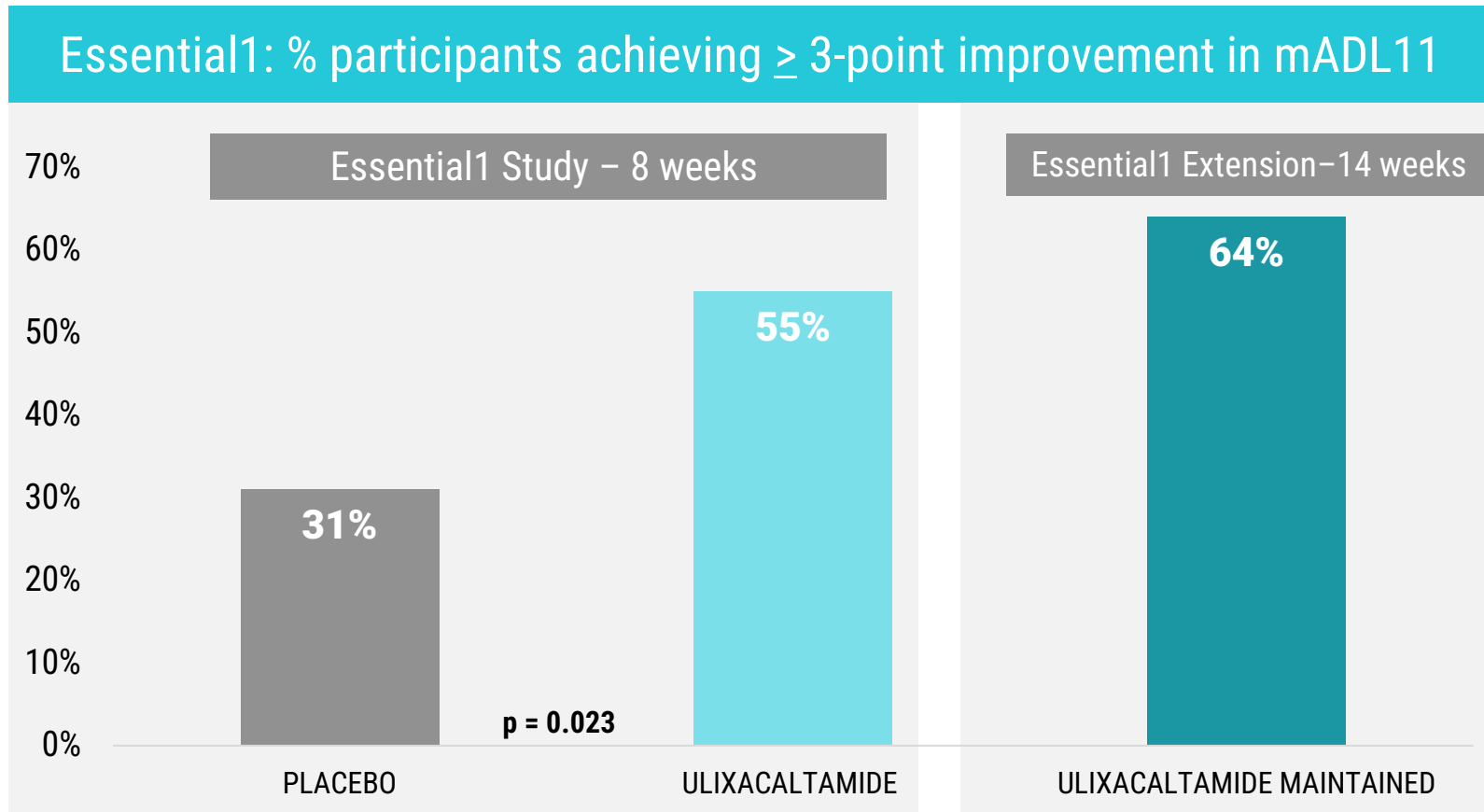
- Patient response on mADL11 endpoint was well-correlated to PGI-C response
- Aligned with recently issued guidance from Clinical Outcomes Assessment for novel endpoints



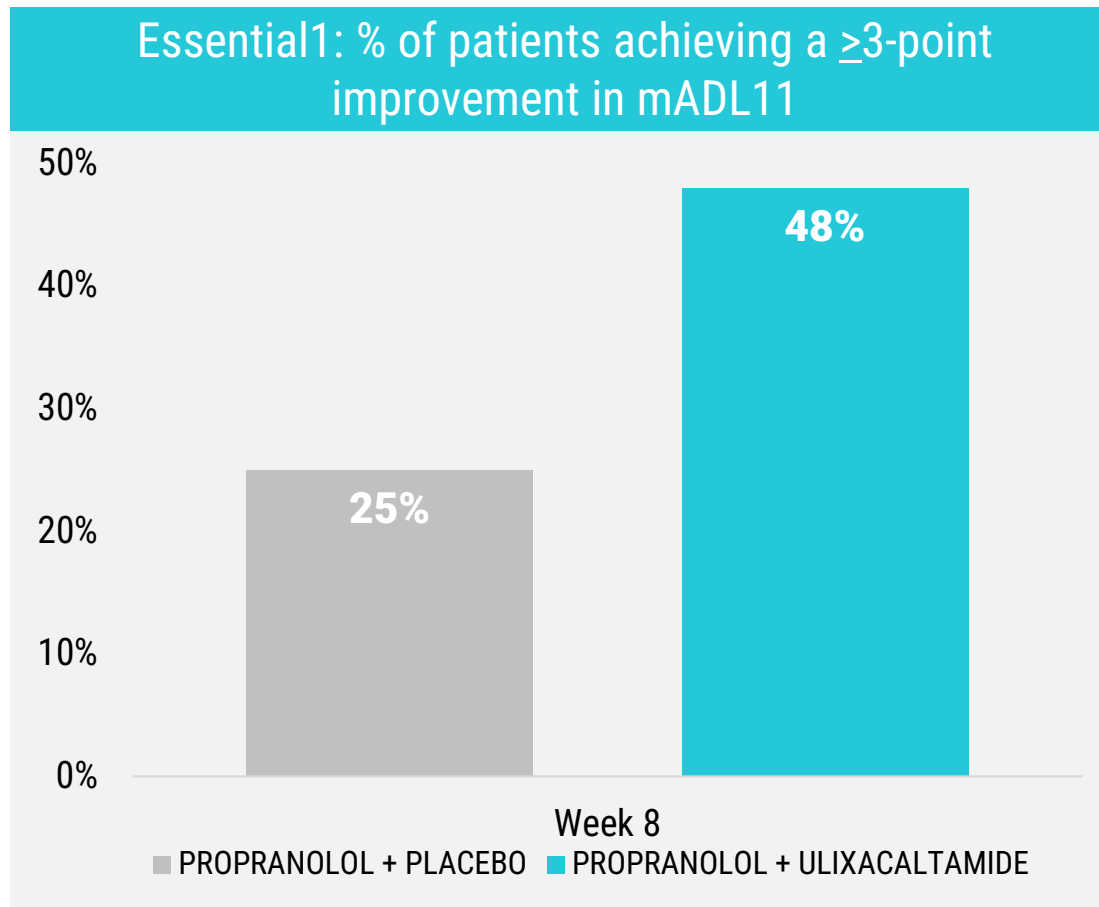
MSD=Meaningful Score Difference, PGI-C = Patient Global Impression of Change



Majority of patients achieved at least a 3-point change in mADL11 at 8 weeks  
*Durable response in extension study patients who continued through 14 weeks*



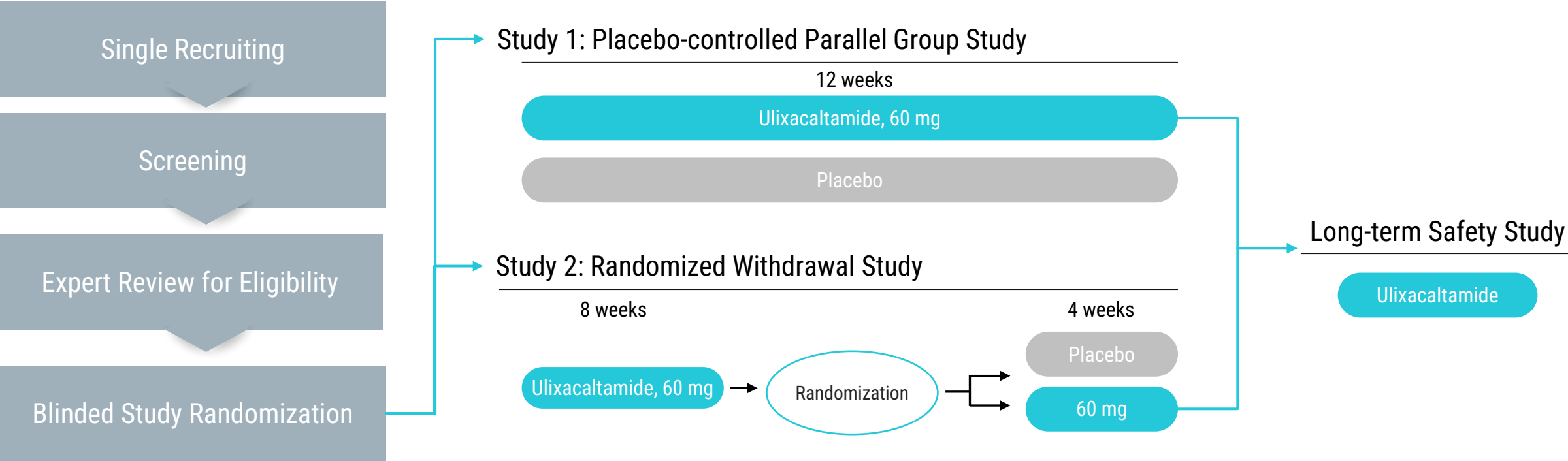
# Adding ulixacaltamide benefitted more patients on propranolol



Among patients who could tolerate propranolol, adding ulixacaltamide led to ~2-fold increase in the proportion achieving at least a 3-point improvement in mADL11



# Essential3: An innovative Phase 3 program that optimizes all aspects of study conduct



# Essential3 Program is well powered

Study	Study 1 – Parallel Design		Study 2 – Randomized Withdrawal	
Participants	400		200	
Primary endpoint and power	mADL11 Change from Baseline to Week 12 between ulixacaltamide and placebo <b>90% power to detect difference</b>		Difference in maintenance of response rate during the 4-week RW period between ulixacaltamide and placebo <b>90% power to detect difference</b>	
Stratification	Intention tremor status, family history, and propranolol use			

