MARINUS PHARMACEUTICALS

Corporate Presentation

May 2021

Safe Harbor Statement

To the extent that statements contained in this presentation are not descriptions of historical facts regarding Marinus, they are forward-looking statements reflecting the current beliefs and expectations of management made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Words such as "may", "will", "expect", "anticipate", "estimate", "intend", "believe", and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements. Examples of forward-looking statements contained in this presentation include, among others, statements regarding our expected revenue and operating expenses for 2021; our clinical development plans for ganaxolone; expected dosing in our clinical trials; the clinical development schedule and milestones; our expected timing to begin and complete enrollment in our clinical trials; the expected trial design, target patient population and endpoints for our clinical trials; interpretation of scientific basis for ganaxolone use; timing for availability and release of data; the potential safety and efficacy and therapeutic potential of ganaxolone; timing and expectations regarding regulatory communications and submissions; our commercialization plans and the expected timing thereof; expectations regarding our agreement with BARDA; expectations regarding the potential market opportunities for our product candidates, including oral ganaxolone; potential commercial alliances; and our expectations regarding the effect of the COVID-19 pandemic on our business and clinical development plans. Forward-looking statements in this presentation involve substantial risks and uncertainties that could cause our clinical development programs, future results, performance or achievements to differ significantly from those expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, uncertainties and delays relating to the design, enrollment, completion, and results of clinical trials; interpretation of results of clinical trials; unanticipated costs and expenses; early clinical trials may not be indicative of the results in later clinical trials; clinical trial results may not support regulatory approval or further development in a specified indication or at all; actions or advice of the FDA or other regulatory agencies may affect the design, initiation, timing, continuation and/or progress of clinical trials or result in the need for additional clinical trials; our ability to obtain and maintain regulatory approval for our product candidate; our ability to obtain and maintain patent protection for our product candidates; the potential negative impact of third party patents on our ability to commercialize ganaxolone; delays, interruptions or failures in the manufacture and supply of our product candidate; our ability to raise additional capital; the effect of the COVID-19 pandemic on our business, the medical community and the global economy; and the availability or potential availability of alternative products or treatments for conditions targeted by us that could affect the availability or commercial potential of our product candidate. Marinus undertakes no obligation to update or revise any forward-looking statements. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to the business of the Company in general, see filings Marinus has made with the Securities and Exchange Commission. You may access these documents for free by visiting EDGAR on the SEC web site at www.sec.gov.

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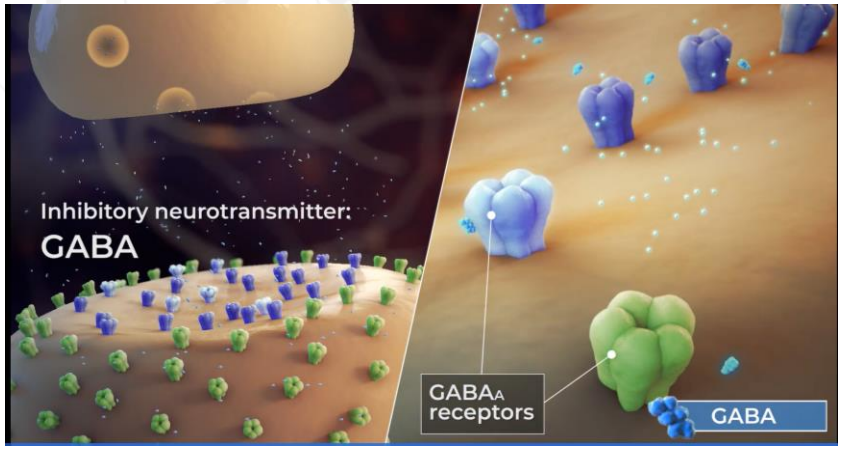
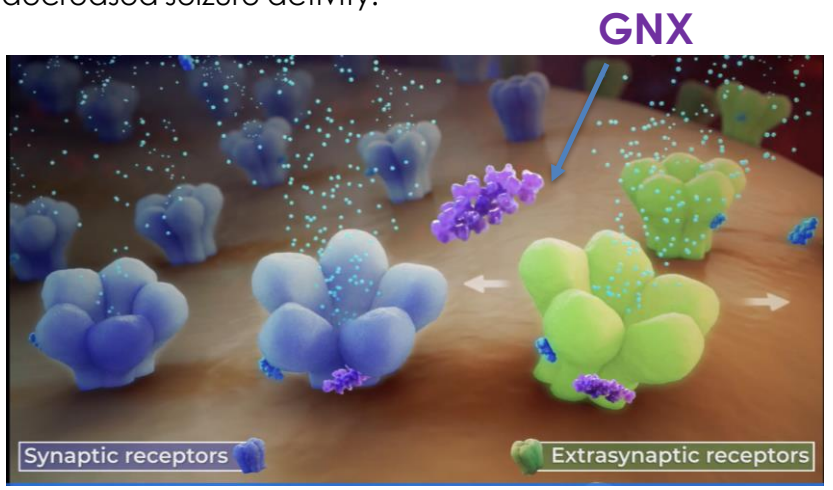
Ganaxolone (GNX) Targets Synaptic & Extrasynaptic $GABA_A$ Receptors

Ganaxolone	a positive allosteric $GABA_A$ receptor modulator with a well-defined MOA designed to treat patients suffering from epilepsy and neuropsychiatric disorders. GNX is designed to modulate both synaptic and extrasynaptic $GABA_A$ receptors to calm over-excited neurons
Clinical development	focused on status epilepticus and rare genetic epilepsies that have few or no treatment options
Multiple dose formulations	IV and oral – to meet the needs of adult and pediatric patients in acute and chronic care settings
Extensive safety record	in more than 1,600 patients both pediatric and adult, at therapeutically relevant dose levels for up to two years



The main inhibitory neurotransmitter in the brain is "GABA". By binding to specific receptors, GABA can bring about decreased seizure activity.



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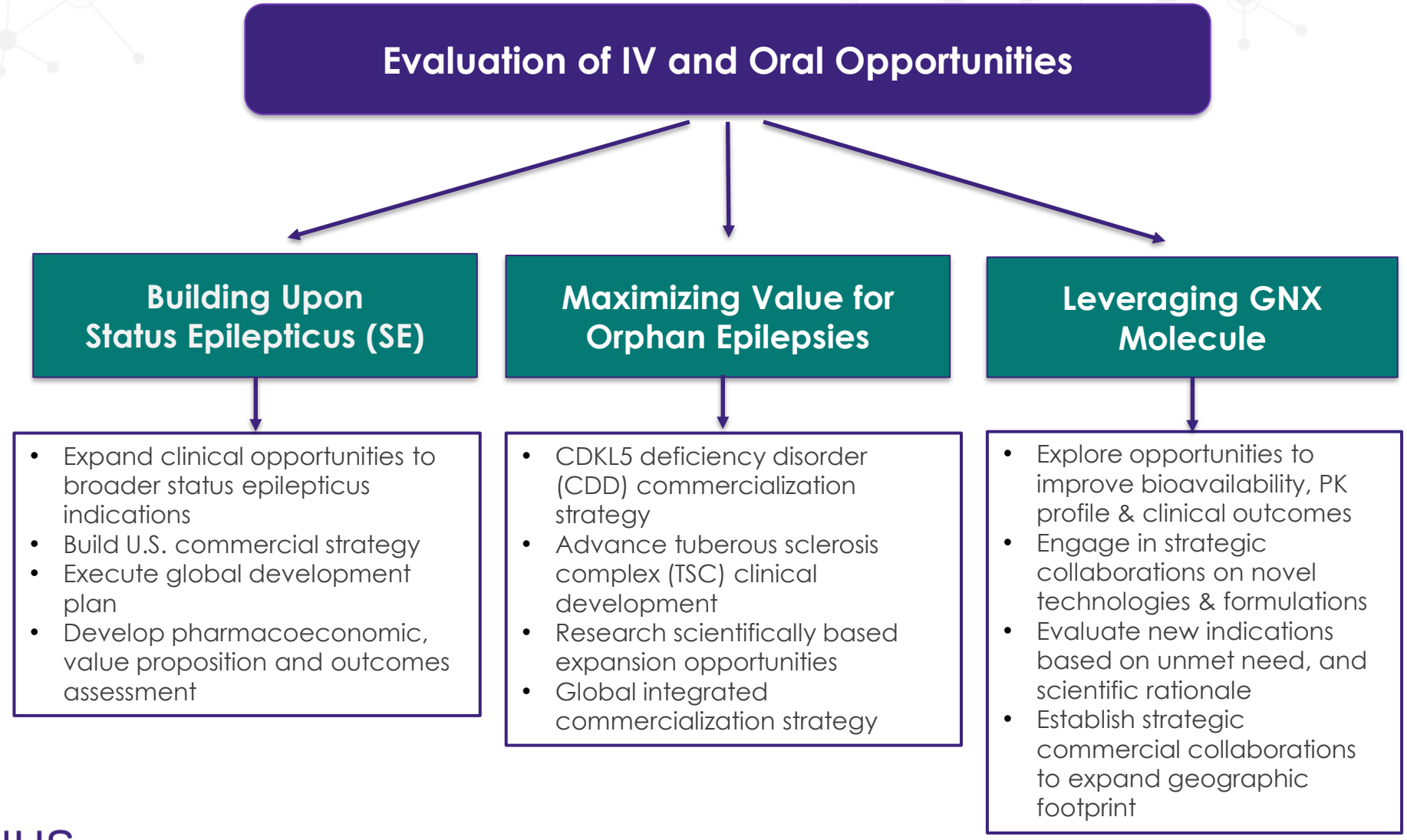
Corporate Strategy



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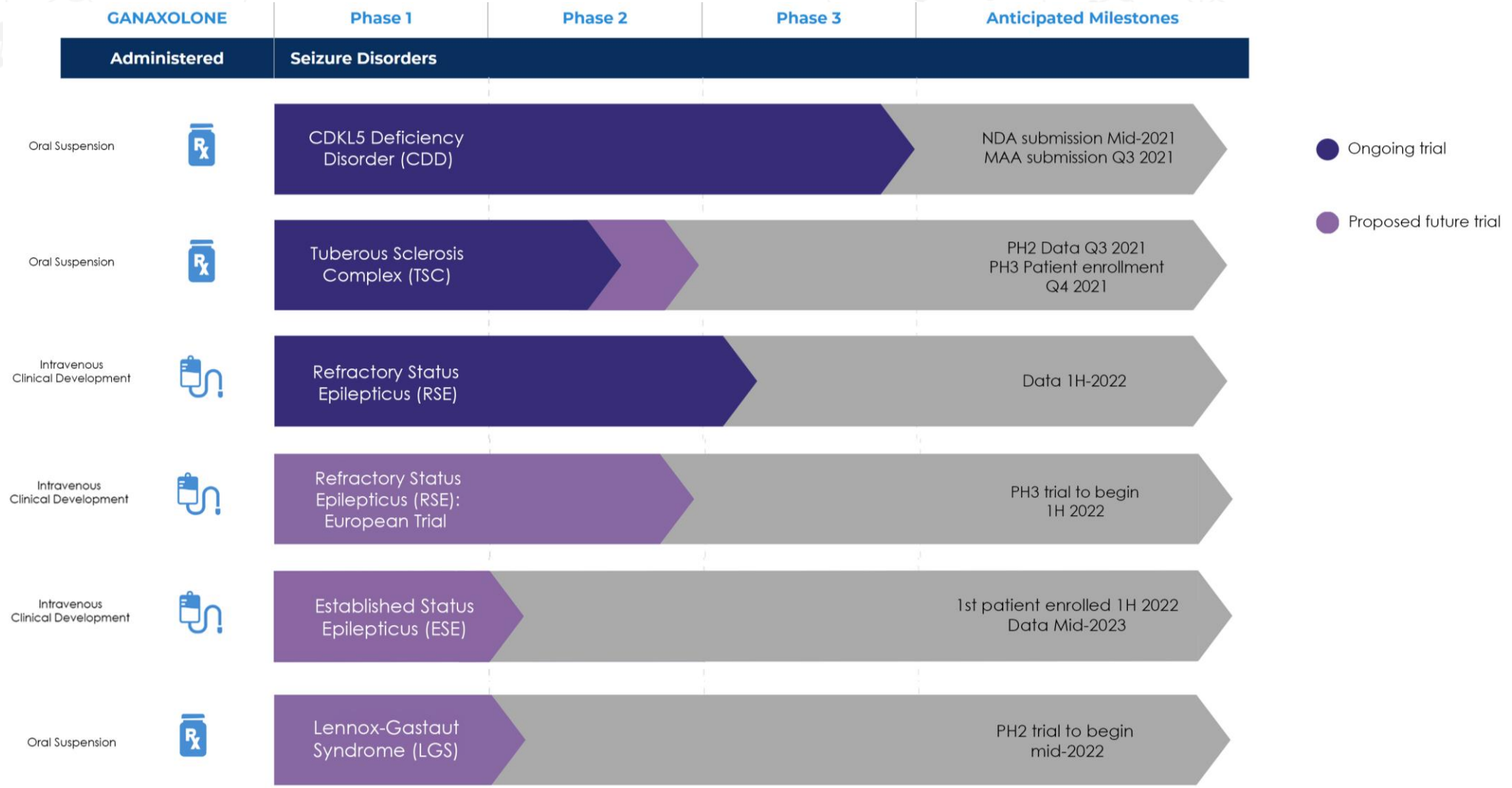
Ganaxolone Development Pipeline



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Orphan Epilepsy Franchise

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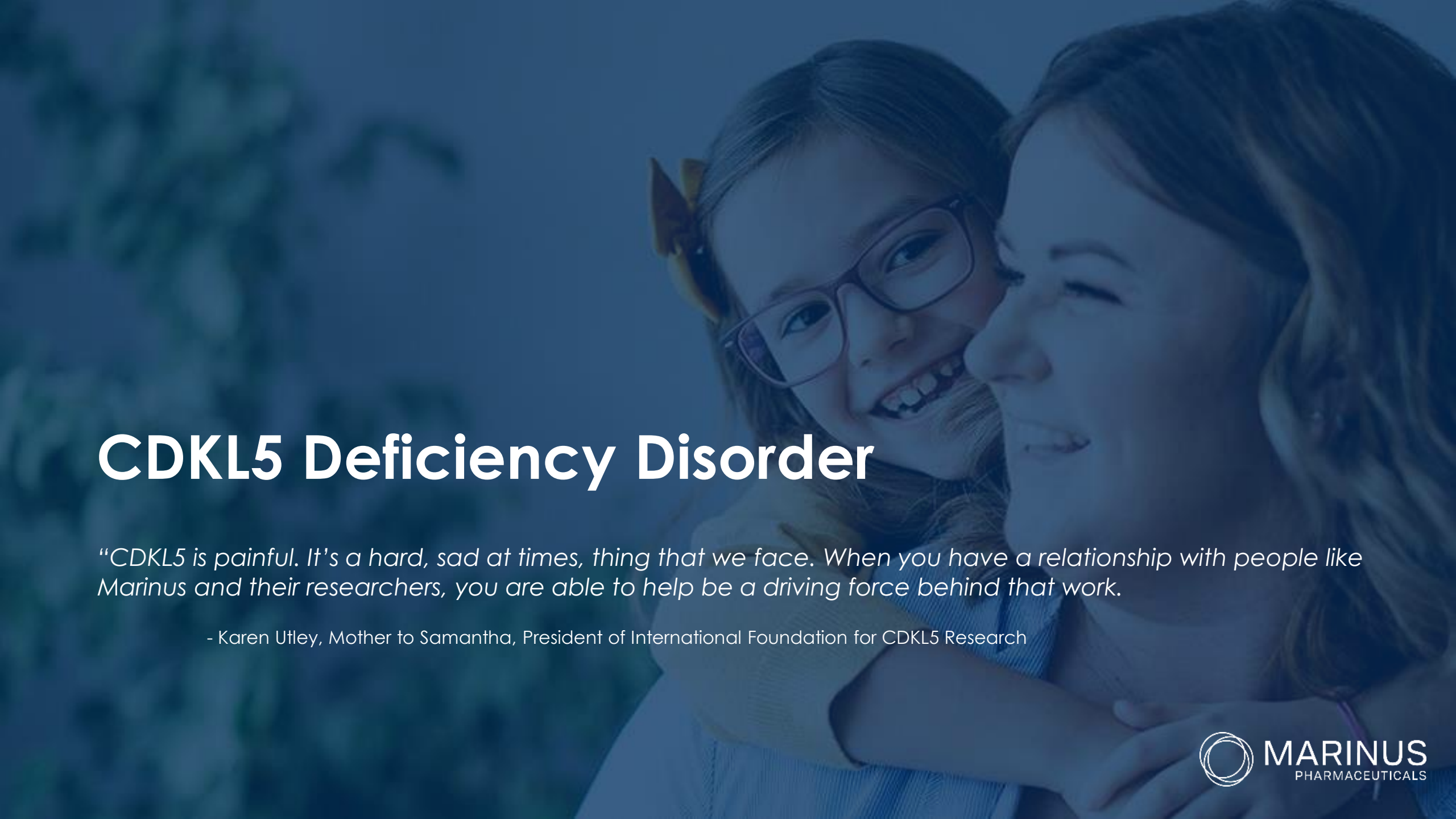

CDKL5 Deficiency Disorder

"CDKL5 is painful. It's a hard, sad at times, thing that we face. When you have a relationship with people like Marinus and their researchers, you are able to help be a driving force behind that work.

- Karen Utley, Mother to Samantha, President of International Foundation for CDKL5 Research

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CDKL5 Deficiency Disorder (CDD)

Cause	• Mutation of the cyclin-dependent kinase-like 5 (*CDKL5*) gene, located on the X chromosome
Symptoms	• Early-onset, treatment refractory seizures, & severe neuro-developmental delay • Most can't walk, talk or care for themselves • Suffer from scoliosis, visual impairment, gastrointestinal difficulties & sleeping disorders
Incidence	• 1:40,000 live births[1]; approx. 75-100 newborn in US and EU5 • Predominantly affects females • Genetic testing available • Orphan Disease
Treatments	• No disease-specific treatments are approved
Rationale	• Potential GABAergic dysfunction, achieved Primary endpoint in Marigold Phase 3 study

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[1]Symonds JD 2019 Brain

Completed Global Phase 3 Trial Design

Marigold Study
CDKL5 Deficiency Disorder

- **Trial Details**

  Evaluated the use of oral ganaxolone in children and young adults

  Global, double-blind, placebo-controlled, clinical trial enrolled 101 patients between the ages of 2 and 19 with a confirmed disease-related *CDKL5* gene variant

  Ages 2-19, ≥16 major motor seizures/month; up to 4 concomitant AEDs

- **Endpoints**

  Primary endpoint of the trial was percent change in 28-day major motor seizure frequency *

  Non-seizure secondary outcome measures: Behavioral/neuropsychiatric changes correlated with domains of attention & sleep

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* Major motor seizures were defined as bilateral tonic, generalized tonic-clonic, atonic/drop, bilateral clonic, or focal to bilateral tonic-clonic

Marigold Baseline Clinical Characteristics

Marigold Study
CDKL5 Deficiency Disorder

Characteristic	Placebo *(n=51)*	Ganaxolone *(n=50)*	Total *(n=101)*
Baseline Primary Seizure Frequency, per 28 days (median, IQR)	49.2 (18.7 – 120.0)	54.0 (31.3 – 147.3)	-
Number of AED Medications Taken Prior (median)	7	7	7
Concomitant AED Medications, n (%)			
Valproate	16 (31.4)	18 (36.0)	34 (33.7)
Levetiracetam	13 (25.5)	13 (26.0)	26 (25.7)
Clobazam	13 (25.5)	12 (24.0)	25 (24.8)
Vigabatrin	12 (23.5)	10 (20.0)	22 (21.8)

Baseline seizure burden and AED history highlights unmet need

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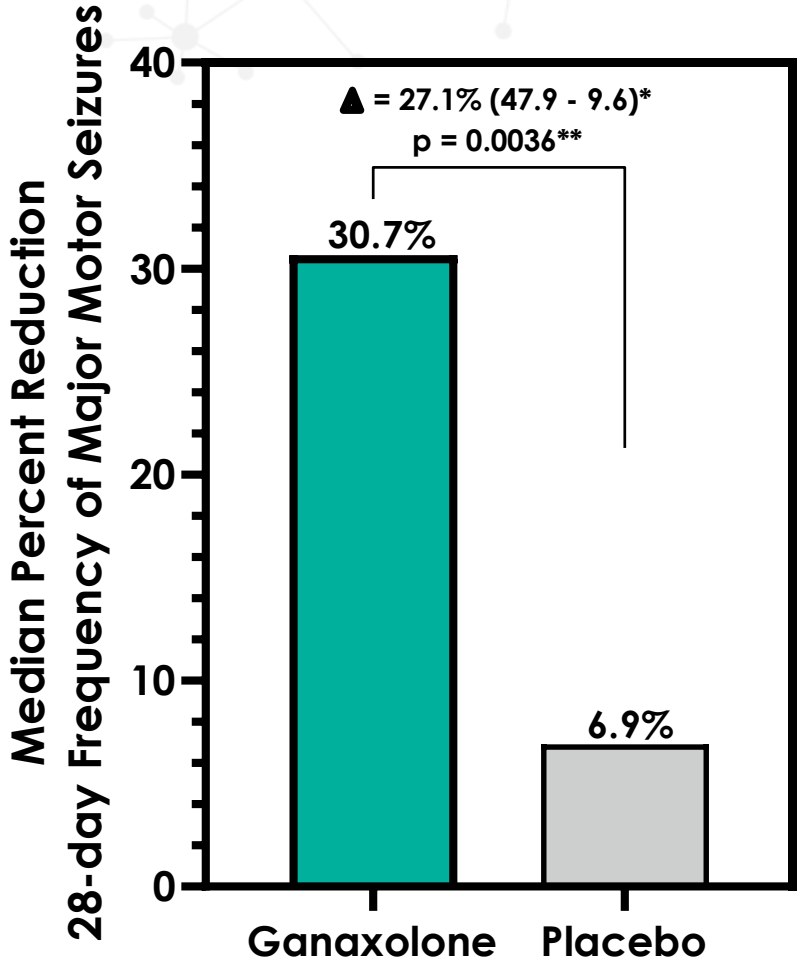
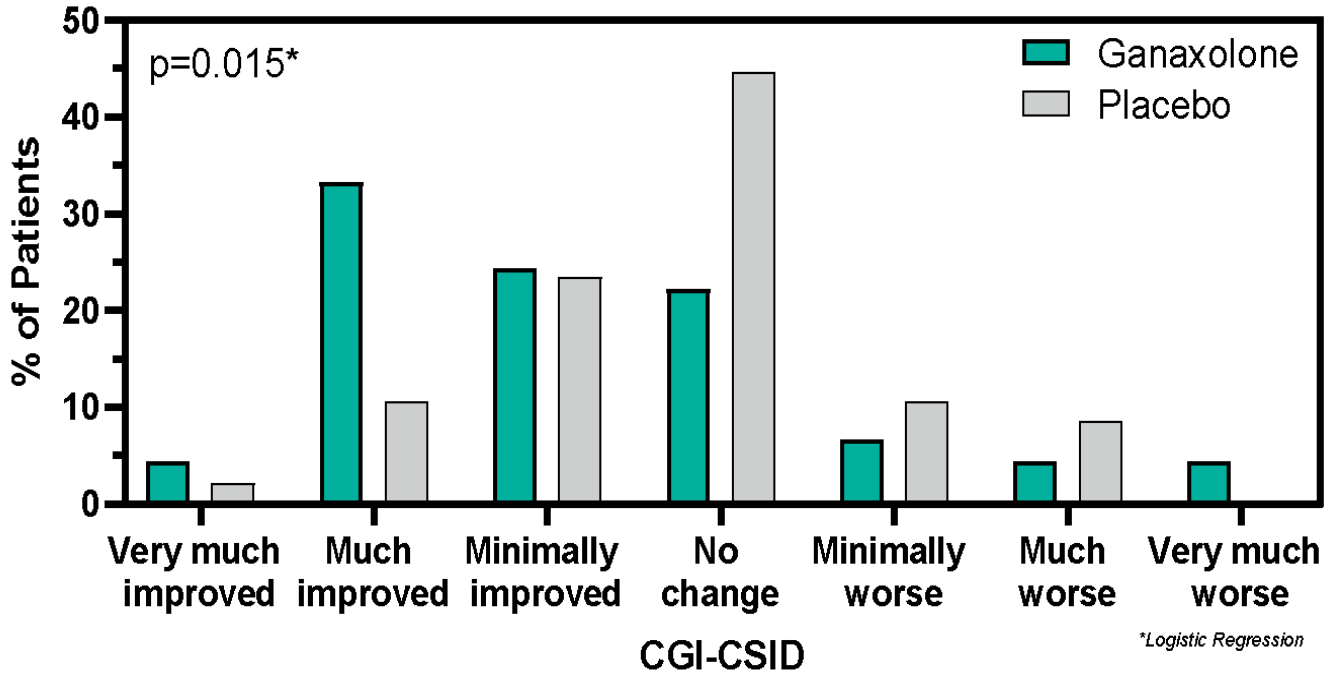
Ganaxolone Achieved Primary Efficacy Endpoint in Seizure Reduction and Secondary Endpoint for Seizure Severity

Marigold Study
CDKL5 Deficiency Disorder



*Hodges-Lehman Estimate of Median Difference
**Wilcoxon Rank-Sum Test

Caregiver Global Impression of Change in Seizure Intensity / Duration (CGI-CSID)



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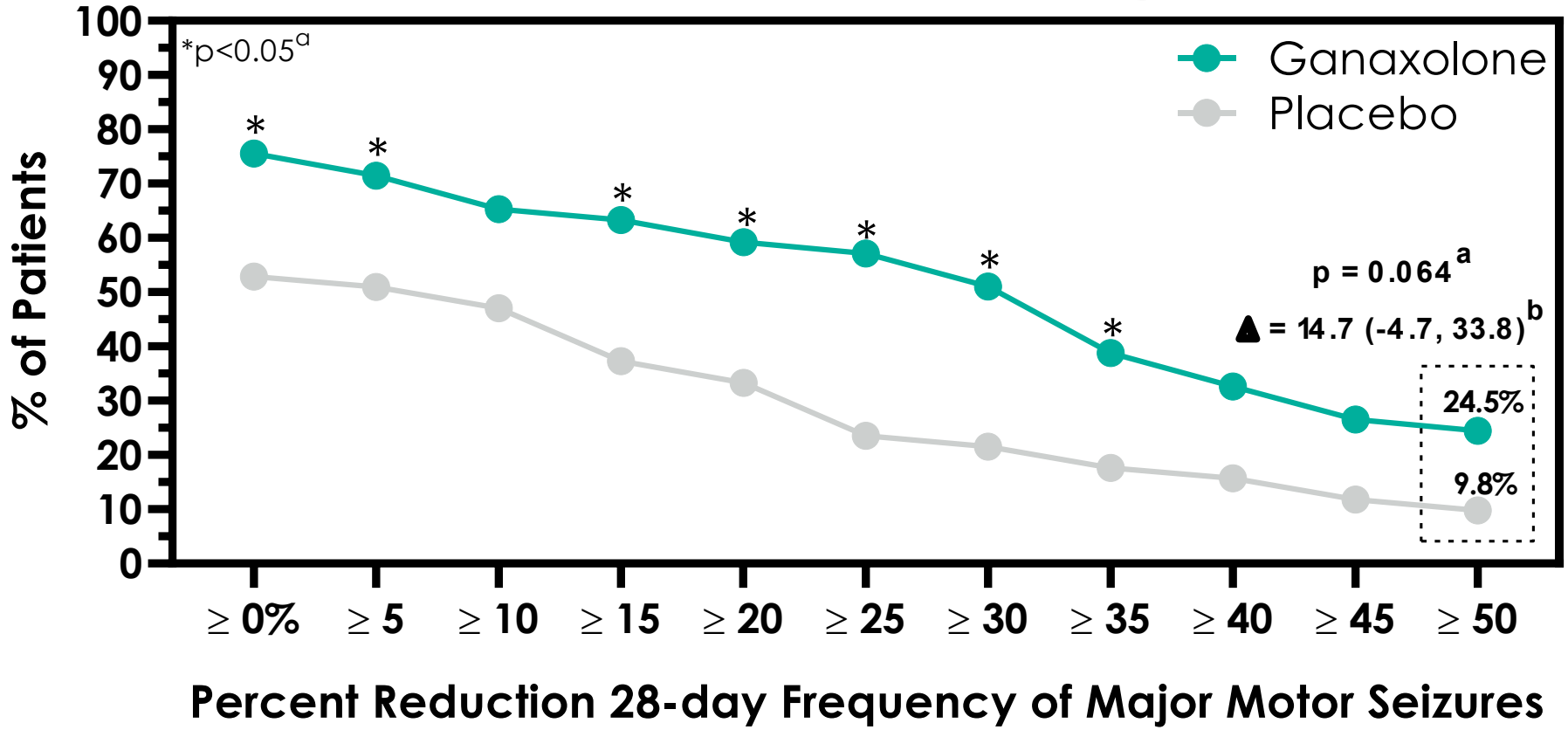
Marigold Cumulative Response Curve

Marigold Study
CDKL5 Deficiency Disorder



[a]Fisher's Exact
[b]Difference (95% CI)

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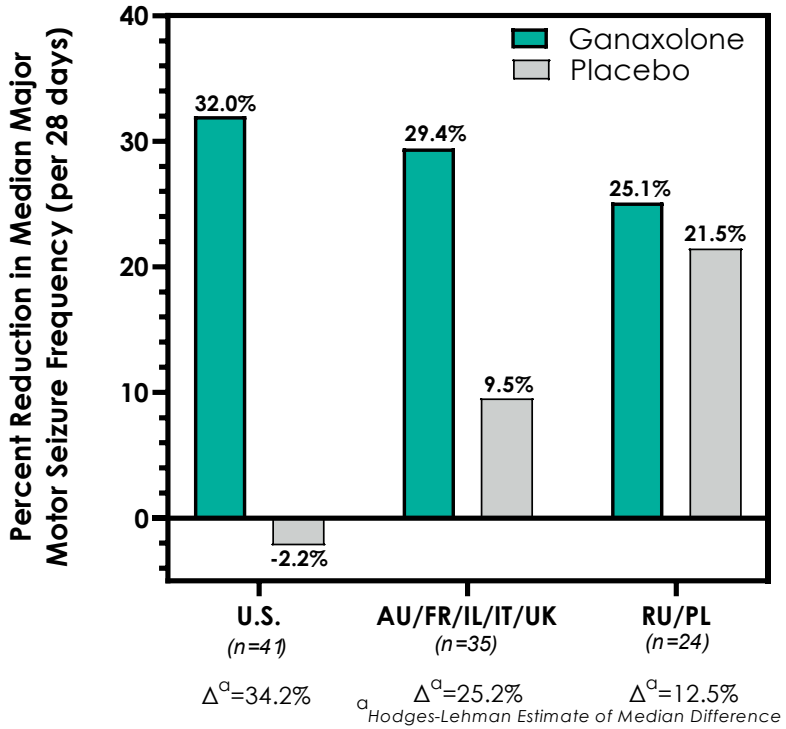
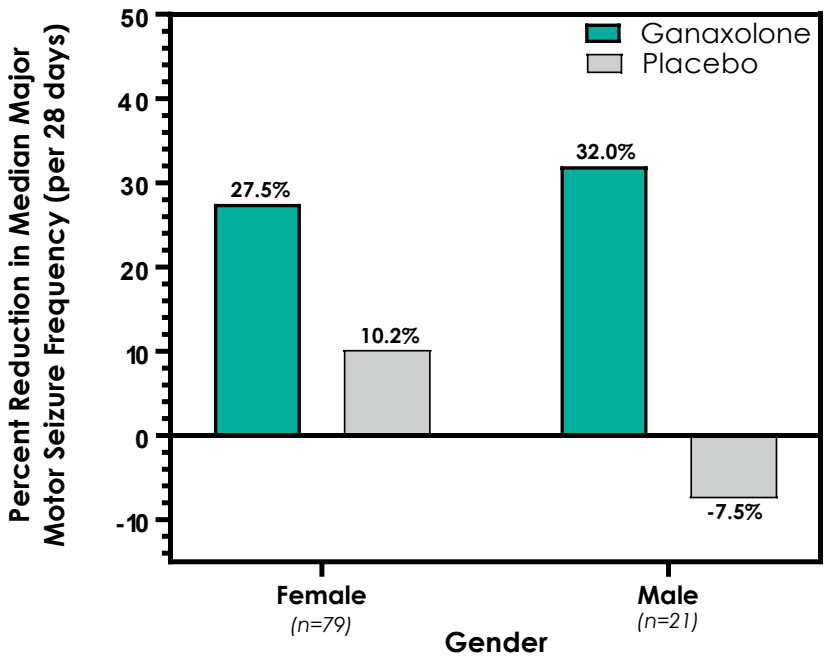
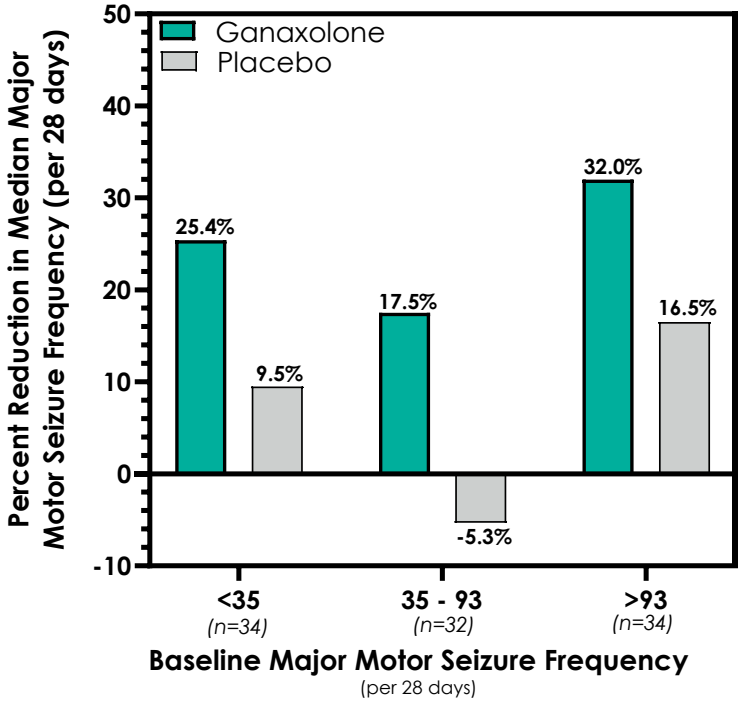
Consistent Efficacy Signal Across the Broader CDD Population

Marigold Study
CDKL5 Deficiency Disorder

- Ganaxolone demonstrated a similar efficacy signal across multiple subgroups related to baseline demographics and seizure frequency
  - Supports beneficial effect in the U.S. patient population







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Phase 3 Safety Summary

Marigold Study
CDKL5 Deficiency Disorder

Treatment Emergent Adverse Events (TEAE)