Main Secondary endpoints

- TETRAS-ADL
- CGI
- PGI



CGI = Clinical Global Impression (Severity); PGI = Patient Global Impression (Severity and Change)



# Path to success



## De-risked

Trial design based on key learnings from Essential1  
Regulatory alignment based on successful End-of-Phase 2 meeting



## High Quality and Efficient

Focused execution  
Single protocol: Optimized screening, enrollment, analysis  
Decentralized study to expand reach and reduce study burden to participants



## Interim Analysis

Increases optionality, including potential for sample size re-estimation



## Patient-driven Approach

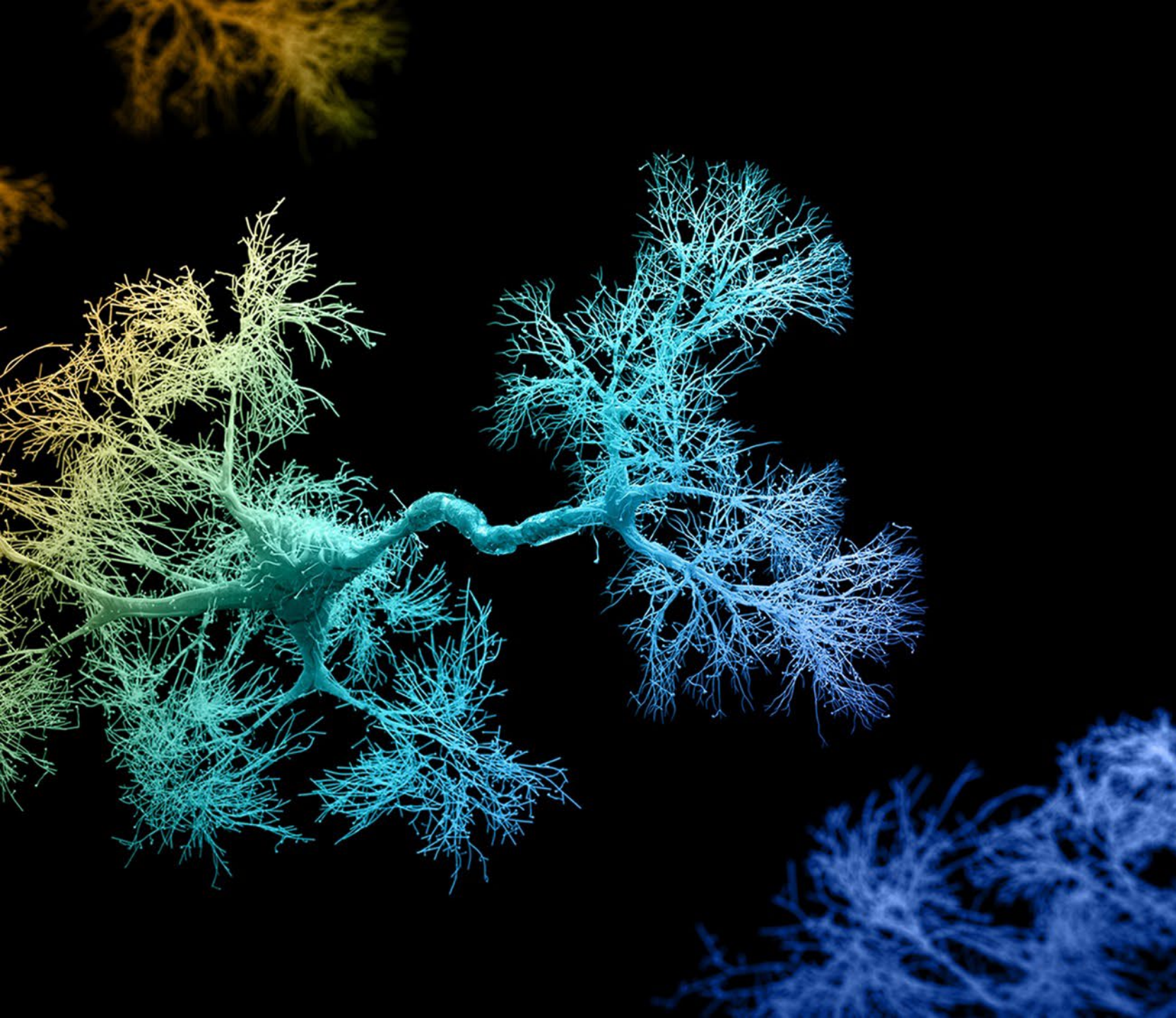
mADL11 as a clinically meaningful primary endpoint



## NDA Readiness

Clear path to filing in 2025





# Vormatrigine (PRAX-628)

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## Milestones

- 1H 2025: Topline results for RADIANT
- 1H 2025: Begin enrolling POWER2
- 2H 2025: Topline results for POWER1

The Praxis epilepsy portfolio targets significant unmet need in both the common and rare epilepsy markets

Praxis Epilepsy  
Portfolio

Vormatrigine

**3.5M**

**US Prevalence for Common  
Epilepsy**

**>\$2.5B+**

US Common Epilepsy Market Opportunity

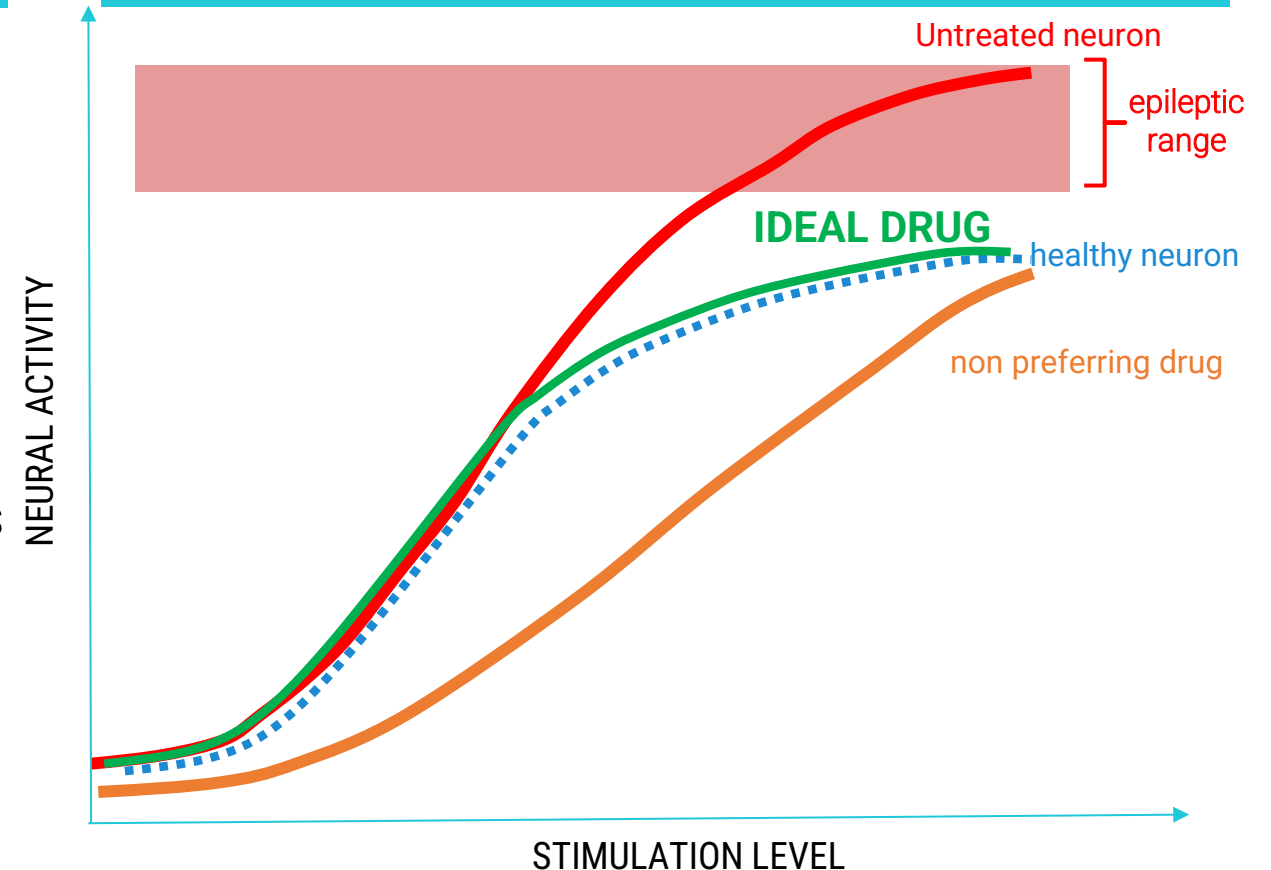
# Vormatrigine: Precision medicine therapeutic for focal onset seizures and generalized epilepsy

## Differentiated Profile

Next generation, functionally selective small molecule targeting the hyperexcitable states of sodium channels in the brain, with the potential to address limitations of current treatments

- Ideal safety/tolerability profile
- Achieves brain penetration
- Rapidly achieves therapeutic concentrations without titration
- Favorable half-life and PK profile
- Optimized efficacy