Preferred Term	Placebo (n=51)	Ganaxolone (n=50)
Any TEAE, n (%)	45 (88.2)	43 (86.0)
Somnolence	8 (15.7)	18 (36.0)
Pyrexia	4 (7.8)	9 (18.0)
Upper Respiratory Tract Infection	3 (5.9)	5 (10.0)
Constipation	3 (5.9)	3 (6.0)
Salivary Hypersecretion	1 (2.0)	3 (6.0)
Sedation	2 (3.9)	3 (6.0)

Includes AEs that occurred >5% of subjects in ganaxolone arm and ganaxolone > placebo

Serious Treatment Emergent Adverse Events

Preferred Term	Placebo (n=51)	Ganaxolone (n=50)
Any Serious TEAE, n (%)	5 (9.8)	6 (12.0)
Bronchitis	0 (0.0)	1 (2.0)
Rhinovirus Infection	0 (0.0)	1 (2.0)
Urinary Tract Infection	0 (0.0)	1 (2.0)
Pneumonia Mycoplasmal	1 (2.0)	0 (0.0)
Pneumonia Viral	1 (2.0)	0 (0.0)
Respiratory Syncytial Virus Bronchiolitis	1 (2.0)	0 (0.0)
Oxygen Saturation Decreased	0 (0.0)	1 (2.0)
Food Refusal	0 (0.0)	1 (2.0)
Pneumonia Aspiration	0 (0.0)	1 (2.0)
Hypoxia	1 (2.0)	0 (0.0)
Faecaloma	1 (2.0)	0 (0.0)
Hypotonia	1 (2.0)	0 (0.0)
Seizure	1 (2.0)	0 (0.0)
Unresponsive to Stimuli	1 (2.0)	0 (0.0)

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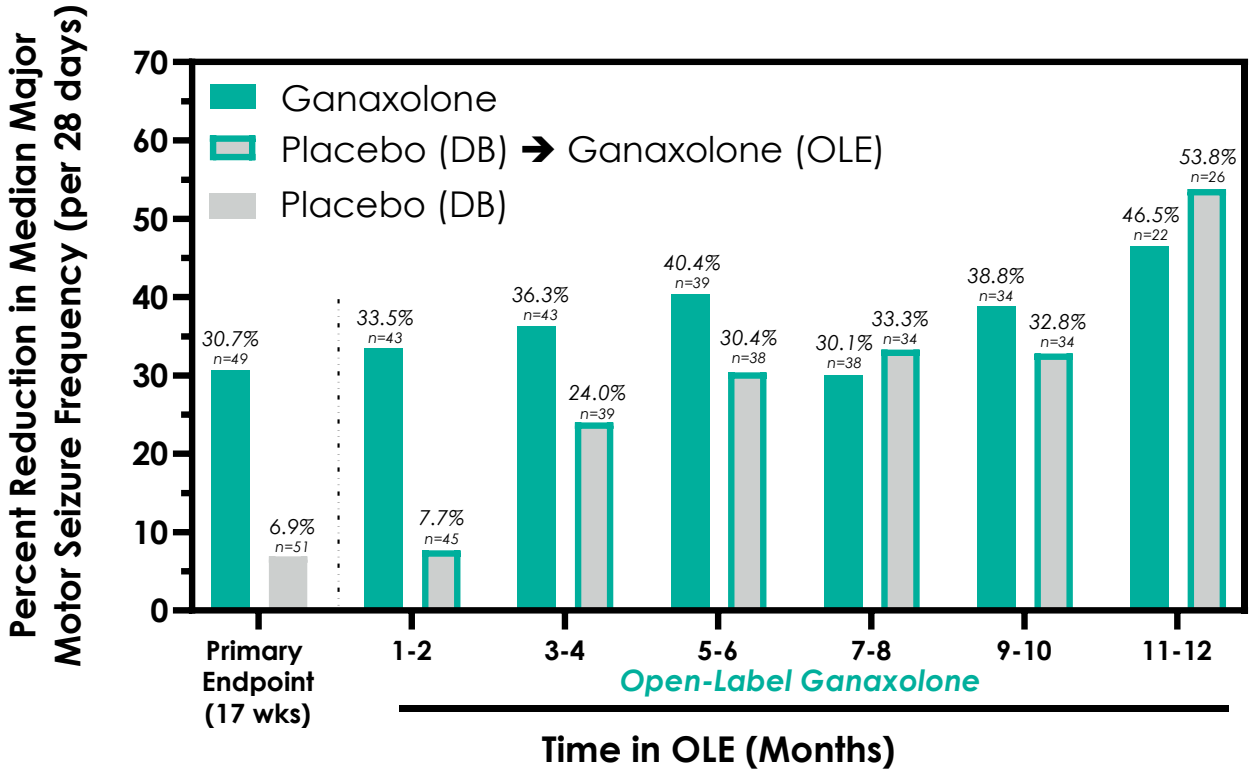
Ganaxolone's Potential to Provide Durable Seizure Improvements in the Open Label Extension

Marigold Study
CDKL5 Deficiency Disorder

- Seizures associated with CDD are often refractory to treatment with existing AEDs and improvements may be short-lived (<3 months)[1]
- Preliminary analysis* of the open-label extension (OLE) provides insights into the extended duration effects of ganaxolone (GNX) in CDD



- Patients treated with ganaxolone for at least 12 months experienced a median **49.6%** reduction in major motor seizure frequency
- Patients transitioning from placebo to ganaxolone demonstrated seizure frequency improvements
- No new safety findings emerged in the OLE to date

1. Müller A, et al. *Eur. J. Paediatr. Neurol.* 2016

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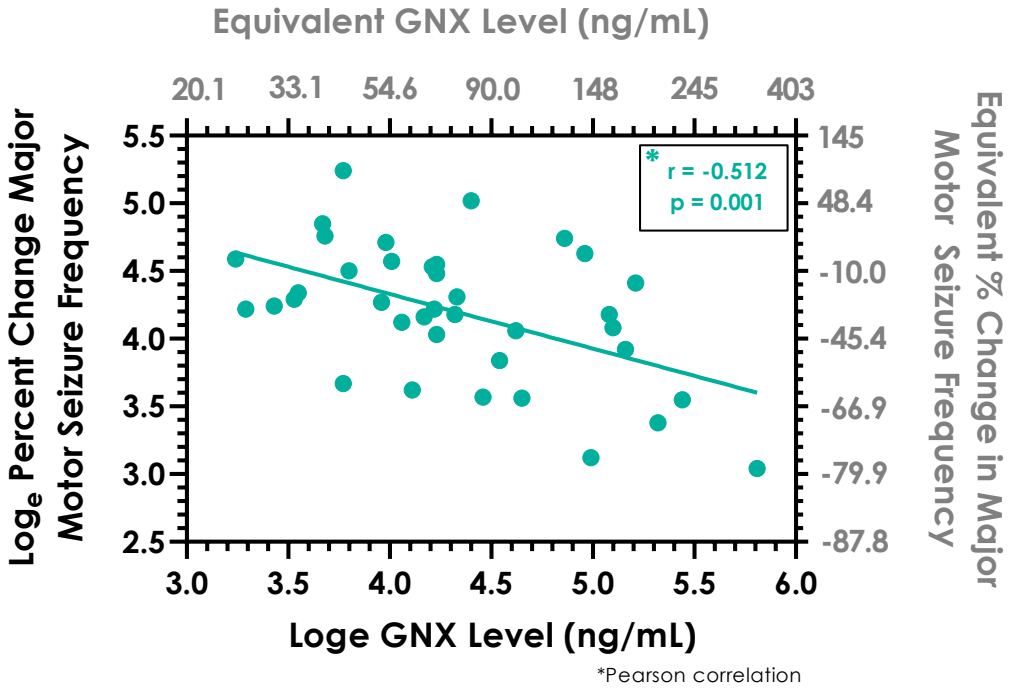
*Data as of February 24, 2021

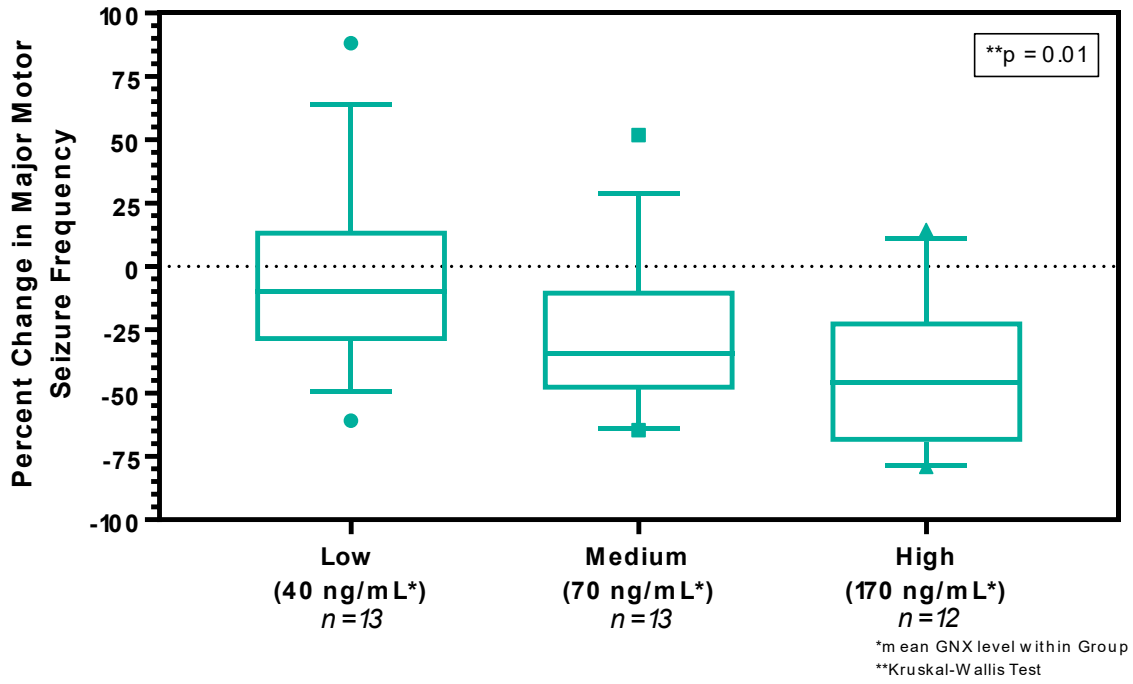
Average Ganaxolone Levels Correlate with Seizure Reduction

Marigold Study
CDKL5 Deficiency Disorder

- Logarithms of plasma GNX level and percentage change in major motor seizure frequency were negatively correlated
- Patients in the Medium and High GNX level groups had an average GNX concentration of 120 ng/mL and a median 38.5% reduction in seizure frequency
  - Incidence of CNS-related adverse events was similar across GNX dose level groups



*Pearson correlation



*mean GNX level within Group
**Kruskal-Wallis Test

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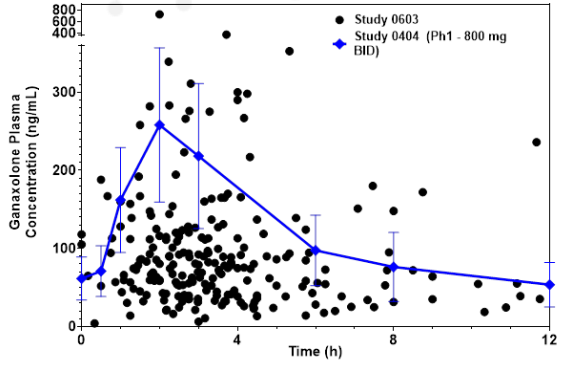
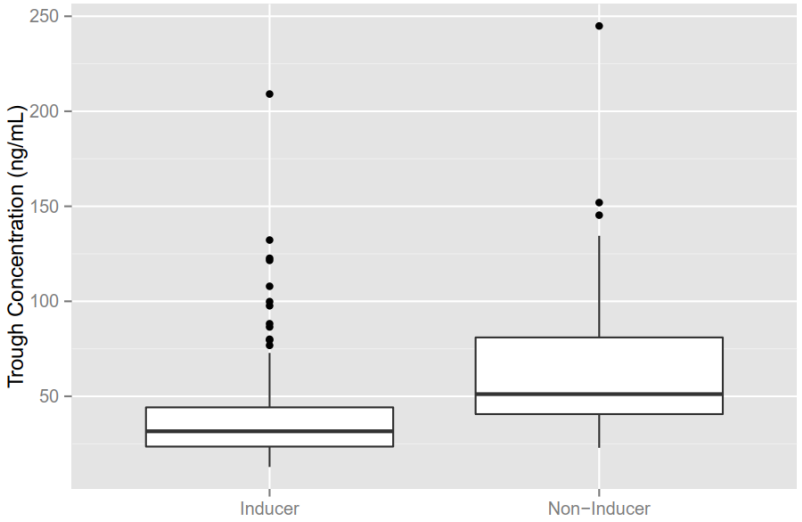
Log$_e$ percentage change in major motor seizure frequency was calculated as log$_e$(percentage change + 100)

PK Analysis: Adult Focal Onset Seizure Trial vs. Marigold

Adults Focal Onset Phase 3 Trial vs. Phase 1 PK



Lower levels than predicted from Ph1



C_{min} ~ 40-45 ng/mL ⟷ **C_{min} ~ 85 ng/mL**

Marigold Trial PK

Age Group	AUC_{24} (ng*hr/mL)	C_{min} (ng/mL)	C_{max} (ng/mL)
2 to <6 years	3903	85	247
6 to <12 years	3998	84	269
12 to <18 yrs	4106	84	293
≥18 years	4100	84	292

Abbreviations: AUC_{24}=24-hour area under the ganaxolone plasma concentration time curve; C_{max}=maximum ganaxolone plasma concentration; C_{min}=minimum ganaxolone plasma concentration.

Adult focal onset program was discontinued as noted in the 10-Q

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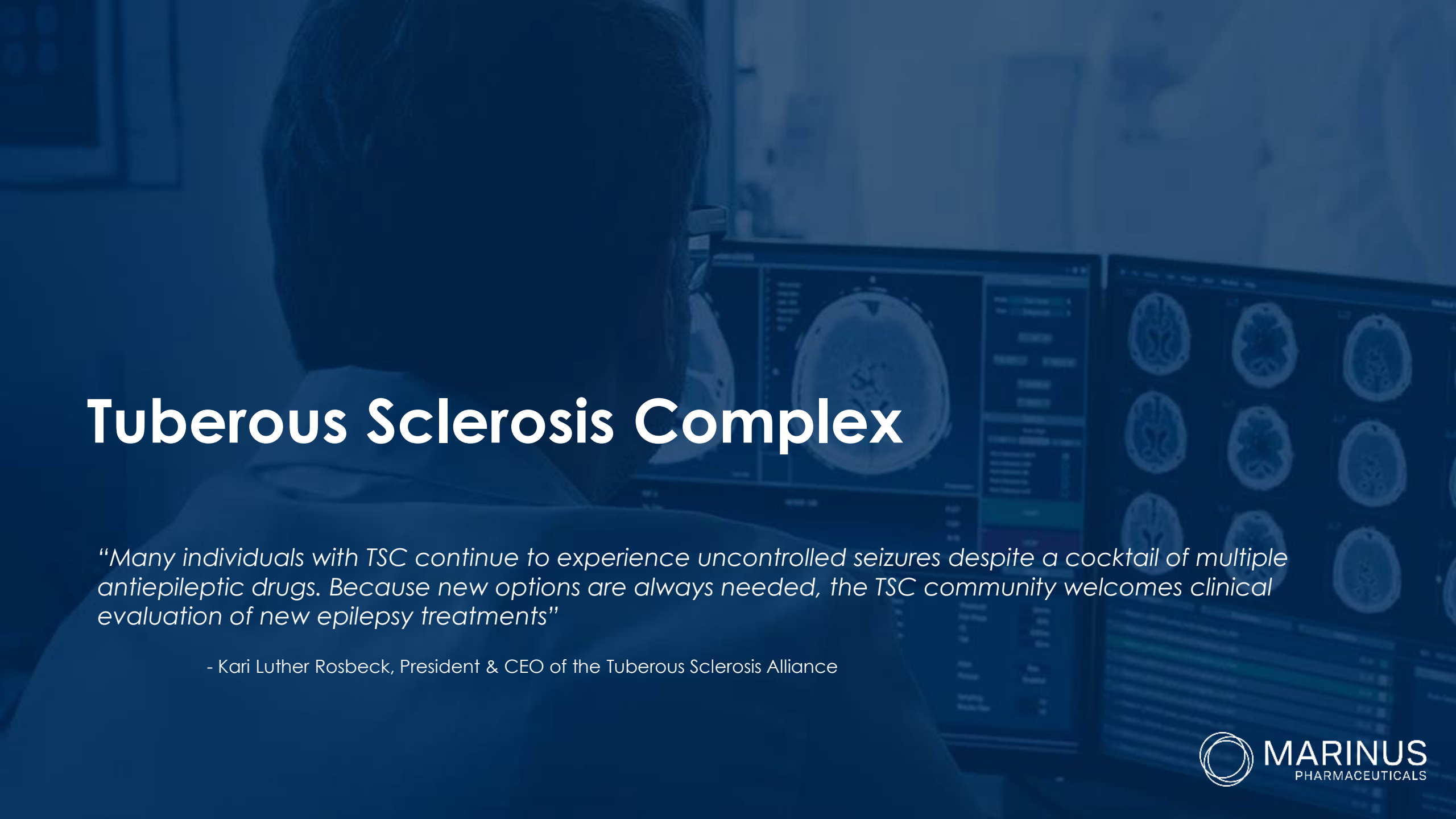

Tuberous Sclerosis Complex

"Many individuals with TSC continue to experience uncontrolled seizures despite a cocktail of multiple antiepileptic drugs. Because new options are always needed, the TSC community welcomes clinical evaluation of new epilepsy treatments"

- Kari Luther Rosbeck, President & CEO of the Tuberous Sclerosis Alliance

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Tuberous Sclerosis Complex (TSC)

Cause	• Defect or mutation of *TSC1* and/or *TSC2* genes
Symptoms	• Benign tumors, seizures, cognitive impairment, behavioral problems, skin abnormalities
Incidence **Prevalence**	• 1:6,000 live births • ~25K-40K refractory TSC patients in the U.S.*
Treatments	• Despite available treatments, continued unmet medical need
Mechanistic Rationale	• Potential neurosteroid deficiency[1] • Pathophysiology may involve GABAergic dysfunction

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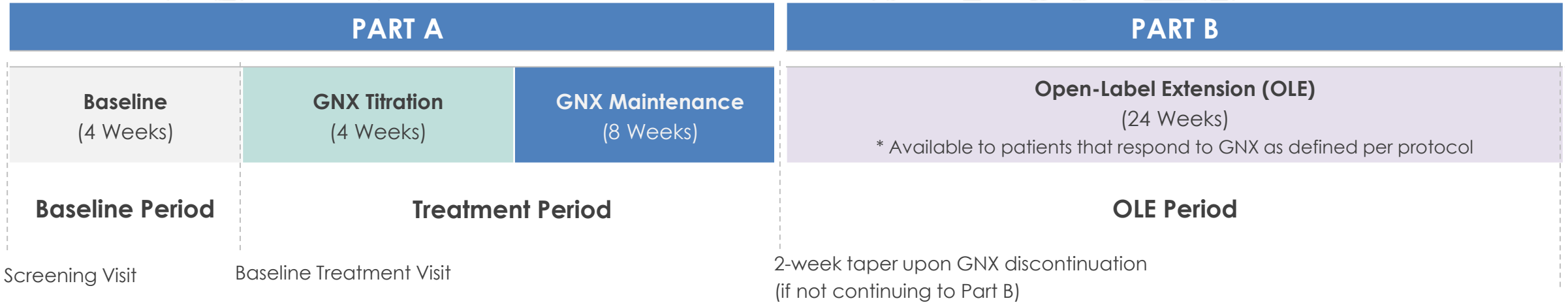
[1] diMichele, et al, *J. Neuro Neurosurg Psychiatry*, 2003

*Failure of two prior antiseizure medications with ongoing, frequent seizures.

TSC - Phase 2 Open-Label Clinical Trial Design

CALM STUDY
TSC-Related Epilepsy (ganaxolone)



- **n = Approx. 25**
- **8 U.S. sites**
- **Electronic diaries will be used for data capture**
- At least 8 seizures per month
- **Primary efficacy endpoint:** % change in 28-day primary seizure frequency through the end of 12-week treatment period relative to 4-week baseline period
- Patient enrollment to be completed March 2021
- **Top-line data expected Q3 2021**

Primary seizure types: focal motor seizures without impairment of consciousness or awareness, focal seizures with impairment of consciousness or awareness, focal seizures evolving to bilateral generalized convulsive seizures, and generalized seizures with a motor component that are countable

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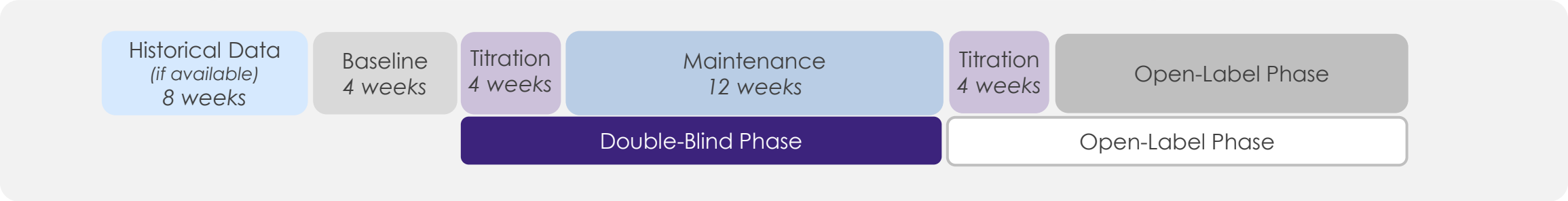
Proposed Phase 3 TSC Trial Design



- **Trial Details**

  Evaluates the use of oral ganaxolone in children and adults with seizures associated with TSC

  Global, double-blind, placebo-controlled clinical trial

  Aims to enroll ~160 total patients between the ages of 1 and 65 (1:1 randomization)

  Up to 60 sites, including ex-US (e.g., EU, Canada, Australia, Russia).

  Projected first patient enrolled in Q4

- **Primary Efficacy Endpoint**

  Percent change in 28-day primary endpoint seizure frequency*

* Primary endpoint seizure types: focal motor seizures without impairment of consciousness or awareness, focal seizures with impairment of consciousness or awareness, focal seizures evolving to bilateral generalized convulsive seizures, and generalized seizures with a motor component that are countable

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Formulation Development

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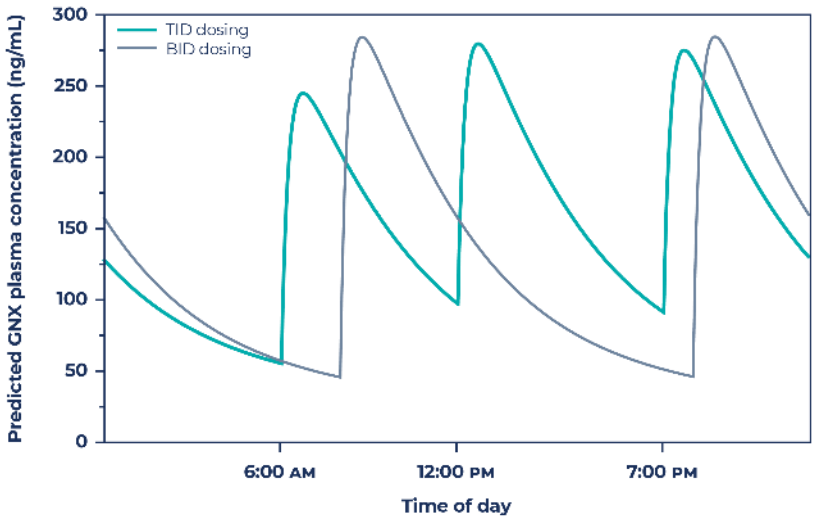
Efforts to Improve Ganaxolone Exposure in Chronic Epilepsies

- **Dosing regimen:** Marigold Study was the first Phase 3 trial of ganaxolone to evaluate three times a day (TID) dosing
  - Predicted pharmacokinetic (PK) curves for TID and two times a day (BID) dosing demonstrate increase trough GNX levels which may provide improved seizure control



Dose regimen	C_{max} (ng/mL)	AUC_{0-24} (ng · h/mL)	% time (>100 ng/mL GNX)
TID	281	3763	**78**
BID	286	3135	**53**

- Support the continued study of ganaxolone TID dosing in other epilepsies
- **Formulation development:** new oral ganaxolone formulations in development that aim to improve PK properties to better achieve target ganaxolone levels

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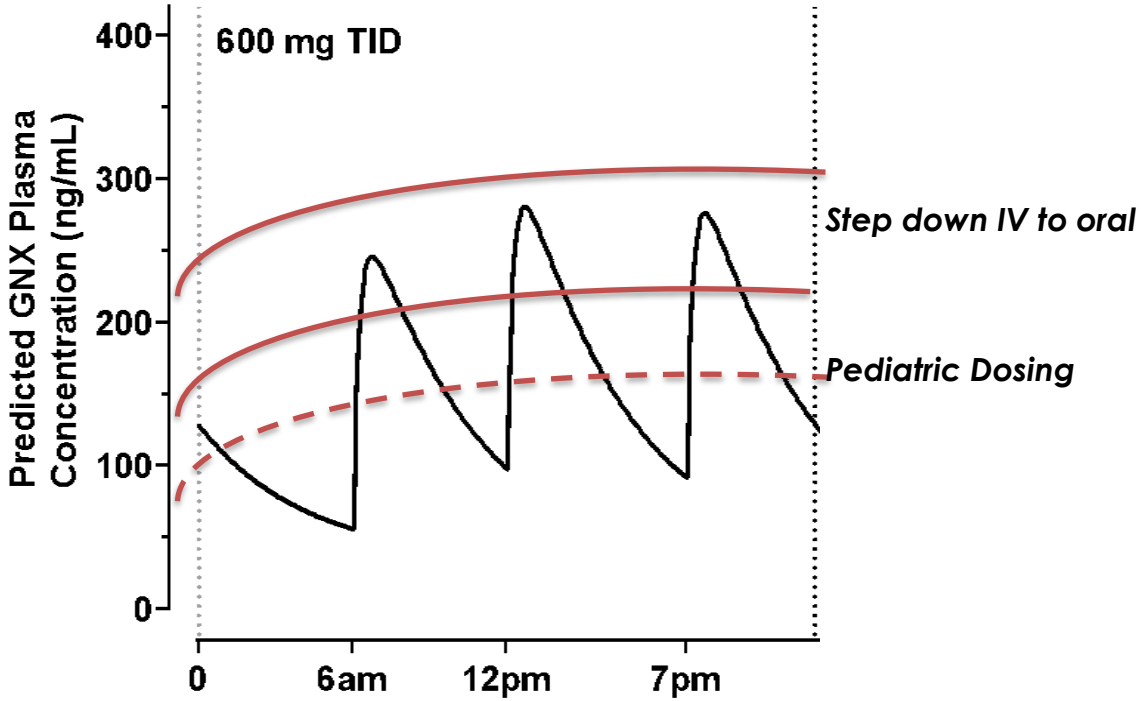
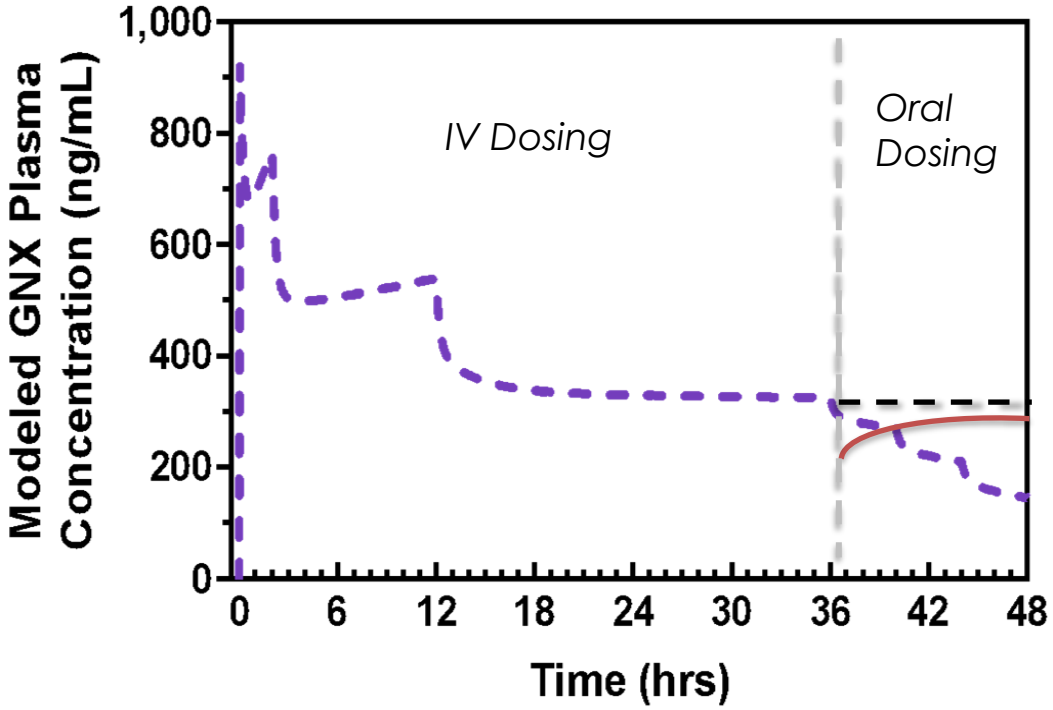
Ganaxolone Formulation Work in Progress for Second Generation Candidate

- Exploring opportunities to improve bioavailability and PK profile
- Potential expansion into new indications and into new therapeutic areas
- Targeting IV-to-oral step down for patients that may benefit from continued therapy





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Commercial Opportunity

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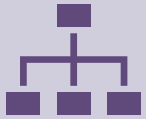
Commercialization Preparedness

Refining and Optimizing Value Proposition for Market Testing with key stakeholders – Providers, Payers



Developing organizational and infrastructure needs – home office, field, systems and processes

Readying supply chain to support patient services, channel strategy and scale up needs

Evaluating Life Cycle plans to scale up Access, Scientific Affairs and Commercial teams

Key Objectives is to create operational leverage across indications

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*TPP – Target Product Profile

Key Findings from Recently Conducted Market Research Show that Ganaxolone is Well Suited for Broad Clinical Adoption Across Indications

Mechanism of Action	Ganaxolone's extrasynaptic mechanism of action well understood and viewed as differentiable
TPP Reactions	Many HCPs are excited about the opportunity to use ganaxolone, especially for CDD, given favorable reactions to its efficacy and durability data, and safety profile
Primary Usage Drivers	• Disease-specific indication, response rate, and durability of response in a highly refractory patient population • Ability to be used with antiseizure medications across mechanisms (i.e., sodium channel blockers, GABA transmission inhibitors, cannabidiol) in refractory patients
Awareness	**Neurologists who treat both CDD and TSC patients had high awareness of ganaxolone**

Source: ZS Associates Primary Research and Analysis (N=35 HCP Interviews), (TPP – May 2020; other market research – June 2020)

Status Epilepticus

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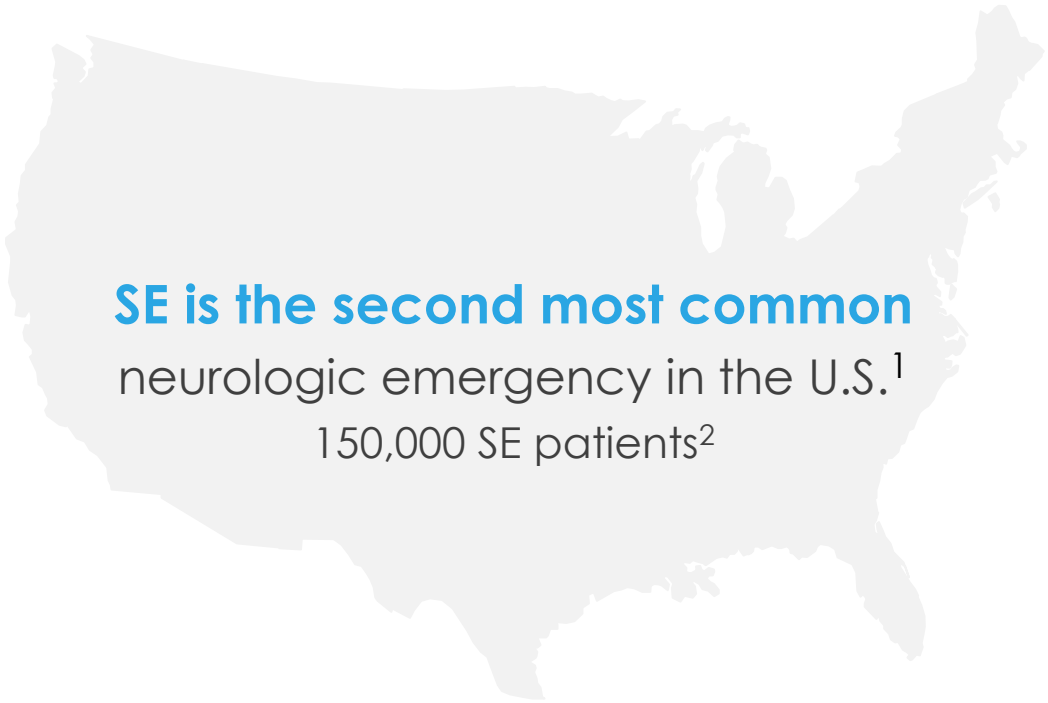
Status Epilepticus (SE): Definition and Epidemiology



SE is the second most common
neurologic emergency in the U.S.[1]
150,000 SE patients[2]

Background

- Prolonged continuous seizures
- Heterogenous patient population with various etiologies, including glioblastoma, vascular disease, encephalitis, drug or alcohol withdrawal or overdose
- Pre-existing epilepsy in less than half of SE cases
- Status epilepticus can result in permanent neuronal damage and contribute to high morbidity and mortality
- Becomes more treatment refractory with progression

1. Anaethesia and Intensive Care Medicine, February 02, 2018 , *Update on the management of status epilepticus*
2. DeLorenzo RJ Pellock JM Towne AR Boggs JG. *Epidemiology of status epilepticus.* J Clin Neurophysiol. 1995; 12: 316-325

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Goals of a New Therapy for the Treatment of SE

1st line

Benzodiazepine Administered

Established Status Epilepticus (ESE)

2nd line

IV AED's (antiepileptic drugs)

Refractory Status Epilepticus (RSE)

IV GNX

Medically induced Coma

3rd line

IV Anesthetics

Super Refractory Status Epilepticus (SRSE)