## Goal: Preferential action against neuronal hyperexcitability

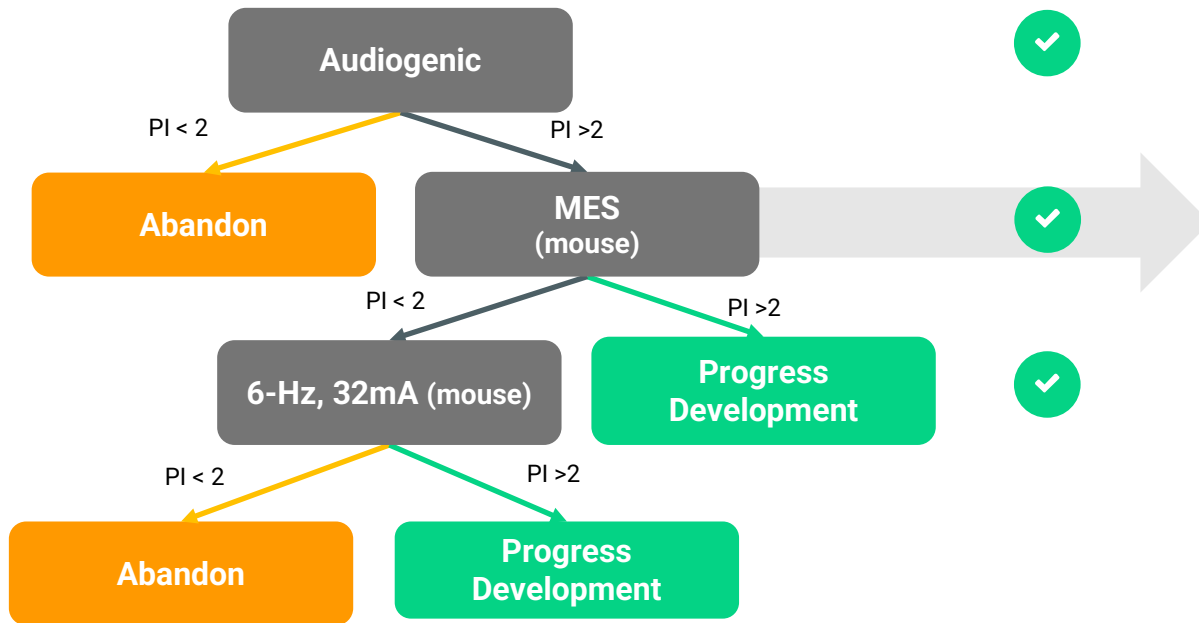




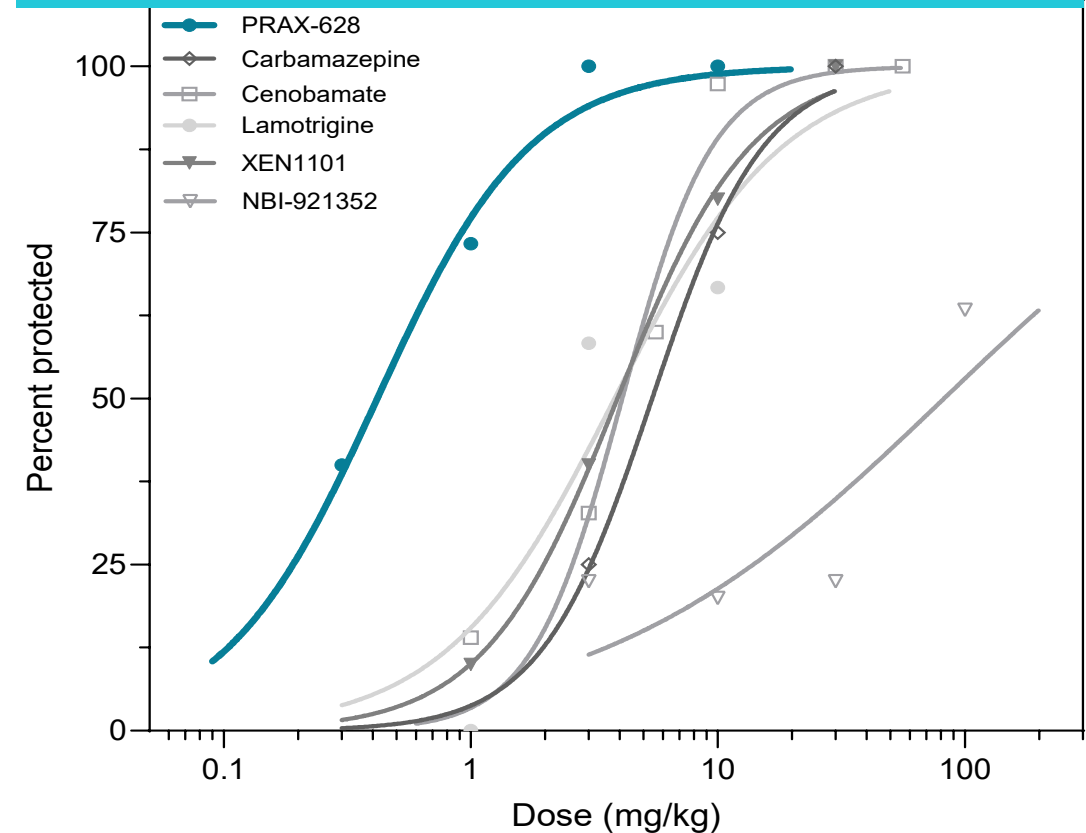
# Vormatrigine shows a differentiated pre-clinical profile