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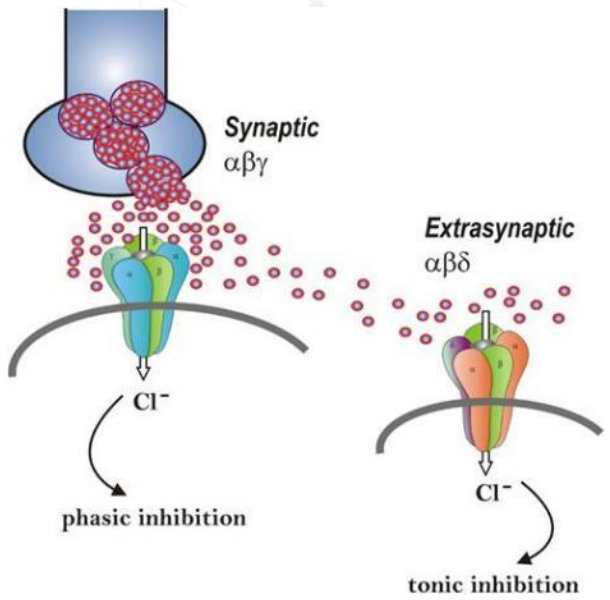
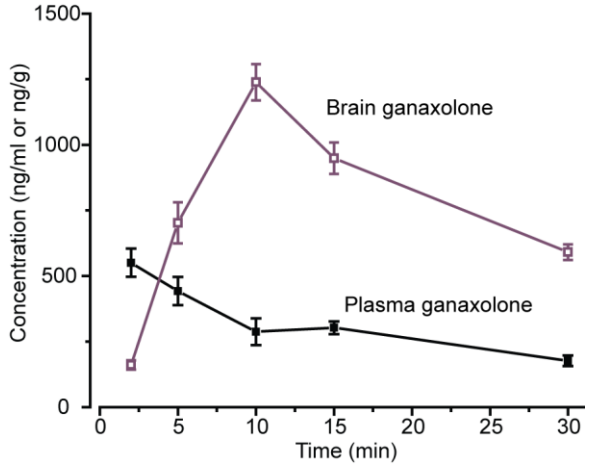
Pharmacokinetics/Pharmacodynamics Well Suited for Acute SE Treatment



Ganaxolone activates the extrasynaptic $GABA_A$ receptor, is associated with high brain concentrations, and delivers a rapid onset of action

Experimental PK – plasma and brain[1]



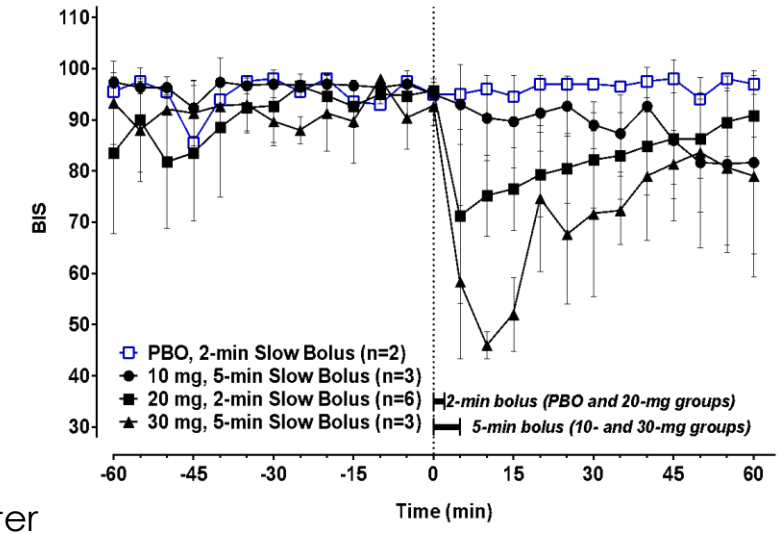
Brain and plasma concentration after ganaxolone 3 mg/kg IM in mice

Human PK[2]

Following 20 mg ganaxolone bolus (over 2 minutes):

C_{max} 1,240 ng/mL
T_{max} 0.08 hrs

Human PD – EEG changes[2]



EEG bispectral index in healthy volunteers following IV ganaxolone

1. Zolkowska D, Wu CY, Rogawski MA. Intramuscular allopregnanolone and ganaxolone in a mouse model of treatment-resistant status epilepticus. Epilepsia. 2018 Oct;59:220-7.
2. Data on file, Marinus Pharmaceuticals, inc.

Phase 2 RSE Trial Design

Evaluate IV ganaxolone in refractory SE patients

SE Patients

Diagnosis of convulsive or non-convulsive SE

Failed at least one 2nd line IV AED but had not progressed to 3rd line IV anesthetics

Screening → Treatment Period → Post-treatment Follow-up

Treatment Period			Post-treatment Follow-up	
Loading Dose	Maintenance	Taper	24 hour	Weeks 2, 3, 4
Bolus plus continuous infusion	2-4 day infusion	18-hour taper		

Cohort	Dose of GNX/day	N
Low	500mg/day	5
Medium	650mg/day	4
High	713mg/day	8

Goals of a new treatment

Rapid cessation

Maintenance of seizure control

Prevent progression to IV anesthetics

Limitations of current treatments

1st line Benzodiazepines ineffective in 45%-50%; limited by cardiovascular and respiratory side effects

2nd line Ineffective in over 50% of established SE; further decreased response in refractory SE

3rd line IV Anesthetics: high morbidity, mortality ~35%; increased duration of hospitalization and costs of care

Endpoints

Primary: Percent of patients who did not require escalation of treatment with IV anesthetic within the first 24 hours after ganaxolone initiation

Secondary: Additional efficacy, safety and tolerability

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Patient Demographics of Phase 2 Trial

17 patients enrolled

8 males, 9 females

Mean age: 57 years old (range: 23-88)

History of Epilepsy

7 (41%) yes, 10 (59%) no

Types of SE

5 (29%) CSE,
11 (65%) NCSE,
1 (6%) CSE→NCSE

Mean # of failed first-and-second line IV AEDs (including benzodiazepines)

2.9 (range: 2-5)

Mean # of failed 2nd-line IV AEDs

- 2.1 (range: 1-4), all failed LEV or LAC
- 14/17 patients failed two or more 2nd-line AEDs
- All prior AEDs were administered within recommended dosing guidelines

Etiologies

7 Vascular
4 Tumor
2 Autoimmune
2 Drug overdose
2 Unknown

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Phase 2 Trial Results Demonstrated Rapid Onset And Durability of Effect

Cohort	No escalation to IV anesthetics within 24 hours from infusion initiation (Primary Endpoint)	Status-free through 24 hours from infusion initiation (investigator determination)	No escalation to additional IV AEDs or IV anesthetics for status relapse at any time through 24 hours after ganaxolone discontinuation	No SE Relapse at anytime during the 4-wk follow up period
High (713 mg/day) *(n=8)*	**100%** (8 of 8)	**88%** (7 of 8)	**100%** (8 of 8)	**100%** (6 of 6) *(1ET, 1 died)*
Medium (650 mg/day) *(n=4)*	**100%** (4 of 4)	**100%** (4 of 4)	**75%** (3 of 4)	**67%** (2 of 3) *(1 ET)*
Low (500 mg/day) *(n=5)*	**100%** (5 of 5)	**100%** (5 of 5)	**60%** (3 of 5)	**50%** (1 of 2) *(1 died)*

Immediate Prior AED Administered 4 Hours (mean) to ganaxolone treatment

SE Cessation Occurred Rapidly in All Dose Groups *(median = 5 minutes)*

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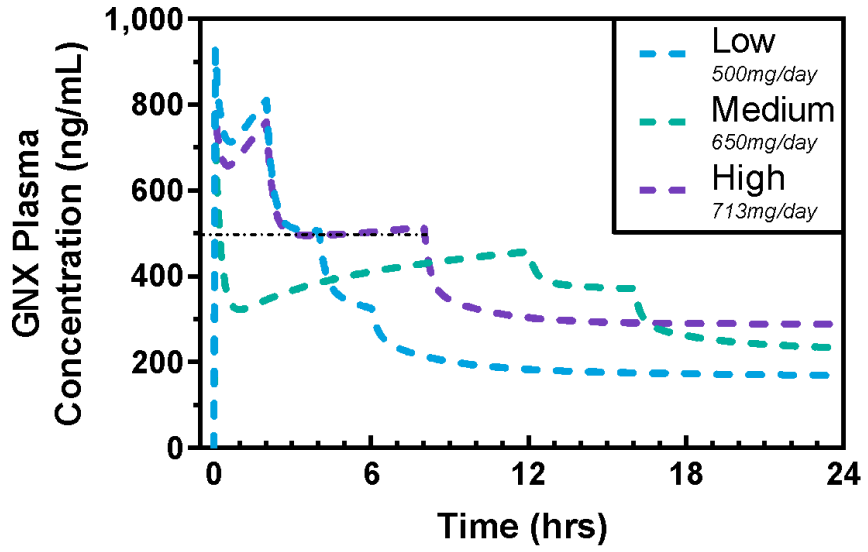
Data presented at AES 2019
AEDs – antiepileptic drugs

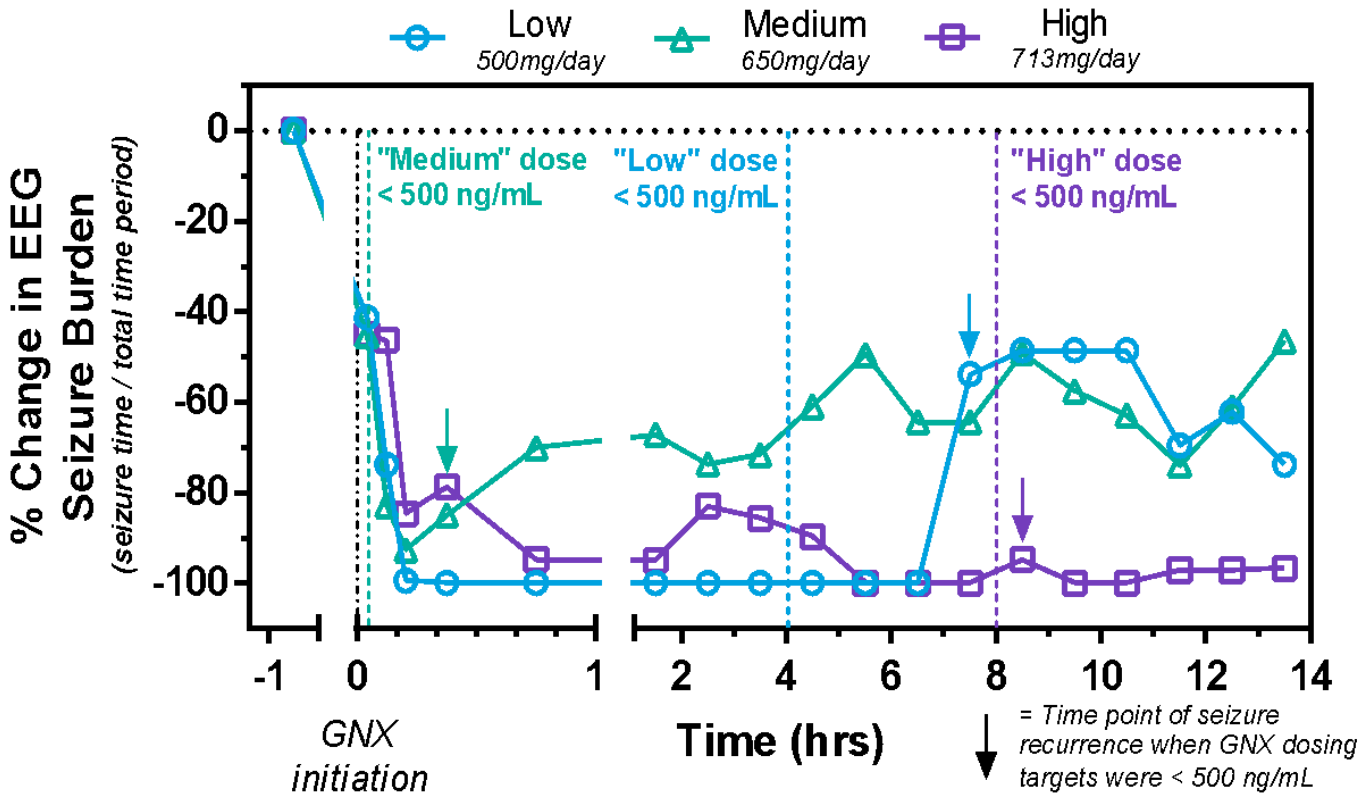
PK/PD Relationship and Rationale for Target Dose

Modeled PK Curves for All Dose Groups



High Dose Achieves Target Range
≥ 500 ng/mL for ~8 hours

Seizure Burden Reduction Occurred Rapidly in All Dose Groups



Only **High Dose** Provided Sustained Reduction (>80%) Throughout Entire Analysis Window

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Data presented at AES 2019
PK: Pharmacokinetics / PD: Pharmadynamic

IV Ganaxolone Safety Summary

10 SAEs in 6 patients (also included in AEs)

2 related in 2 patients

- 2 severe sedation

8 non-related in 4 patients

- 1 Death due to withdrawal of life support
  - 1 Respiratory depression
- 1 Bowel perforation (fatal)
- 1 Sepsis (fatal)
- 1 Fall
  - 1 Loss of consciousness
  - 1 Pneumothorax
  - 1 Multiple fracture

50 AEs in 16 patients

13 related in 7 patients

- 6 mild (2 hypotension, 2 somnolence, 1 urinary retention, 1 hypercarbia)
- 5 moderate (4 somnolence; 1 hypercarbia)
- 2 severe (2 sedation)

37 not-related in 12 patients

- 20 mild
- 8 moderate (2 pain; 2 pneumonia, 2 dysphagia,
- 1 delirium, 1 hypertension)
- 9 severe (respiratory depression, death due to withdrawal of support, sepsis, embolic stroke, perforated bowel, fall, loss of consciousness, multiple fractures, pneumothorax)

Intubation:

9 patients were not intubated upon enrollment. Of these, 6 remained intubation-free during the entire ganaxolone treatment period

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Data presented at AES 2019
AE: adverse event / SAE: serious adverse event

Overview of U.S. Phase 3 RSE RAISE Trial Design

raise

Trial design	• Randomized, placebo-controlled (adjunctive to standard-of-care) clinical trial
Target patient population	• Status epilepticus patients (n=124) who have failed benzodiazepines and ≥ 2 IV AEDs
Dosing	• 36-hour infusion followed by a 12-hour taper (48-hour treatment) • Phase 2 dose paradigm and extends ganaxolone plasma exposure ≥ 500 ng/mL for 12 hours
Co-primary endpoints	• Proportion of participants with SE cessation within 30 minutes of study drug initiation without medications for the acute treatment of SE • Proportion of participants with no progression to IV anesthesia for 36 hours following study drug initiation
Secondary endpoints	• No progression to IV anesthesia for 24 hours off study drug (i.e., 72 hours) • Time to SE cessation • Healthcare utilization metrics (eg, length of stay, # of days in the ICU) • Functional outcomes • Safety measures

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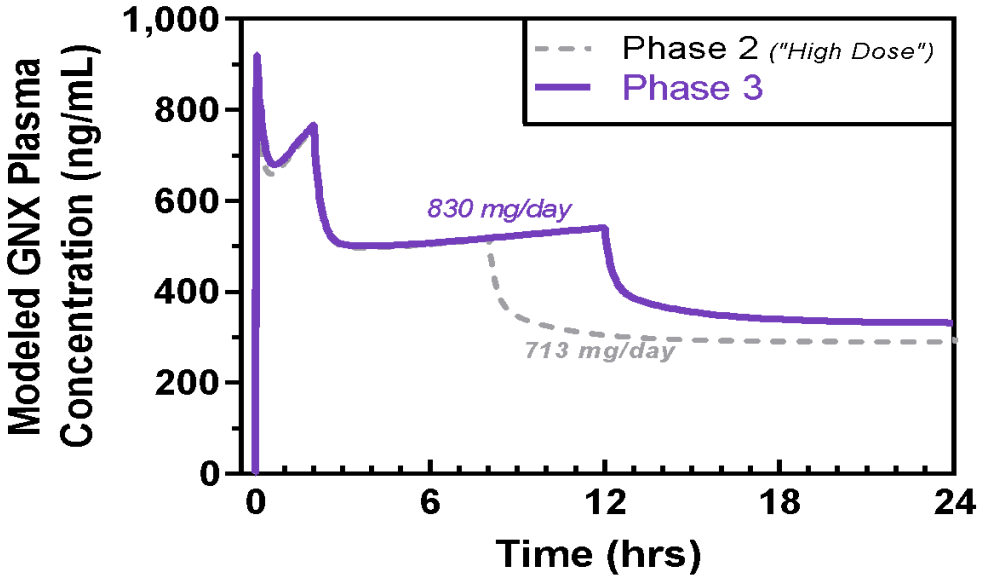
RSE Phase 3 RAISE Clinical Planning

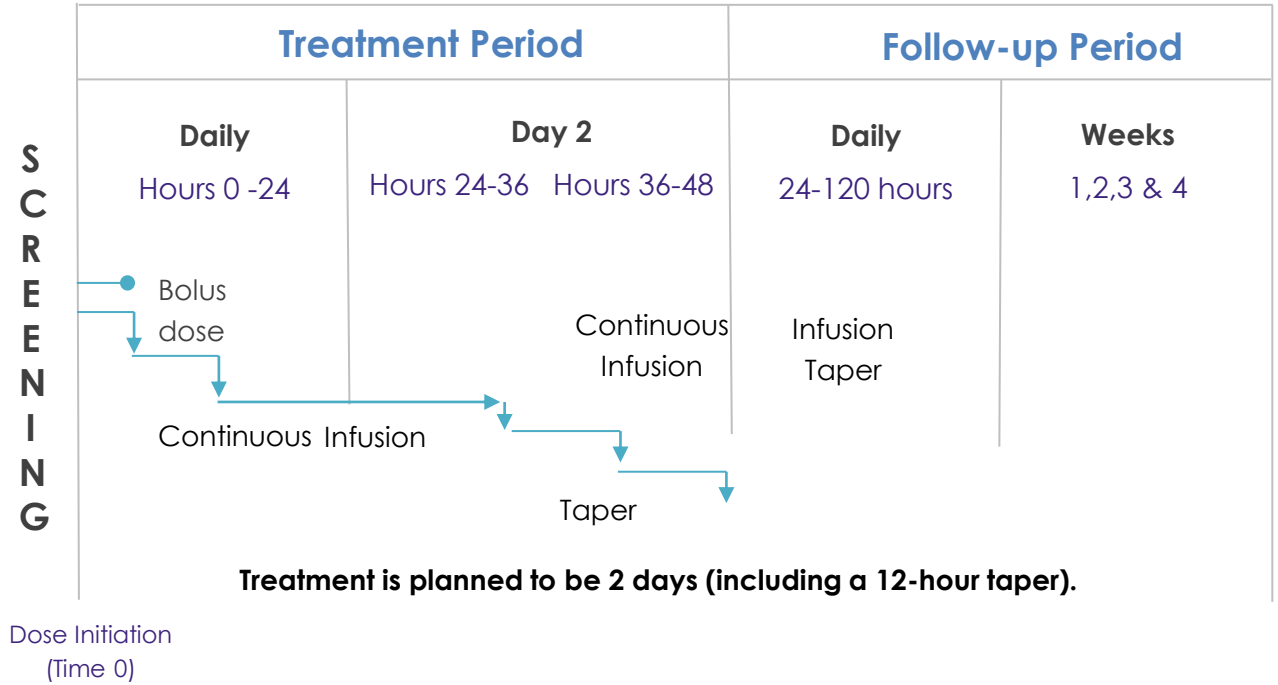
Phase 3 Target Plasma Concentration



Trial Overview

- 1:1 randomized, double-blind, placebo-controlled trial
- Failure of a benzodiazepine and 2 second-line IV AEDs
- 3-minute bolus, 36-hour infusion, 12-hour taper
- Approx. 125 randomized patients
- 80-100 sites

Currently recruiting patients
Topline data expected 1H 2022



Treatment is planned to be 2 days (including a 12-hour taper).

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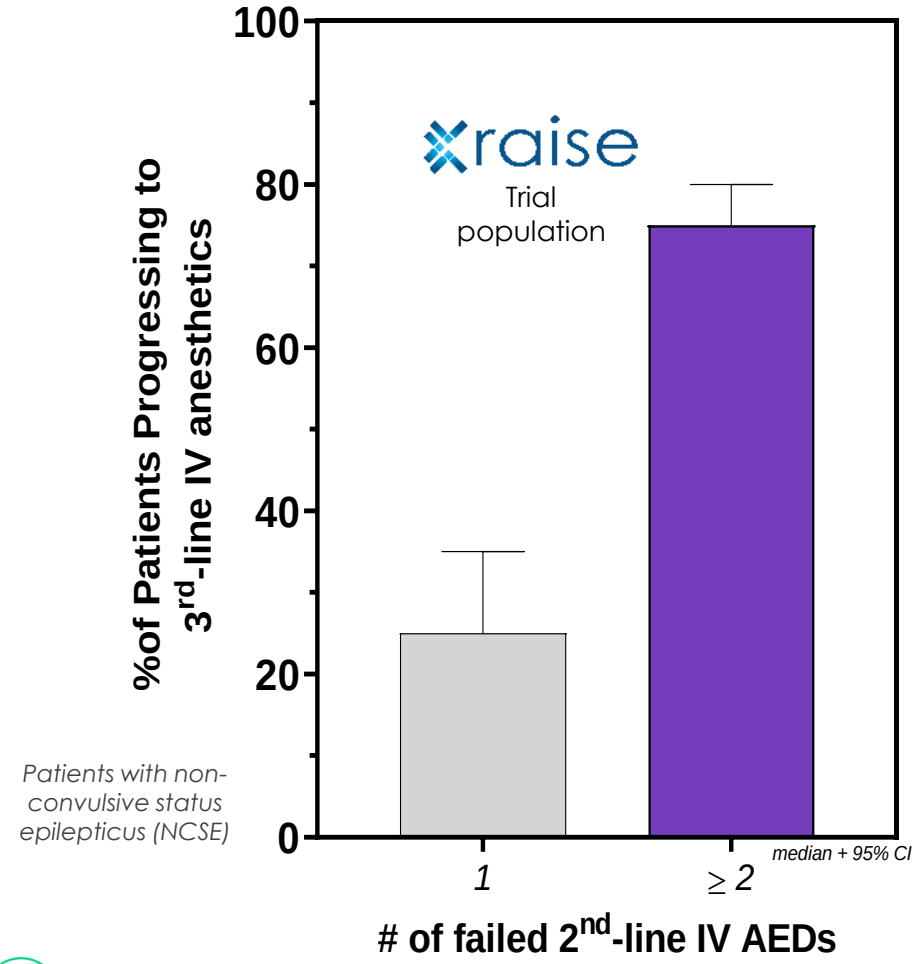
RAISE Trial Sites Standard of Care Progression to IV Anesthesia

- Surveyed PI's at selected RAISE Trial sites to learn more about their standard of care natural history progression to IV anesthesia following the failure of one versus more than one 2nd-line IV AEDs



Patients with non-convulsive status epilepticus (NCSE)

Of those that escalate to 3rd-line IV anesthesia, they do so in

~2.5 hours

median

following failure of the second 2nd-line IV AED

- Clear unmet medical need in patients that fail two or more 2nd line IV AEDs
- Guides site selection and approximates placebo response for escalation to IV anesthesia co-primary

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Commercial Opportunity

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Quantifying the Significant Clinical and Economic Burden of RSE

The Phase 3 trial of ganaxolone in refractory SE aims to demonstrate rapid onset of action capable of preventing escalation to IV anesthetics, and downstream associated clinical outcomes

Treatment with IV anesthetics has been reported to lead to increased length of hospital admission and risk of infections, new disability, and death[1-3]

Pharmacoeconomic opportunity to quantify cost of care and characterize clinical outcomes based on treatment progression to IV anesthetics

To support value-based economics / approach will be a key tool with reimbursement experts

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[1] Sutter R *et al.* 2014 *Neurology*
[2] Hawkes MA *et al.* 2019 *Crit. Care Med.*
[3] Marchi NA *et al.* 2015 *Crit. Care Med.*

High Cost of Care Currently Associated with RSE Population

Ganaxolone may provide an opportunity to reduce hospital costs and save lives by altering how medicine is practiced

Clinical Outcomes

Metric	Cohort 1 (≤ 1 IV AED)	Cohort 2 (> 1 IV AED)	Cohort 3 (≥ 1 IV anesthetic)	All
Unique RSE patient encounter, N (%)	14,694 (33.4)	10,140 (23.1)	19,154 (43.5)	43,988 (100)
Discharge disposition (%)				
Expired*	4.6	6.3	18.9	11.2
Hospital-acquired condition (%Y)	14.0	19.4	23.1	19.2
Catheter-associated UTI (%)	12.0	17.4	18.3	16.0
Miscellaneous infection‡ (%)	1.6	1.7	4.3	2.8
Vascular catheter-associated infection‡ (%)	0.2	0.2	0.4	0.3
Mechanical ventilator -associated complication (%)	0.2	0.2	1.6	0.8

Utilization and Cost Outcomes

Metric	Cohort 1 (≤ 1 IV AED)	Cohort 2 (> 1 IV AED)	Cohort 3 (≥ 1 IV anesthetic)	All
Unique RSE patient encounter, N (%)	14,694 (33.4)	10,140 (23.1)	19,154 (43.5)	43,988 (100)
Hospital length of stay (LOS) (days)				
Mean*	4.7	7.2	12.0	8.4
Median*	3	4	8	5
ICU LOS *(for ICU patients only)*				
Mean*	2.7	3.1	6.6	5.4
Median*	2	2	4	3
Total hospital cost* ($USD)				
Mean*	$11,532	$18,328	$41,858	$26,304
Median*	$6,812	$10,592	$24,105	$13,201

Marinus estimates that safe and effective therapeutics that prevent progression to SRSE (i.e., treatment with IV anesthetics) may reduce mortality rates and hospital costs

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*Indicates p<0.05 across all pairwise comparisons
‡Indicates p<0.05 C1 or C2 vs. C3

Source: Guteran EL 2021 JAMA Neurol.

Status Epilepticus Development Plan

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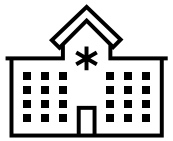
Status Epilepticus Patient Populations & Development Plan

Convulsive SE
(45% of total SE population)[1]



Non-Convulsive SE/ Focal SE
(55% of total SE population)[1]

ESE Phase 2 Trial

Emergency Dept. | ICU

Benzodiazepines | IV AED's | IV Anesthetics

~15% transition to NCSE/Focal SE

Benzodiazepines | IV AED's | IV Anesthetics

Emergency Dept. / ICU | ICU / Neuro ICU

raise II | raise

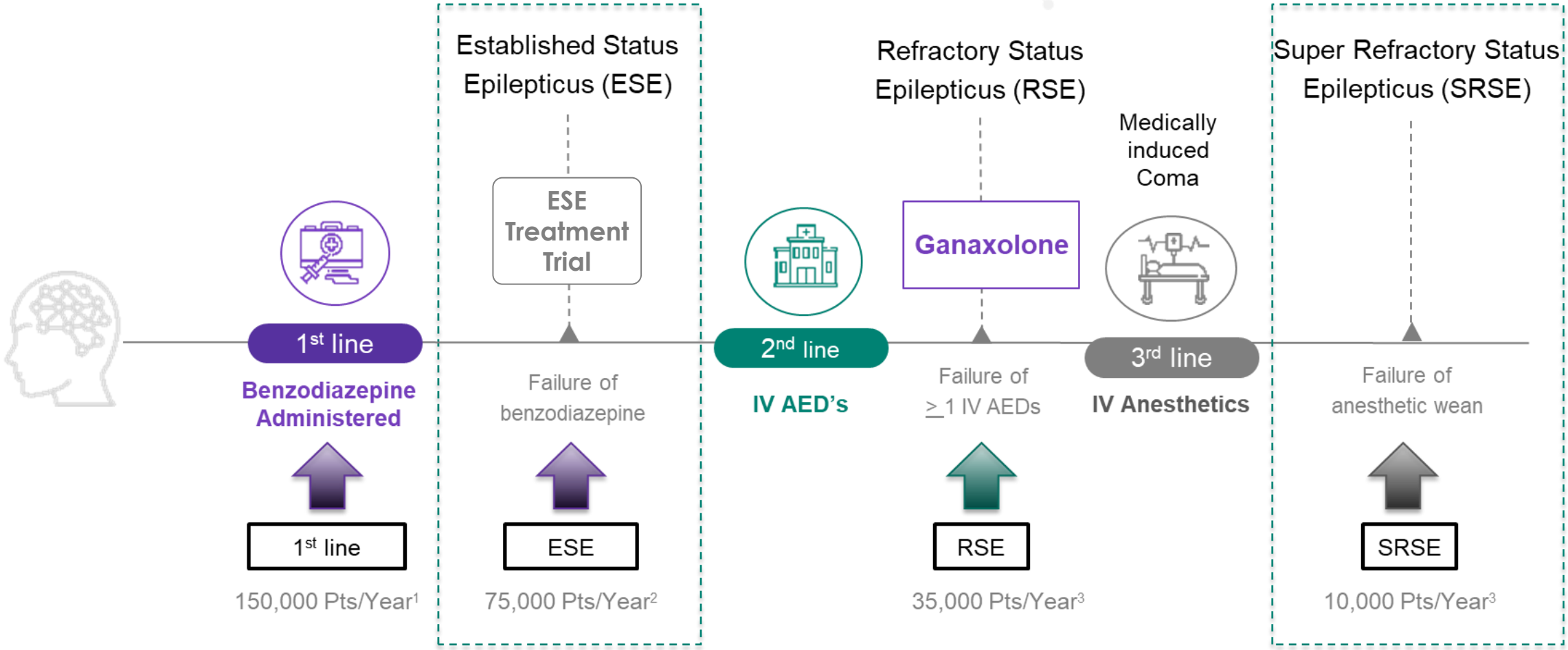
time

IV Ganaxolone's clinical development programs address patient populations in different treatment settings across the SE continuum

[1] Leitinger M 2019 Epilepsia

Additional Commercial Opportunities Along SE Continuum

Potential to leverage future hospital sales force to address > 3x patient population in ESE & SRSE



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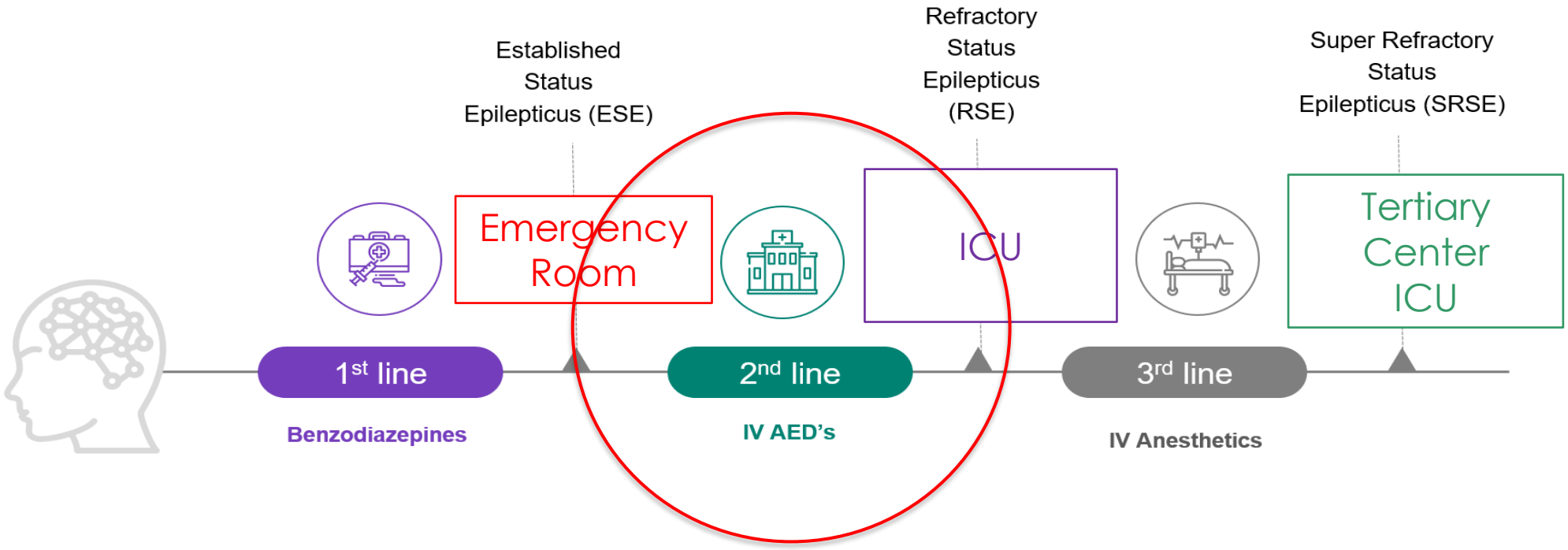
1. DeLorenzo RJ Pellock JM Towne AR Boggs JG. *Epidemiology of status epilepticus.* J Clin Neurophysiol. 1995; 12: 316-325
2. Kapur et al. *Randomized Trial of Three Anticonvulsant Medications for Status Epilepticus N Engl J Med 2019;381:2103-13.*
3. Rossetti and Lowenstein. *Management of refractory status epilepticus in adults* Lancet Neurol. 2011 Oct; 10(10): 922–930

Treatment of Refractory Status Epilepticus

Failure of Benzodiazepines and Initial Second Line AEDs
Failure of Benzodiazepines and Two or More Second Line AEDs



- Ganaxolone can be initiated earlier in the course of RSE
- Patient population failing benzodiazepine and initial second line AED

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Proposed Phase 3 Trial in Refractory SE (RAISE II)

- Trial Goals:
  - Support potential European approval in RSE
  - Potential indication expansion opportunity (relative to the RAISE study population)

Trial Attributes	raise II	raise
Trial Population	Failure of benzodiazepines and at least one IV AED's (RSE) (n=70)	Failure of benzodiazepines and at least two IV AED's (RSE) (n=124)
Comparator	Ganaxolone vs. Placebo with concurrent IV AED initiation	Ganaxolone vs. Placebo in patients receiving background standard of care
Primary Endpoint	Responder analysis: SE cessation within 30 min and no escalation of care within 36 hrs	Co-primary: (1)SE cessation within 30 min (2) no escalation to IV anesthesia within 36 hrs
Geographic Location	EU/UK/US	US only