## Preclinical decision tree optimized for focal seizure drug discovery

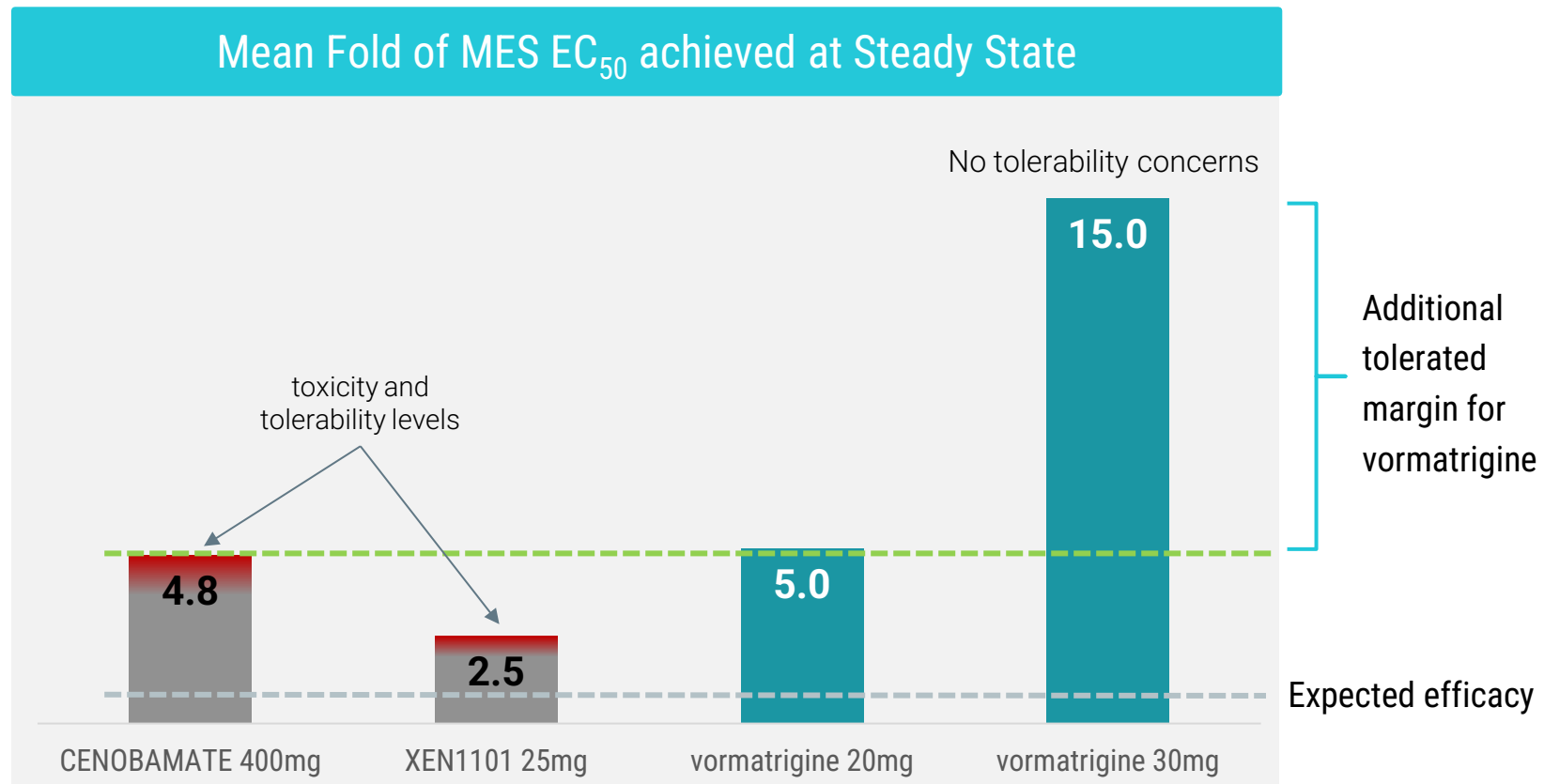
Vormatrigine Results



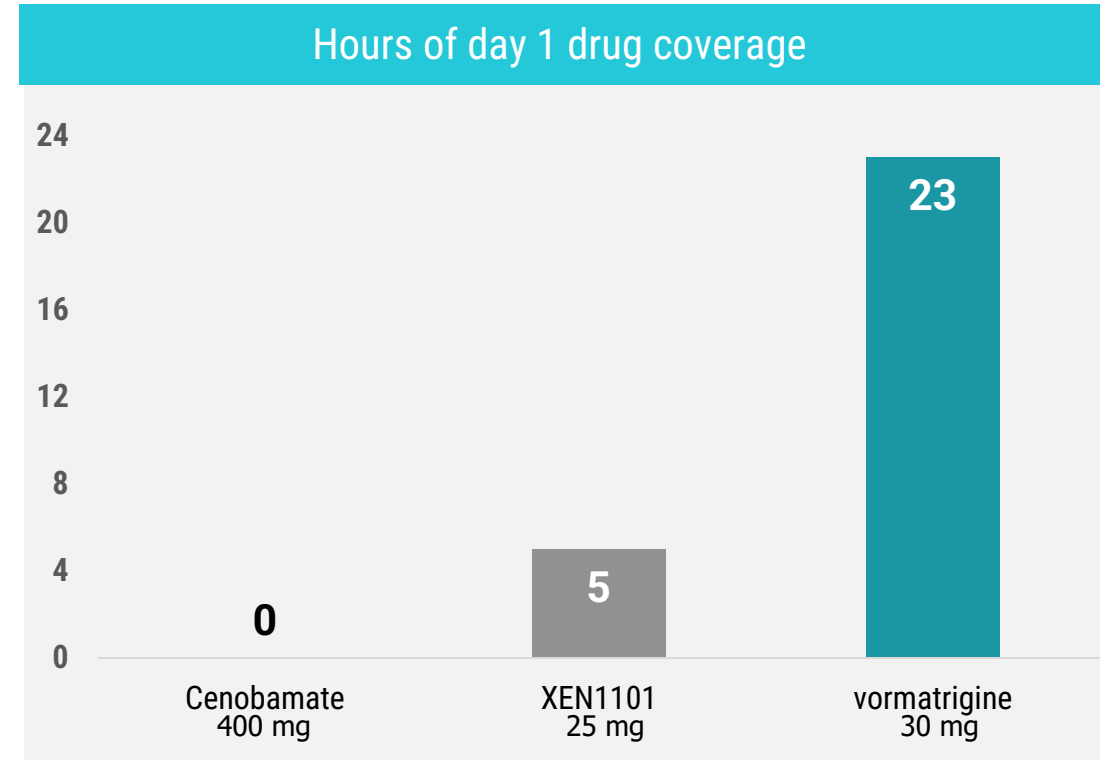
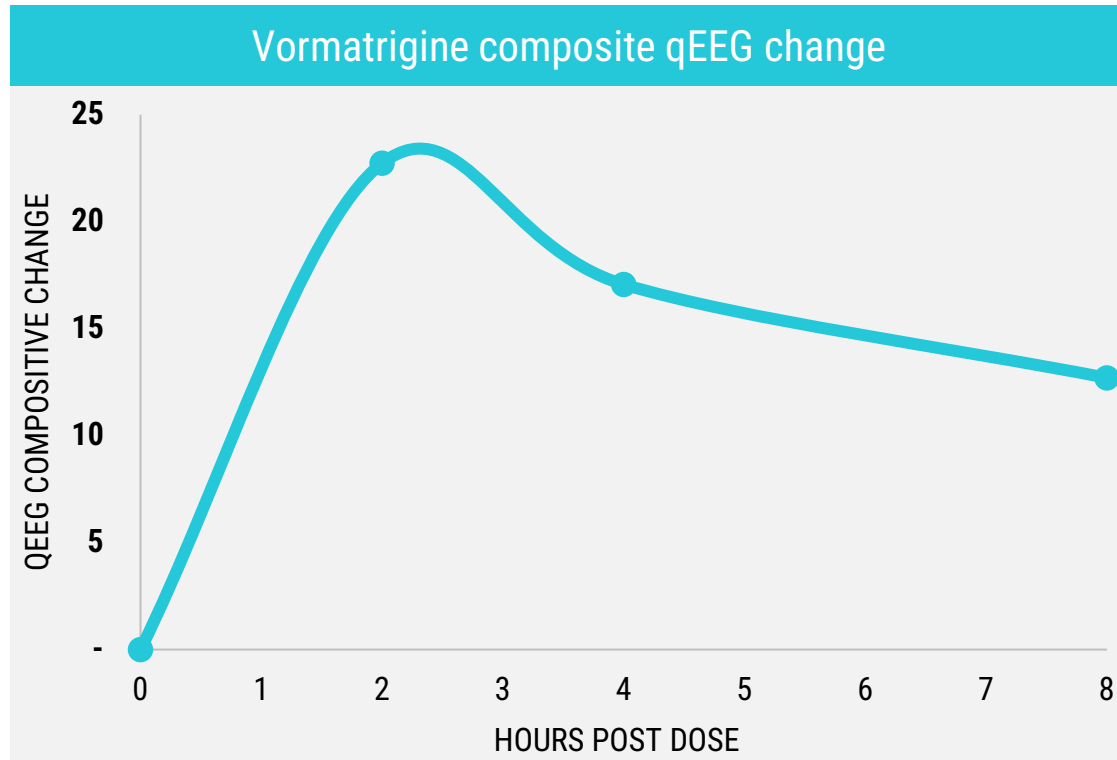
## Vormatrigine has differentiated potency in the MES model



Ability to significantly exceed therapeutic concentrations while well tolerated  
*Vormatrigine has unprecedented margins over best-in-class ASMs based on MES efficacy and clinical tolerability in humans*



# Phase 1 study demonstrated brain activity and rapid achievement of therapeutic concentrations



- Composite endpoint from qEEG showed separation of drug versus placebo in the SAD and MAD cohorts
- Difference between vormatrigine and placebo significant for all doses at first point measured
- Effect consistent with known PK profile

- Vormatrigine achieves nearly complete coverage on Day 1



The Phase 2 vormatrigine Photo Paroxysmal Response (PPR) study demonstrated proof of concept; de-risks advancing to studies in focal and generalized epilepsy

### Study Results

- 100% response in treated patients
- Vormatrigine achieved between 3-13x multiples of MES EC<sub>50</sub> exposure
- Safety was consistent with prior dose escalation study and AEs were mild



- Patients must demonstrate PPR response during screening and baseline to be evaluable
- Response Assessment
  - **Partial:** Reduction, other than to zero, in the number of generalized PPR events at any assessment period vs baseline
  - **Complete:** Reduction to zero in the number of generalized PPR events at any assessment period vs baseline
- Safety monitored and PK samples collected during observation period

Dose	Categorical Response	Response Rate
15 mg	None	0% (0/5)
	Partial	20% (1/5)
	Complete	80% (4/5)
45 mg	None	0% (0/3)
	Complete	100% (3/3)
<b>Evaluable Response</b>		<b>100% (8/8)</b>

# Vormatragine presents an ideal precision ASM profile

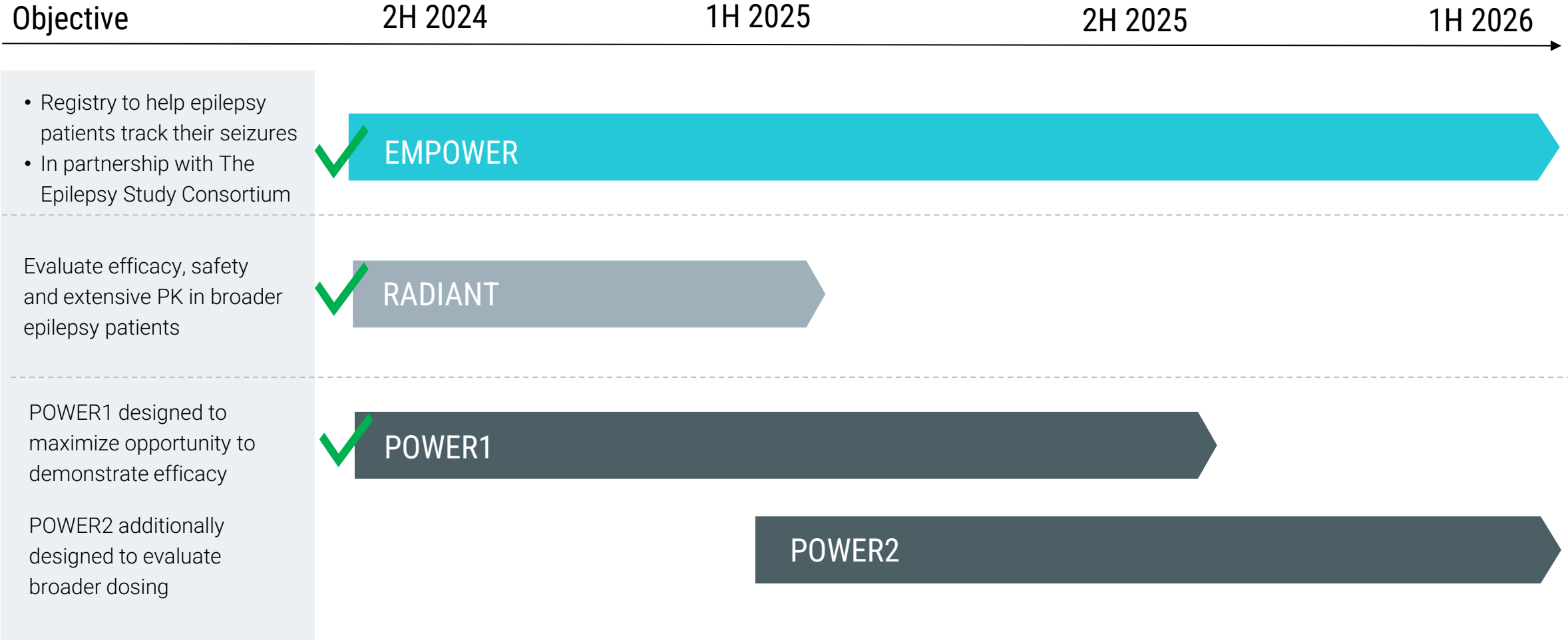


## Ideal Treatment

- ✓ Significantly more potent than competitive molecules in highly translatable pre-clinical models
- ✓ Rapidly achieves therapeutic concentrations after once-daily dose
- ✓ Ability to significantly exceed therapeutic concentrations while well tolerated
- ✓ Proof of concept achieved in epilepsy patients

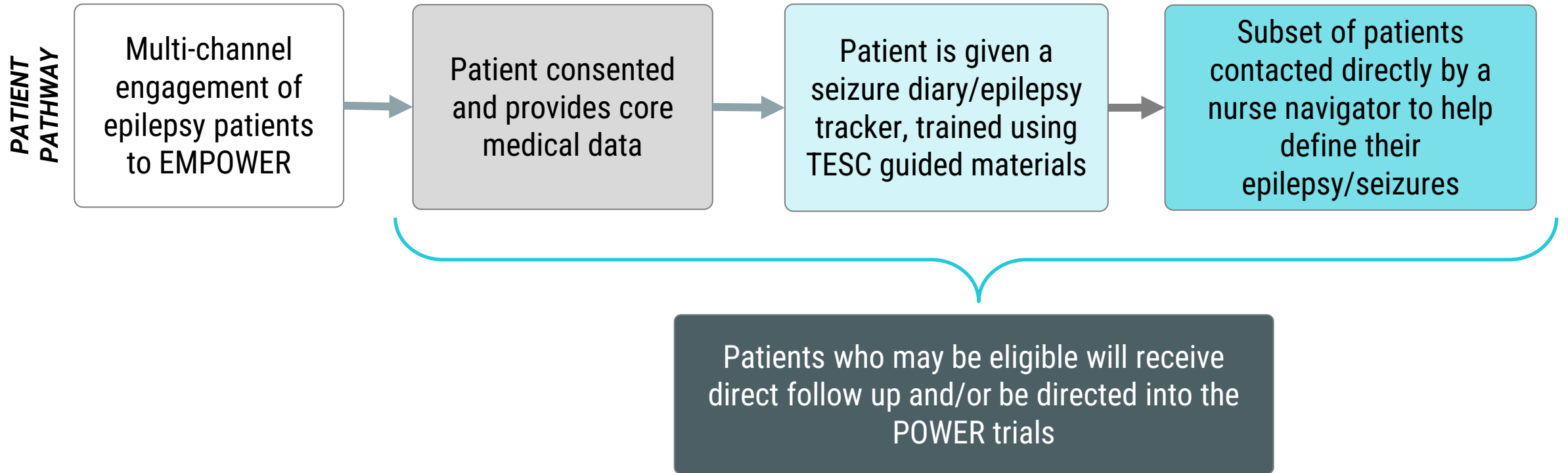
**Three efficacy trials in the ENERGY program**

# Vormatrigine ENERGY program to demonstrate efficacy and bring an improved therapy to focal and generalized epilepsy patients



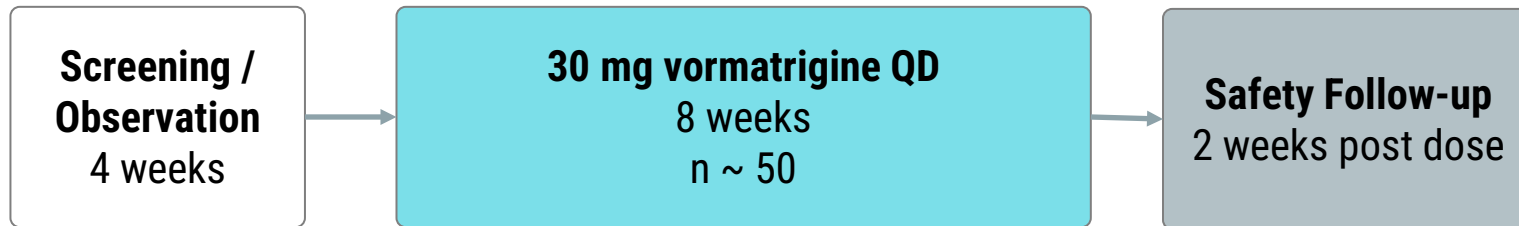
# EMPOWER Observational Study to better understand patient journey

*In partnership with The Epilepsy Study Consortium (TESC)*



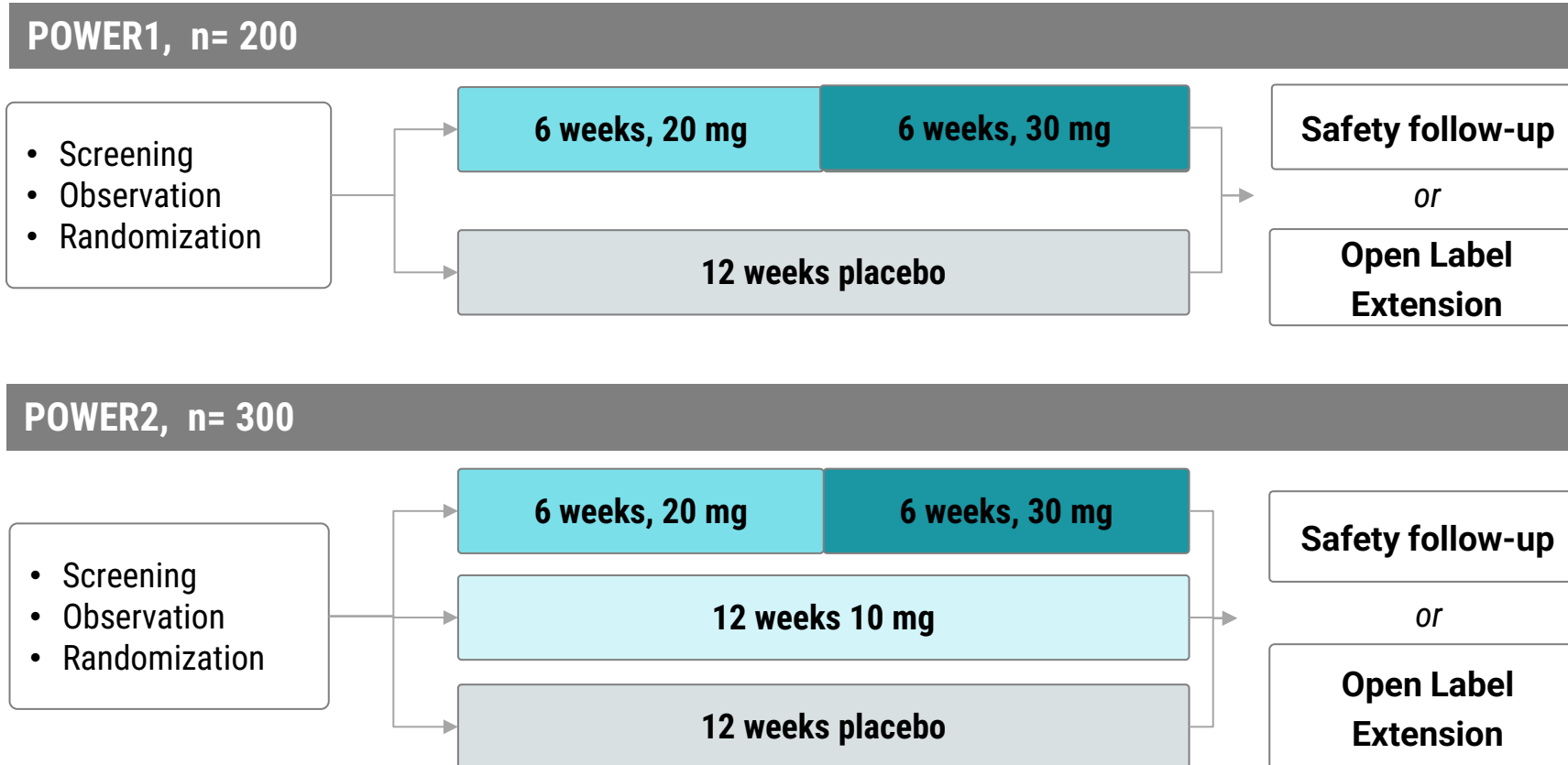


# RADIANT Phase 2 open label study to evaluate safety and efficacy in focal onset or generalized epileptic seizures

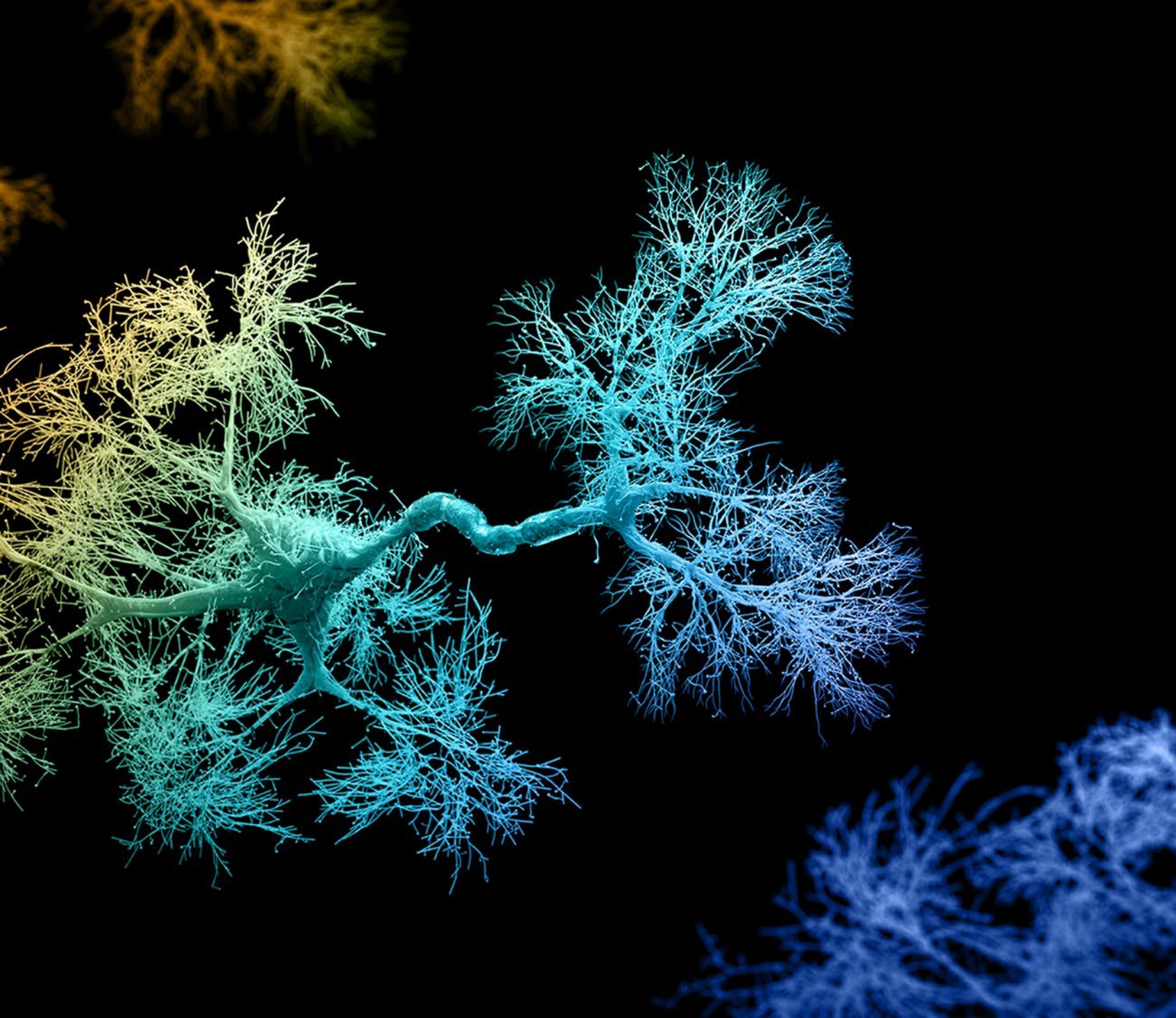


- Measuring seizure frequency, seizure freedom, safety and pharmacokinetics
- Will allow the evaluation of vortmatrigine in a broader population, including generalized epilepsy
- Topline results in 1H 2025

# Proposed study designs for POWER1 and POWER2



- POWER1 initiated in Q4 2024 with topline readout 2H 2025
- POWER2 to initiate in 1H 2025