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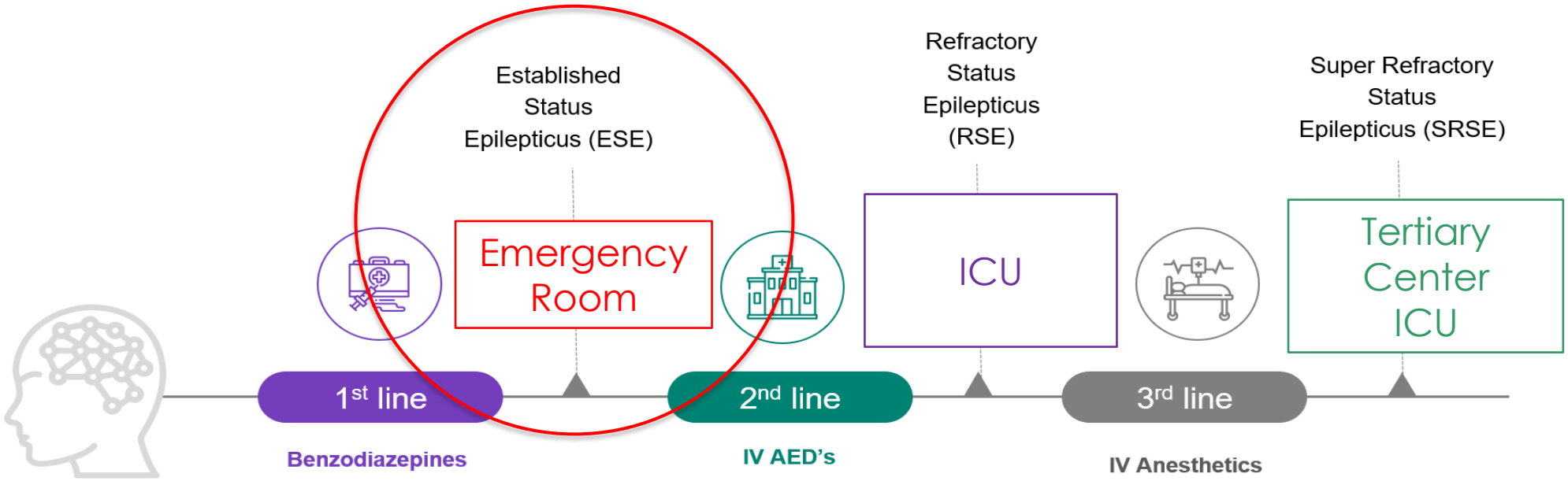
Established Status Epilepticus – Potential Use of Ganaxolone in Emergency Room



- **Unique Environment:**
  -No EEG
  -Risk of rapid escalation of care
  -Convulsive patients: new dosing paradigm – bolus and short infusion time (2-24 hours)

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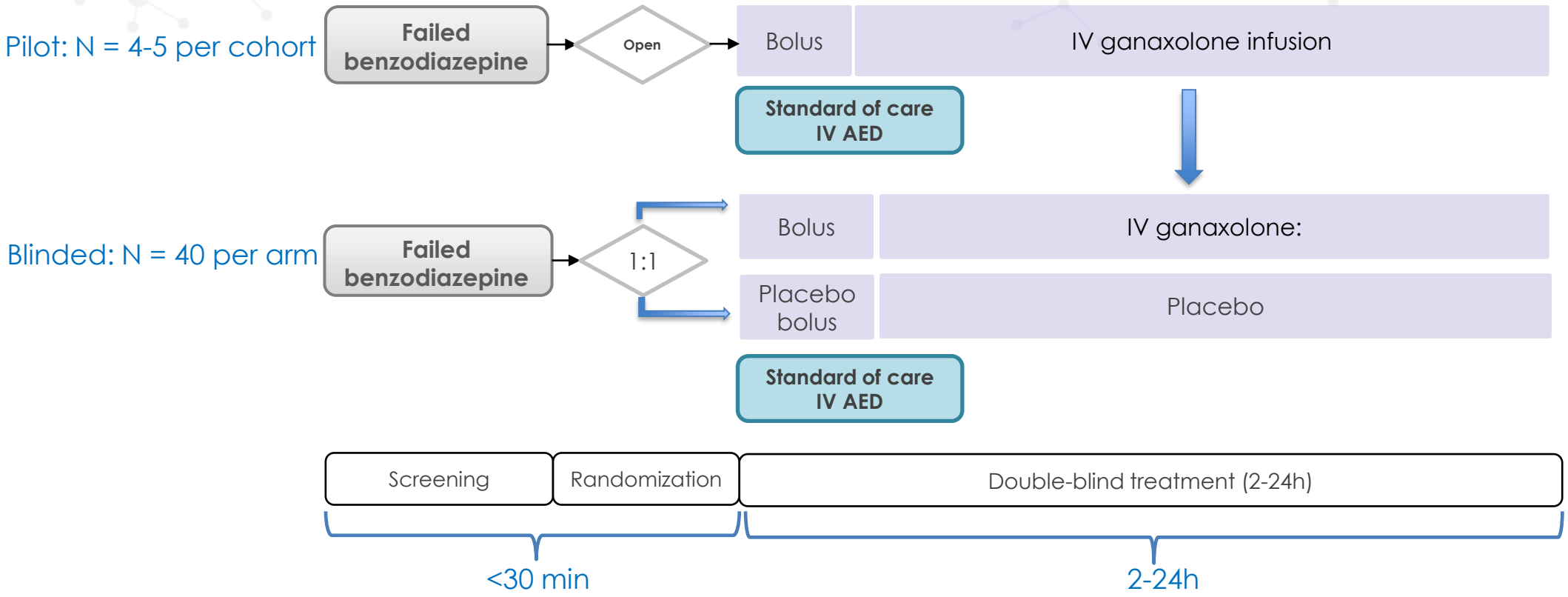
Established Status Epilepticus – Potential Use of Ganaxolone in Emergency Room

Proposed ESE Clinical Trial Design



- Not enough time for consent
  - Exception from Informed Consent (EFIC) / Community consent activities
- First patient expected to be enrolled in 1H of 2022

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Financial Update

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Credit Financing Overview

Credit financing agreement with **Oaktree Capital Management**, a leader among investment managers specializing in alternative investments

Financing has potential to provide incremental cash of **up to $125 million total** through 2023* (gross proceeds before fees)

$75 million** available to be drawn through 2H 2022 based on anticipated regulatory milestones associated with the CDKL5 Deficiency Disorder indication

Marinus has option to draw the final **$50 million** based on additional ganaxolone milestones*

The loan will mature in May 2026 and includes an interest only period for the initial three years of the agreement

Transaction proceeds enable continued investment in commercialization, R&D, and manufacturing scale up

Monetization of the anticipated Priority Review Voucher is permitted and Marinus maintains ability to execute a U.S. synthetic royalty monetization deal

Morgan Stanley & Co. LLC acted as lead placement agent and H. C. Wainwright & Co. acted as co-placement agent on the transaction

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*Availability subject to meeting of certain regulatory, clinical, financing, and revenue thresholds
**15 million drawn at closing in May 2021

Financial Overview: Q1 2021

Updated 2021 Guidance

- **Revenue**
  - FY 2021 projected to be between $9 - $12 million
- **Operating Expenses**
  - FY 2021 loss from operations of between $113 - $118 million
  - Total includes approximately $16 million of non-cash stock-based compensation

Financial Summary (at March 31, 2021):

- $123.5 million in cash and cash equivalents
- $0 in debt
- 36.6 million shares outstanding
- 5.4 million options, RSUs & convertible preferred stock outstanding

Investor Relations – Nasdaq: MRNS

Analyst Coverage*:

- Cantor Fitzgerald: Alethia Young
- Cowen: Joseph Thome, Ph.D.
- H.C. Wainwright & Co: Douglas Tsao
- Jefferies: Andrew Tsai
- JMP Securities: Jason N. Butler, Ph.D.
- Ladenburg Thalman: Michael Higgens
- Leerink: Marc Goodman
- Oppenheimer: Jay Olson
- Truist: Joon Lee, M.D., Ph.D.
- RW Baird: Brian Skorney

* Note: Opinions, estimates, and forecasts of the individual analysts regarding Marinus do not represent opinions, estimates, and forecasts of Marinus. The listing above does not imply endorsement or concurrent with their information, conclusions, or recommendations.

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BARDA Contract – Refractory Status Epilepticus

Key Contract Parameters

- BARDA to contribute $21 million in base contract to support the Phase 3 RAISE clinical trial in RSE and preclinical studies of ganaxolone in nerve agent exposure animal models.
- BARDA may contribute up to an additional $30 million in support of manufacturing, supply chain, clinical, regulatory and toxicology activities based on favorable clinical and pre-clinical outcomes.
- Total contract value = $84 million; $51 million BARDA / $33 million Marinus - if all options are undertaken.
- On successful development, BARDA and Marinus may negotiate for a supply of ganaxolone for a potential response to nerve gas exposure threats.

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Intellectual Property

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Multiple Layers Of Potential Protection

Patent/Patent Applications	Expiration Date
IV formulations containing exclusively in-licensed proprietary Captisol® product	2033
SE – patent application pending on IV formulations and methods of use	2036
SE – patent application pending on clinical treatment regimen	2040
Oral Formulations – nanoparticulate formulations (2026 + up to 5 Year PTE)	2031
CDD & PCDH19 – patent application pending on methods of use, patient stratification	2038
TSC – patent application pending on methods of use	2040
Oral Formulations containing cyclodextrin	2042

Orphan drug designations for CDD and PCDH19 provide 7 and 10 years regulatory exclusivity in US and EU, respectively.
Orphan drug designation for SE provides 7 years regulatory exclusivity in US.

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Thank You

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Appendix

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CDKL5 Deficiency Disorder

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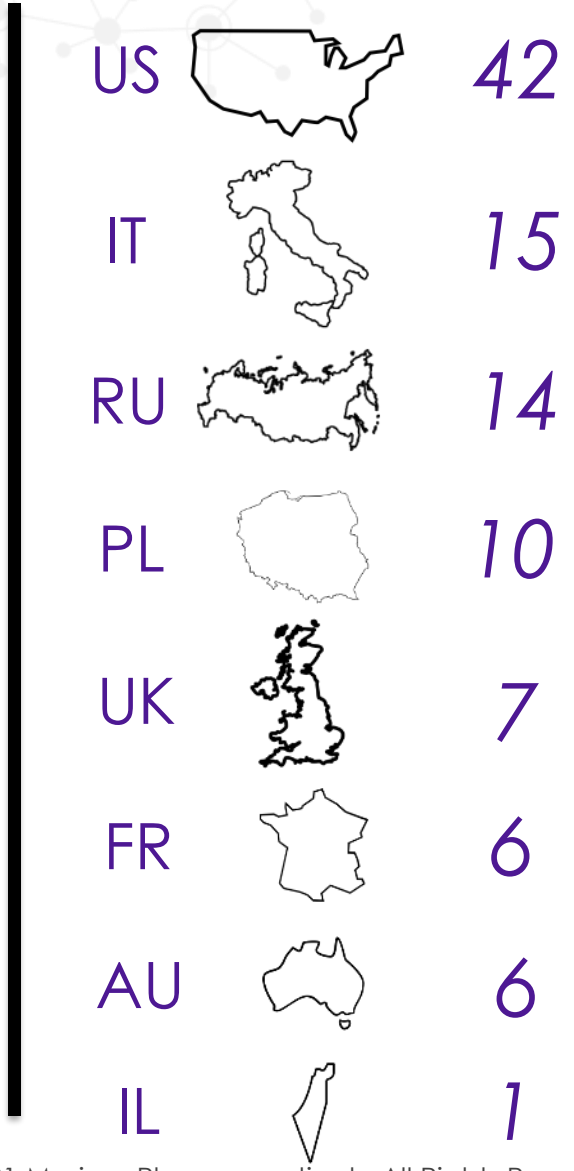
Subject Baseline Demographics & Country Enrollment in Marigold Study (CDD)

Demographic	Placebo (n=51)	Ganaxolone (n=50)	Total (n=101)
Age, median	7.0	5.0	6.0
Gender, n (%)			
Male	10 (19.6)	11 (22.0)	21 (20.8)
Female	41 (80.4)	39 (78.0)	80 (79.2)
Ethnicity, n (%)			
Hispanic or Latino	6 (11.8)	4 (8.0)	10 (9.9)
Not-Hispanic or Latino	43 (84.3)	44 (88.0)	87 (86.1)
Unknown	1 (2.0)	1 (2.0)	2 (2.0)
Not reported	1 (2.0)	1 (2.0)	2 (2.0)
Race, n (%)			
White	47 (92.2)	46 (92.0)	93 (92.1)
Asian	3 (5.9)	2 (4.0)	5 (5.0)
Other	1 (2.0)	2 (4.0)	3 (3.0)



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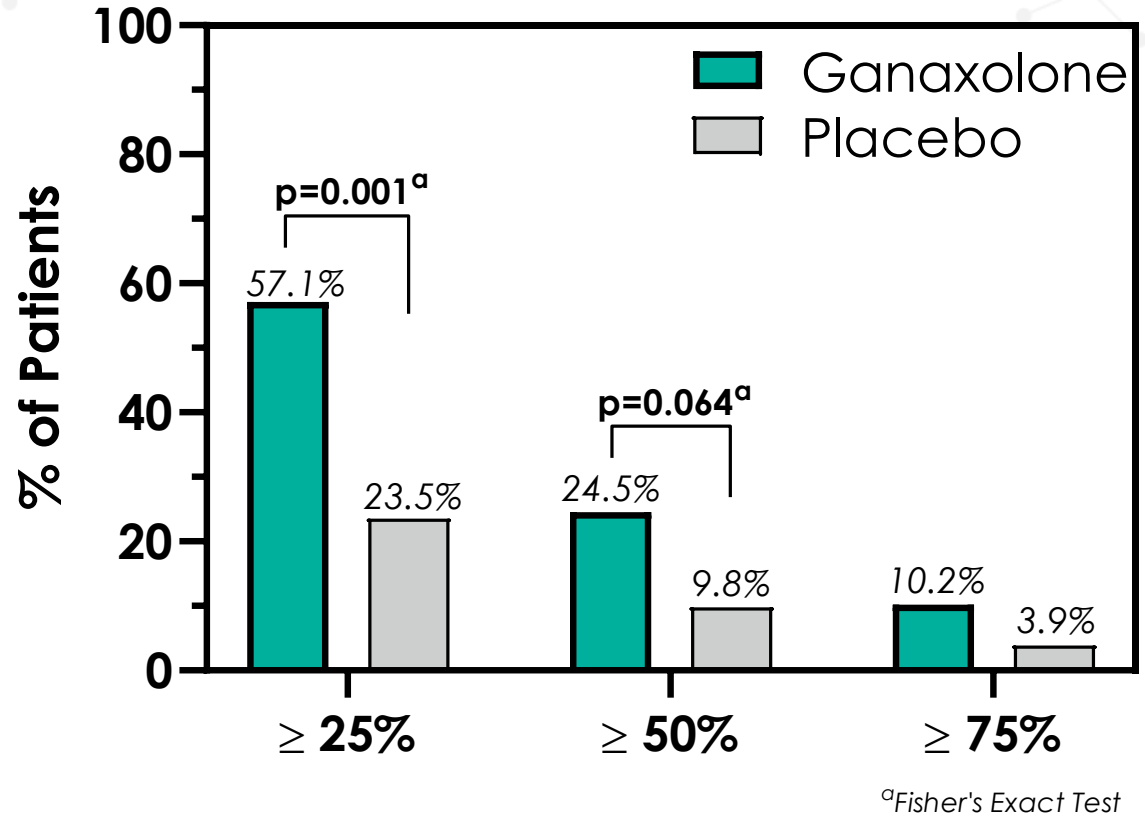
Responder Analysis – Marigold Study



Percent Reductions in Major Motor Seizure Frequency

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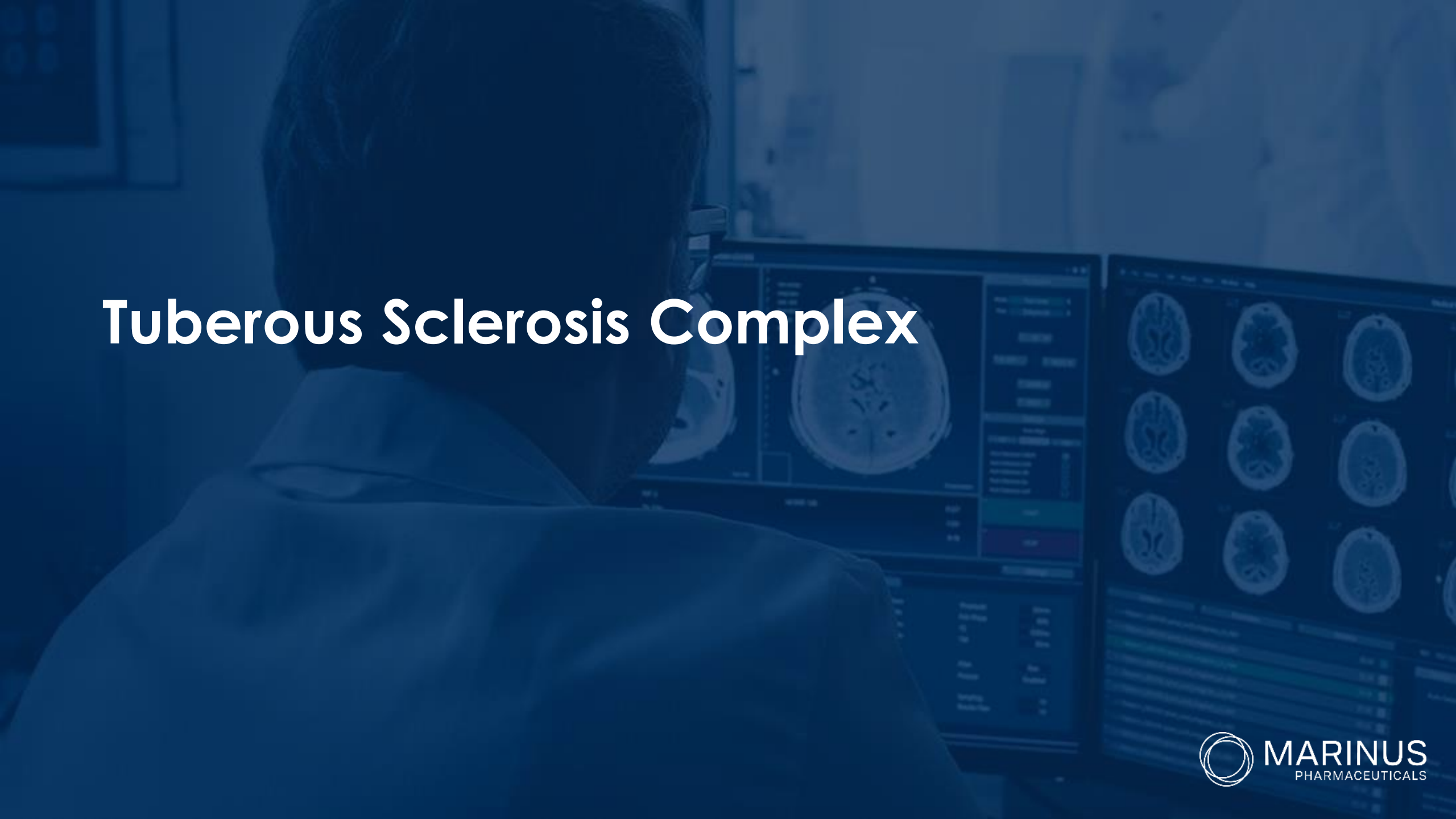
Tuberous Sclerosis Complex



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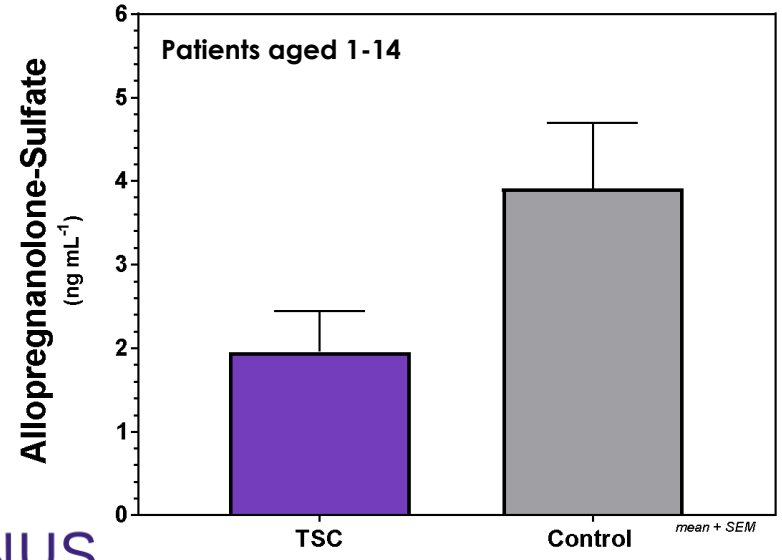
Unmet Need in TSC Epilepsy and Scientific Rationale for Ganaxolone

- Epilepsy present in ~90% of individuals affected with TSC[1]
- Existing treatments fail to control seizures in ~60% of individuals with TSC-associated epilepsy[2]
- Uncontrolled seizures, especially early in life, may lead to developmental delays and cognitive dysfunction

Clear need to evaluate treatments with a differentiated mechanism of action

Data generated in collaboration with the TS Alliance and utilization of their biosample repository



SHORT REPORT

GABA$_A$ receptor active steroids are altered in epilepsy patients with tuberous sclerosis

F di Michele, M Verdecchia, M Dorofeeva, L Costamagna, G Bernardi, P Curatolo, E Romeo

J Neurol Neurosurg Psychiatry 2003;**74**:667–670

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1. Canevini MP et al 2018 Am J of Med Genetics_ Current concepts on epilepsy management in TSC.
2. ChuShore CJ et al Epilepsia_The natural history of epilepsy in TSC.

Status Epilepticus

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Details on Baseline Patient Characteristics for Phase 2 SE Trial

Patient	Dosing Cohort	Etiology	History of Epilepsy	Type of SE	Failed Antiseizure Medications Prior to GNX*	Dose of Last IV AED Administered Prior to GNX (Recommended Dose)
1	Low	Vascular	No	NCSE	**LAC**, LEV	200mg (200-600mg)
2	Low	Unknown	Yes	NCSE	fPHT, **LEV**	1,000mg (1000-3000mg)
3	Low	Vascular	No	NCSE	LOR, **LAC**, LEV	600mg (200-600mg)
4	Low	Vascular	No	NCSE	LOR, **LAC**, LEV	600mg (200-600mg)
5	Low	Tumor	No	CSE	LOR, LAC, **LEV**	2,000mg (1000-3000mg)
6	Medium	Vascular	No	NCSE	LOR, **LAC**, LEV	600mg (200-600mg)
7	Medium	Drug Overdose / Withdrawal	Yes	CSE	LOR, **LEV**	1,000mg (1000-3000mg)
8	Medium	Unknown	Yes	CSE → NCSE	LOR, LAC, **LEV**	1,000mg (1000-3000mg)
9	Medium	Tumor	Yes	NCSE	LAC, LEV, **PHT**	200mg (100mg)
10	Target	Vascular	Yes	CSE	LOR, **LAC**, VPA	400mg (200-600mg)
11	Target	Drug Overdose / Withdrawl	No	CSE	LOR, **LAC**, LEV	400mg (200-600mg)
12	Target	Tumor	Yes	NCSE	LOR, LEV, **VPA**	700mg (1000-3000mg)
13	Target	Autoimmune	No	NCSE	LOR, **LEV**	1,000mg (1000-3000mg)
14	Target	Vascular	No	NCSE	LOR, **LAC**, LEV, PHT	200mg (200-600mg)
15	Target	Vascular	Yes	CSE	LOR, **LEV**	1,000mg (1000-3000mg)
16	Target	Tumor	No	NCSE	LOR, **LAC**, LEV	400mg (200-600mg)
17	Target	Autoimmune	No	NCSE	LOR, fPHT, **LAC**, LEV, VPA	200mg (200-600mg)

NCSE: Non-convulsive status epilepticus

CSE: Convulsive status epilepticus

LAC: Lacosamide

LEV: Levetiracetam

LOR: Lorazepam

PHT: Phenytoin

fPHT: Fosphenytoin

VPA: Valproic Acid

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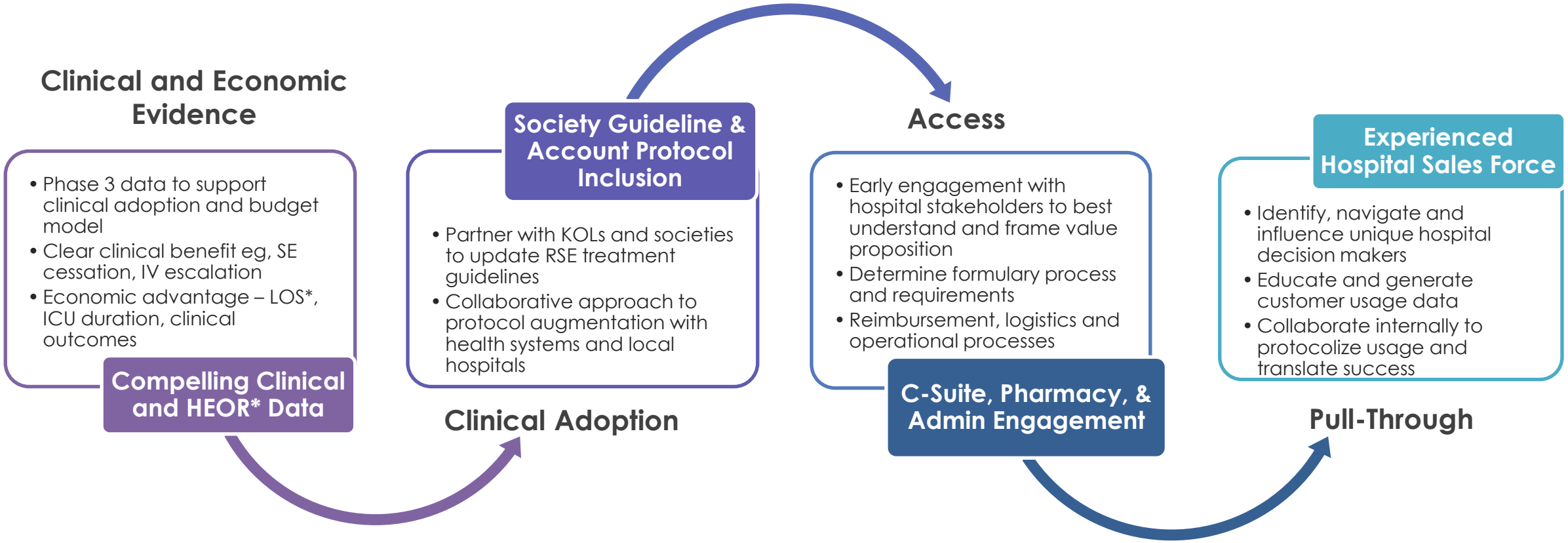
*Bolded, underlined **IV AED's** were the last ones administered prior to GNX

Potential Launch Into the Hospital Setting Designed to be Driven by Data, Customer Collaboration & Protocolization of Ganaxolone in RSE

Critical Success Factors for RSE Launch



*LOS – Longer length of stay
*HEOR – Health economics and outcomes research

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PCDH19 Related Epilepsy

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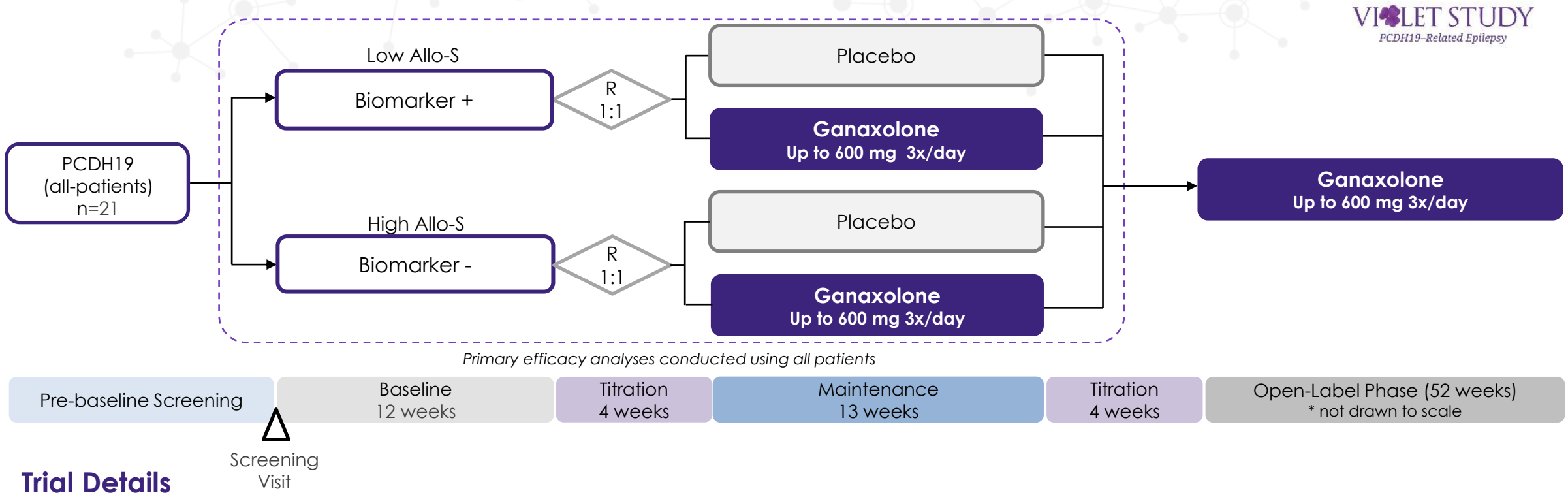
Biomarker Stratified Proof of Concept (POC) Study in PCDH19



Trial Details

- Ages 1-17 with 8 or more seizures in 8 weeks, failed 2 or more AEDs
- Completed double-blind portion of the trial with 21 patients
- Primary efficacy analysis based on change in seizure frequency in all patients
- Stratify patients into one of two biomarker groups based on baseline allopregnanolone sulfate levels and randomized (ganaxolone or placebo) within each stratum

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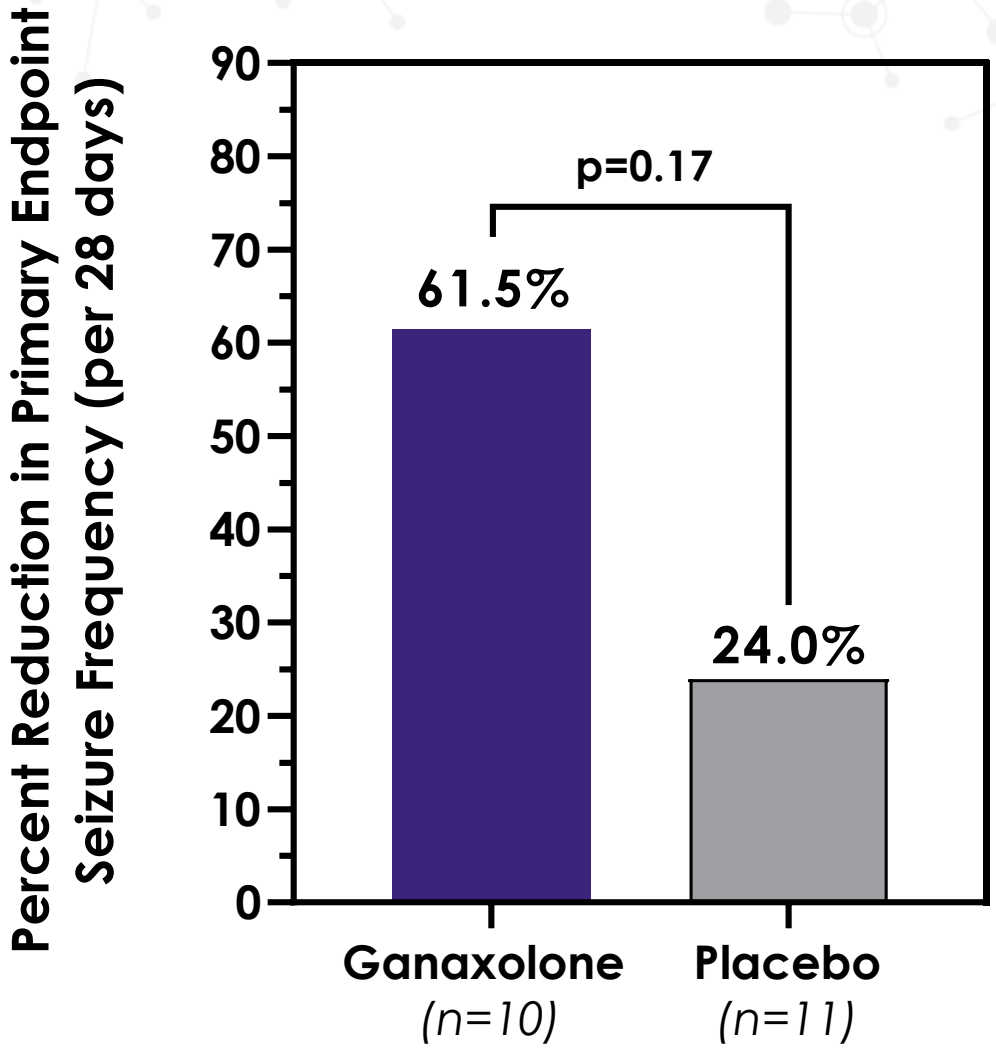
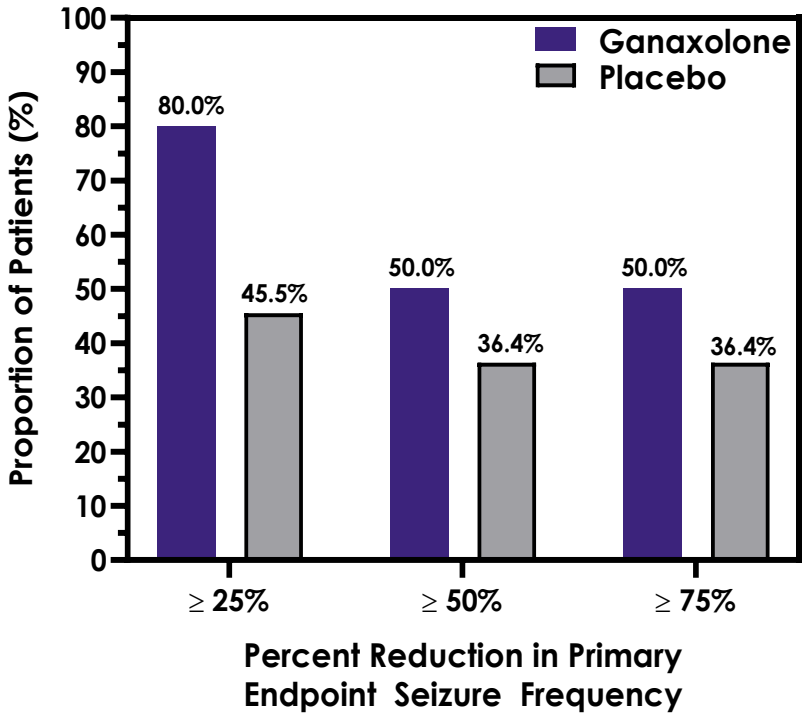
Ganaxolone Demonstrates Directional Improvement in Change in Seizure Frequency

VIOLET STUDY
PCDH19–Related Epilepsy

Baseline Primary Endpoint 28-day Seizure Frequency (median)	
Ganaxolone	**Placebo**
14.5	**17.7**





Primary endpoint seizure types are defined as countable focal seizures with impaired awareness or generalized seizure with a clear motor component.

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