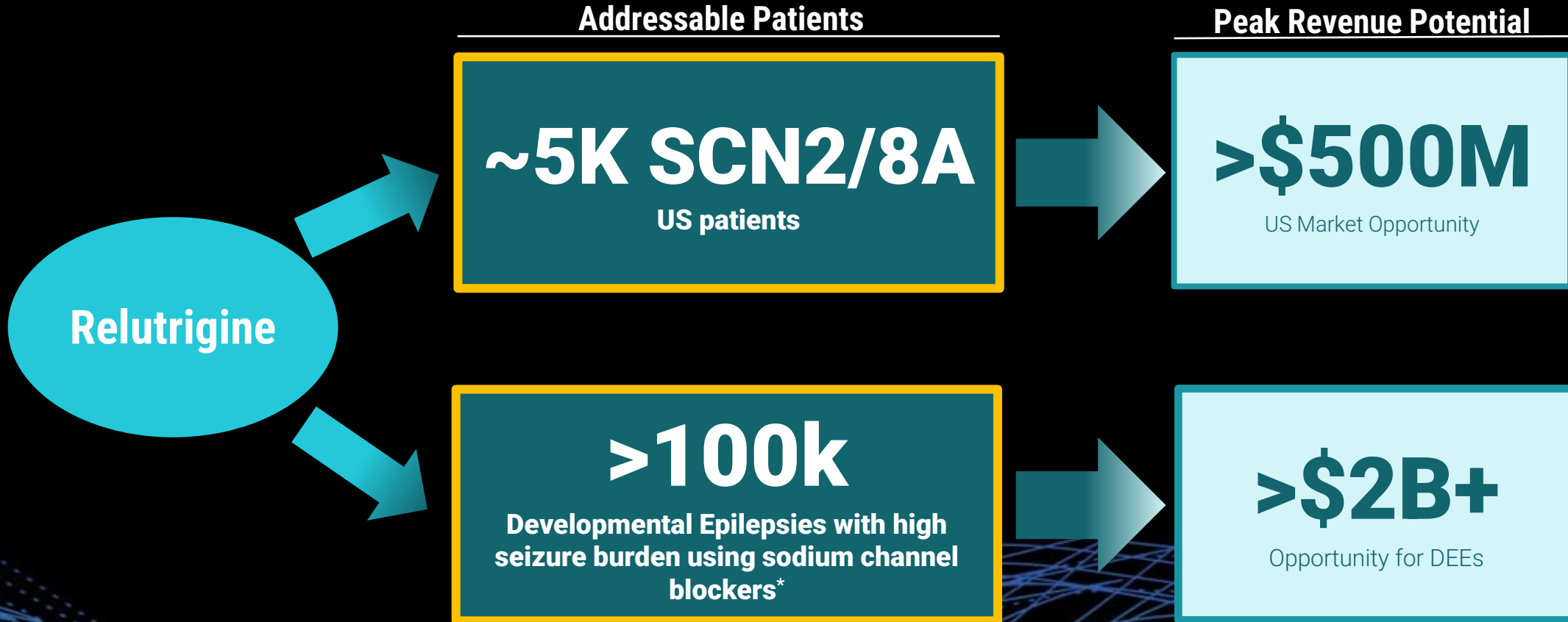


# Relutrigine (PRAX-562)

## Milestones

2H 2024: EMBOLD Cohort 2 enrolling  
1H 2025: Initiate EMERALD study

# Relutrigine is poised to disrupt the DEE market



\*Poke G, Stanley J, Scheffer IE, Sadleir LG. Epidemiology of Developmental and Epileptic Encephalopathy and of Intellectual Disability and Epilepsy in Children



Preclinical and emerging clinical data demonstrate relutrigine has the potential to be a first- and best-in-class small molecule for DEEs

## RELUTRIGINE

SCN2A, SCN8A

FORMULATED FOR  
PEDIATRIC USE

SMALL MOLECULE

FUNCTIONAL STATE  
MODULATOR

Superior selectivity for disease-state Na<sub>v</sub> channel hyperexcitability

Unprecedented therapeutic window with potential for superior safety and efficacy

Generally well-tolerated with mostly mild to moderate AEs, no drug-related SAEs and no relutrigine dose reduction required

Demonstrated robust seizure reduction and unprecedented seizure-free status per 28-day period



# Relutrigine Phase 1 summary

Relutrigine has been generally well tolerated in over 130 healthy volunteers

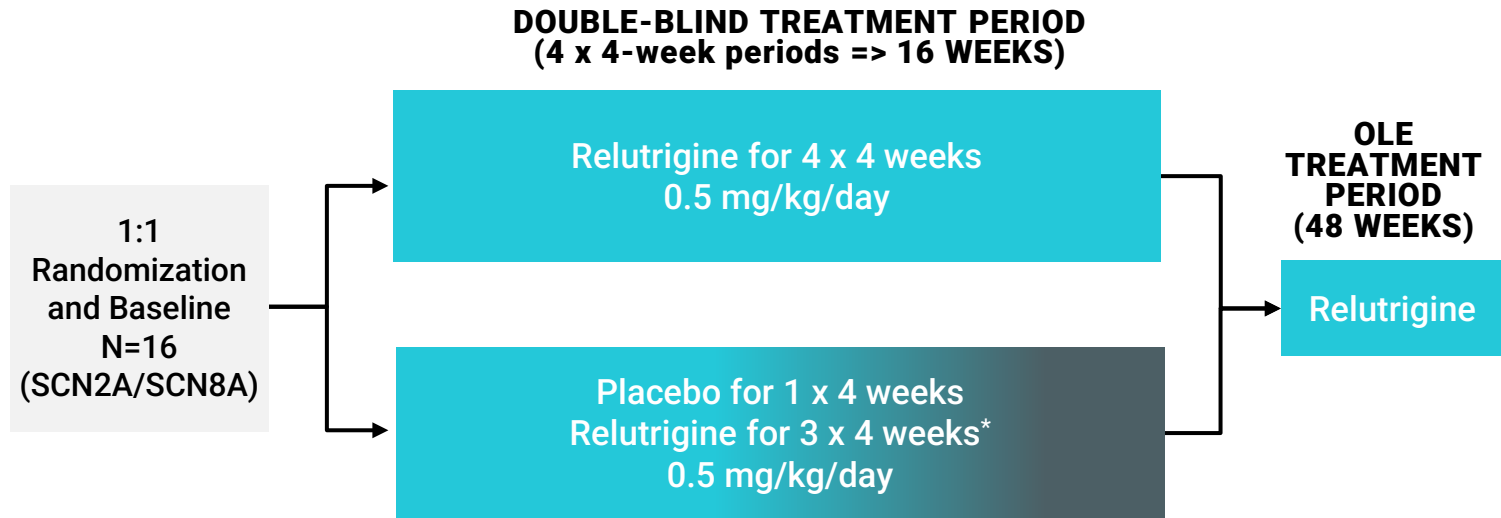
All TEAEs mild to moderate as stand-alone therapy\*, with headache & dizziness most common TEAEs



No MTD at exposures multiple fold above therapeutic range indicates potential for superior therapeutic index

Significant changes observed between placebo and relutrigine on qEEG biomarkers

# Relutrigine Phase 2 EMBOLD study design and endpoints



## KEY ENDPOINTS:

- Incidence and severity of treatment-emergent adverse events (TEAEs)
- Change from baseline in monthly (28-day) motor seizure frequency
- Seizure freedom achieved for a 4-week period
- Clinical and Caregiver Global Impression of Improvement and Severity



\* Participants receive either 0.5 mg/kg/day relutrigine QD for 16 weeks or 0.5 mg/kg/day relutrigine QD for 12 weeks & matching placebo QD for 4 weeks. Participants in the relutrigine/placebo arm will receive placebo for 4 consecutive weeks during the 16-week treatment period, with timing of placebo administration blinded for both participants and investigator. Dose adjustment permitted to a max of 1.0 mg/kg/day and a min of 0.25 mg/kg/day.

Relugirine demonstrated robust reduction in motor seizures and unprecedented seizure-free status per 28-day period

1,778 Motor Seizures at Baseline  
(n=15)



46%

placebo-adjusted reduction  
in motor seizures over  
double-blind period\*

Seizure Freedom Periods Never  
Seen Before in this Population

5 patients

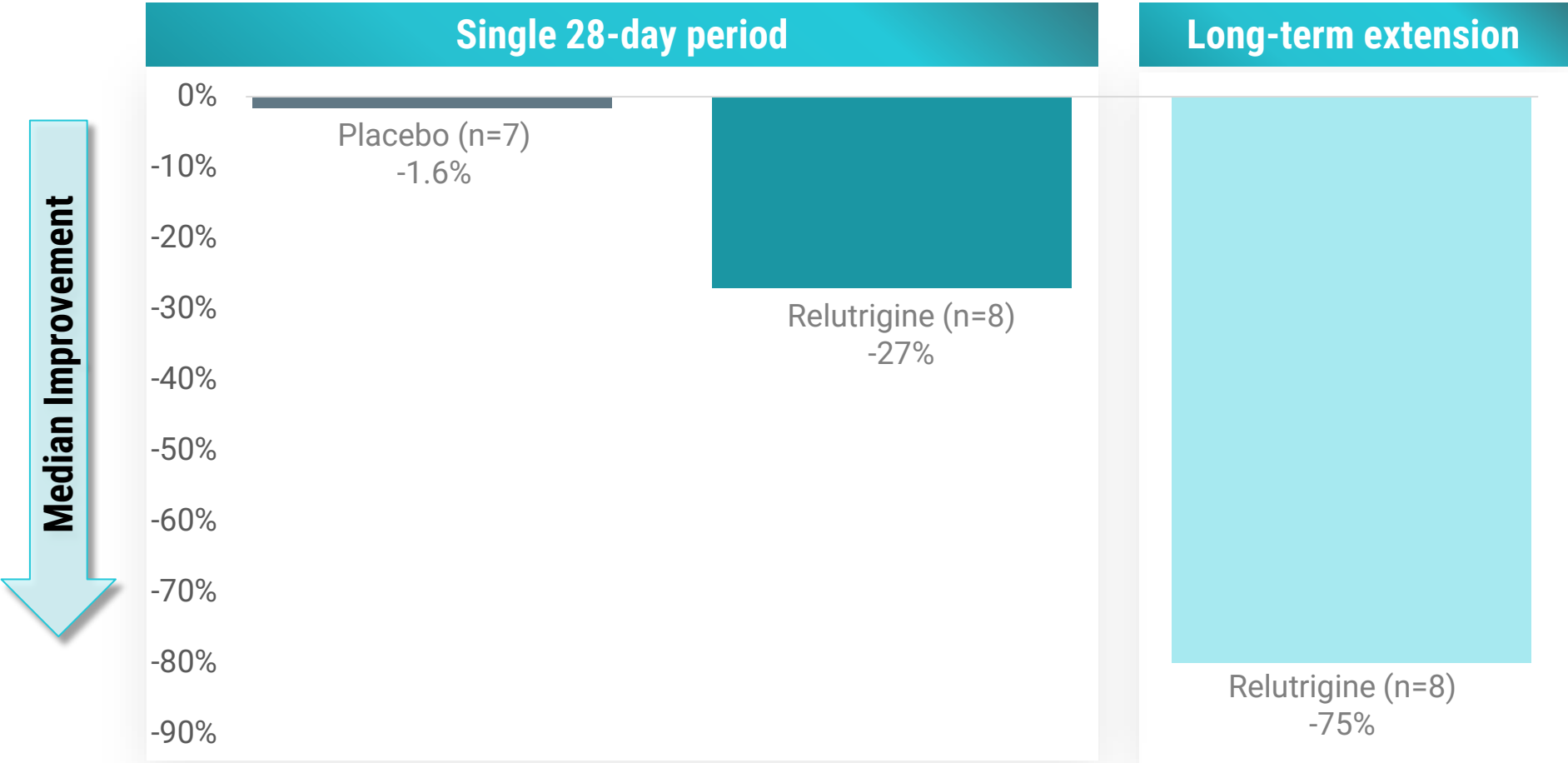
- 33% of patients seizure-free after initiating on relugirine\*\*
- Longest follow-up >200 days seizure-free



\*Percent reduction derived from log-transformed placebo-adjusted relugirine effect

\*\*Assessment of motor seizures over the controlled plus open-label periods through August 21, 2024

# Relutrigine patients demonstrated significant improvement over the short and long-term in motor seizures

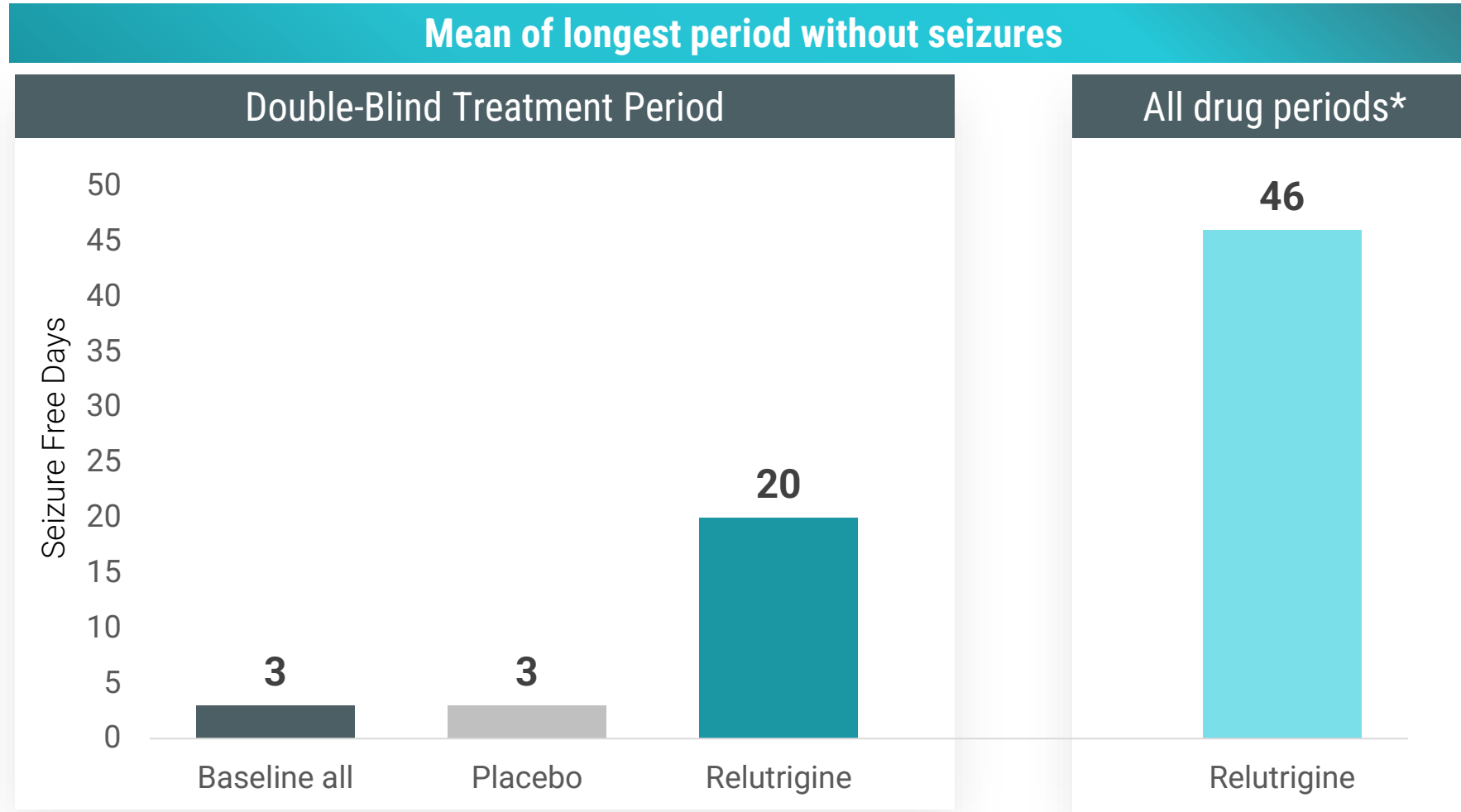


7 patients increased the dose of relutrigine to 1 mg/kg during the double-blind period, 2 additional patients during the long-term extension

Seizure freedom associated with exposures achievable by 1 mg/kg



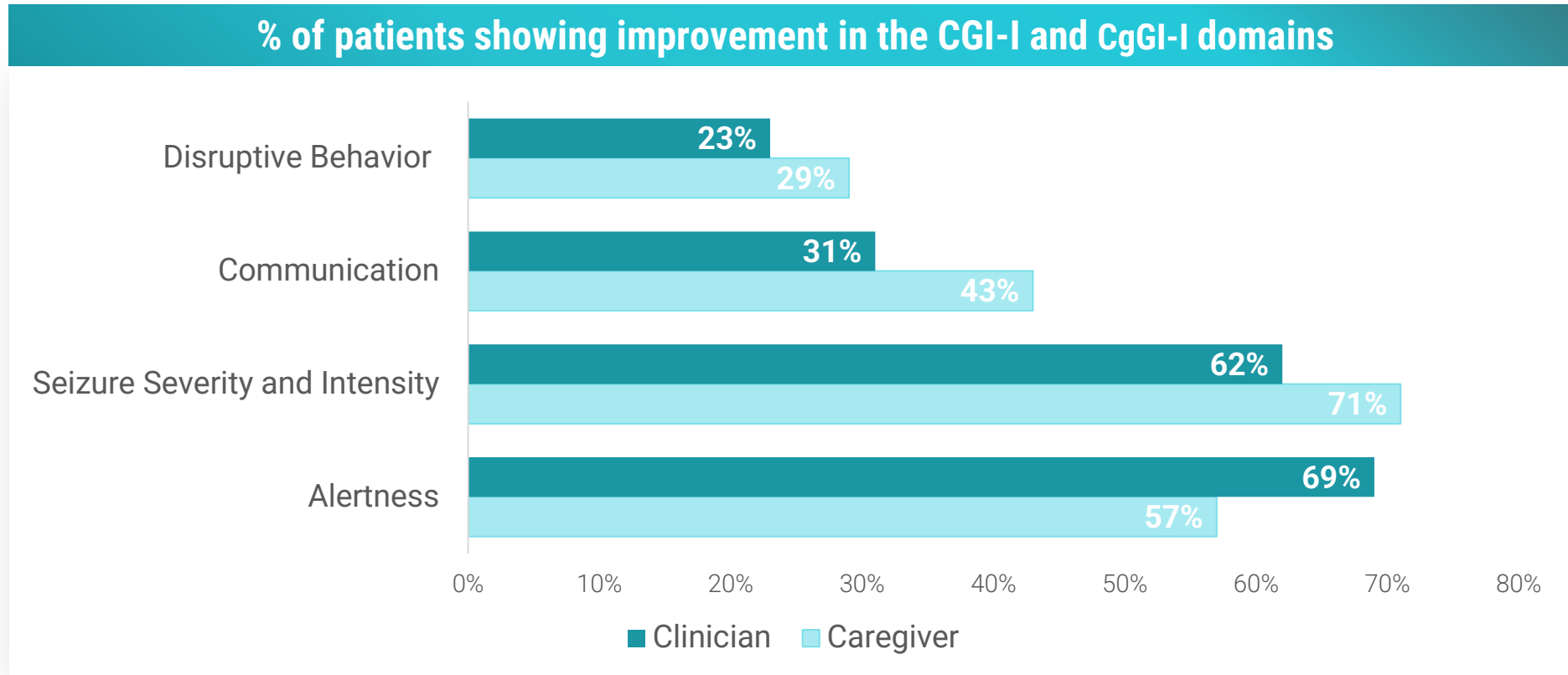
# Meaningful and consistent impact in days without motor seizures for relutrigine treated patients



\* Inclusive of OLE period



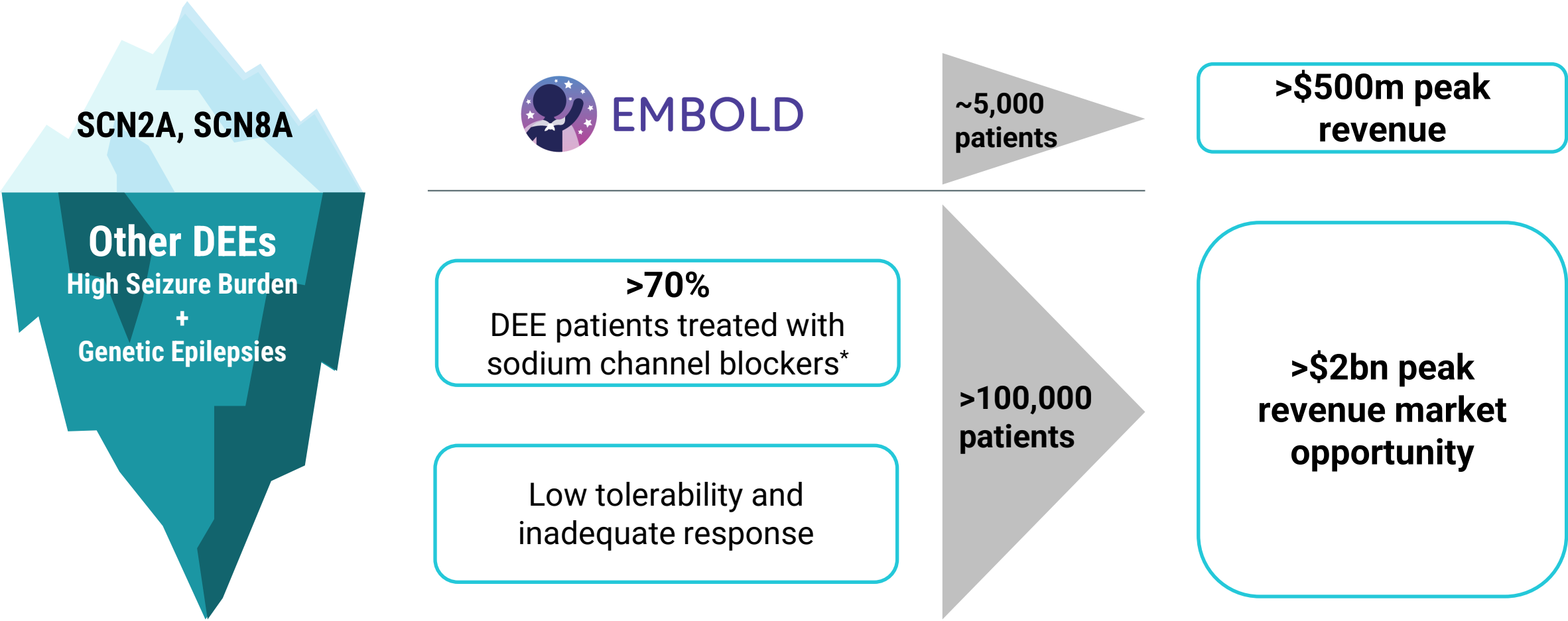
# Relutrigine treatment led to disease modifying impact



**Meaningful gains in overall well-being of patients, despite severity and historical lack of improvement with available treatments**



SCN2A and SCN8A are the tip of the iceberg in addressing the significant unmet needs across the spectrum of other DEEs



\*Based on PubMed Search of DEEs that could use SCBs to treat focal seizures when they presented.

# Next steps

Initiated EMBOLD cohort 2 registrational trial for SCN2A and 8A, begin enrollment for EMERALD trial in 1H 2025

2H 2024

1H 2025

SCN2A  
/8A

- EMBOLD registrational Cohort 2 initiated
- Leveraging EMBOLD successful study design

## Ongoing Study

1:1  
Randomization  
N=80  
(SCN2A/SCN8A)

- Relutrigine for 4 x 4 weeks  
1 mg/kg/day
- Placebo for 1 x 4 weeks  
Relutrigine for 3 x 4 weeks  
1 mg/kg/day

DEES



## Preliminary Design

DEEs

- Relutrigine
- Placebo



# Elsunersen (PRAX-222)

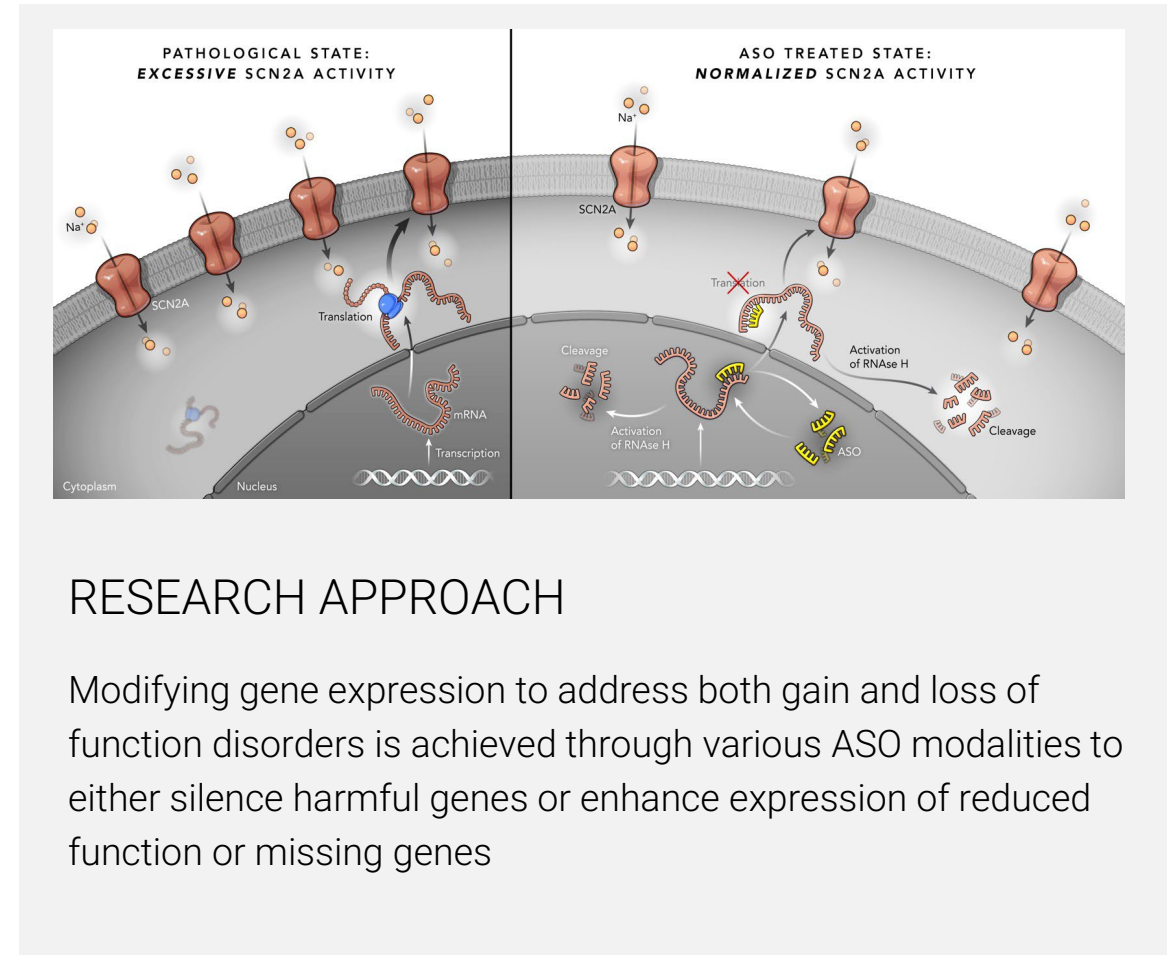
SOLIDUS™ ASO PLATFORM



# Elsunersen specifically designed for SCN2A GoF patients

## DISEASE OVERVIEW

- Epilepsy and developmental impairment before the age of 16 years occurs in 1 in 340 children
- The majority of these cases result from sporadic de novo genetic variation
- In both de novo and familial forms of epilepsy some 900 genes have been identified
- Many of these genes also represent opportunities for intervention in other neurological disorders
- Patients with SCN2A-DEE have a debilitating and ultimately fatal trajectory
- Affects approximately 1,500 patients in the US

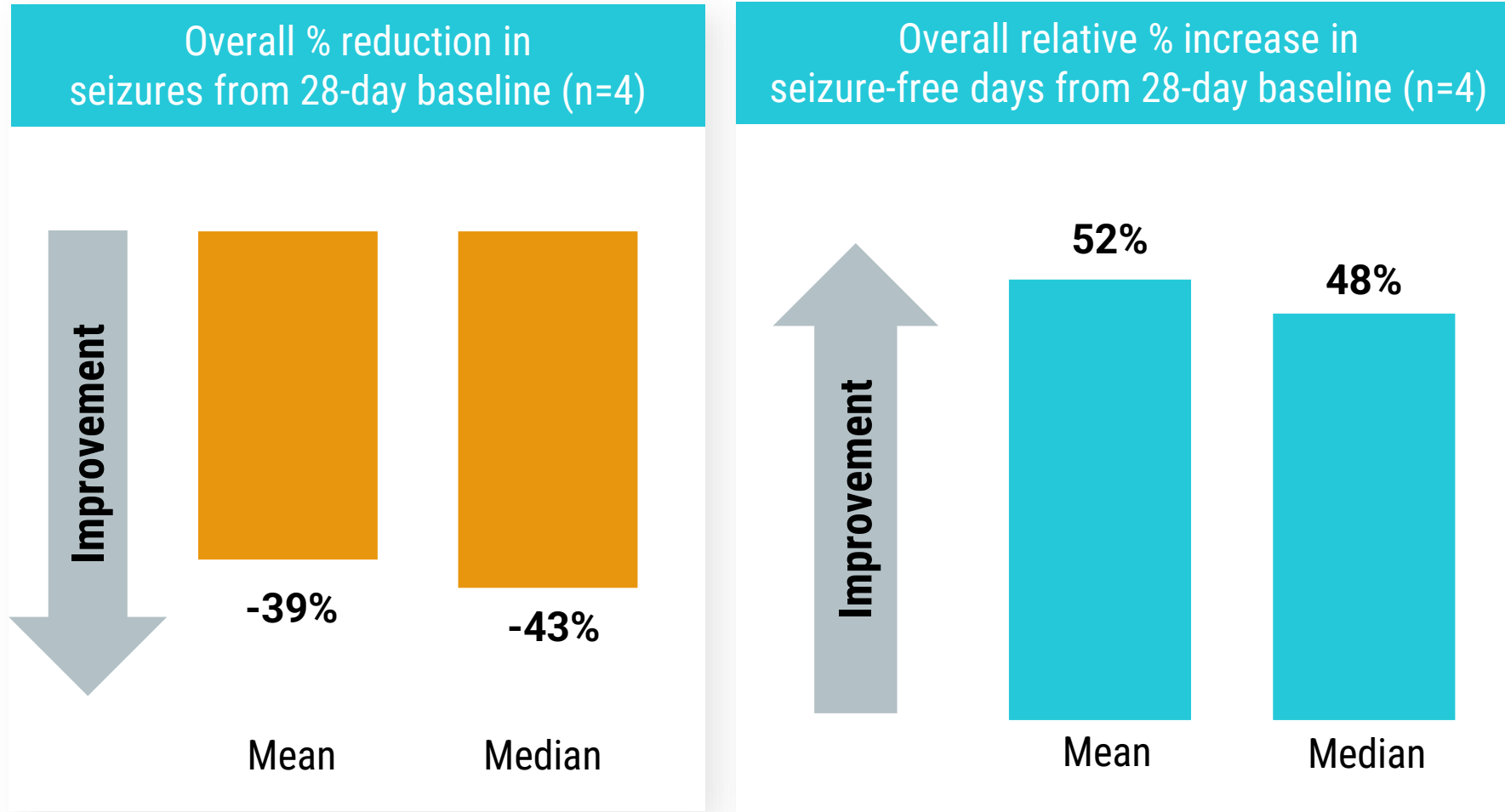


## RESEARCH APPROACH

Modifying gene expression to address both gain and loss of function disorders is achieved through various ASO modalities to either silence harmful genes or enhance expression of reduced function or missing genes



# Significant reduction in seizures observed for SCN2A patients



- No TEAEs or SAEs considered related to study drug
- All TEAEs recovered/resolved



**PRAXXIS**

***DARE FOR MORE***<sup>®</sup>