BRIGHT MINDS

BMB-101

BREAKTHROUGH Study in Patients with Absence Seizures and DEE

Phase 2 Topline Data

January 6, 2026

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Event speakers

Bright Minds Bio Participants

Ian McDonald

Chief Executive Officer, Director

Stephen Collins, MD, PhD

Chief Medical Officer

Jan T. Pedersen, PhD, MSc

Chief Scientific Officer, Director

Alex Vasilkevich, MSc

Chief Operating Officer

We Thank

Principal Investigators
And their outstanding teams

For your dedication
and expertise

Trial
Participants

For your courage and
commitment

This success would not have been possible without your unwavering support, participation, and belief in advancing treatment options for those who need them most.

BMB-101

BREAKTHROUGH Study in Patients with Absence Seizures and DEE

Phase 2 Topline Data

Ian McDonald

Chief Executive Officer
Bright Minds Biosciences

Refer to risk factors on Slide 2

About BMB-101

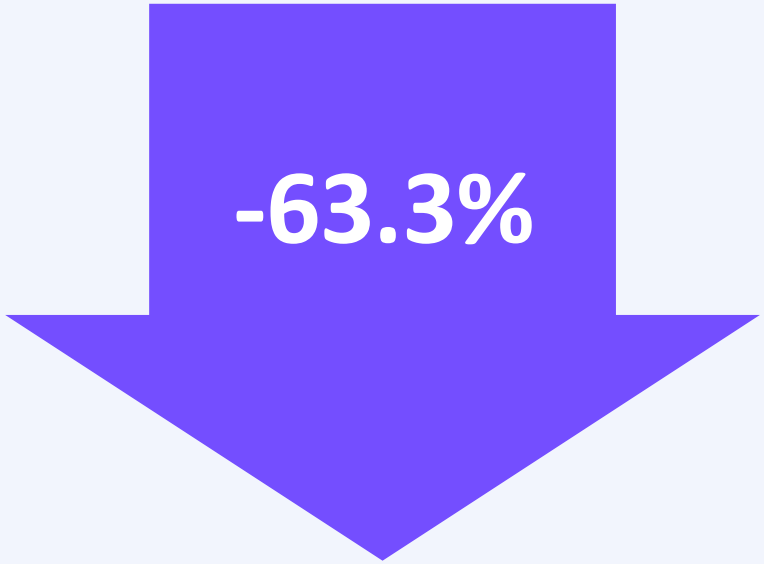
- Highly selective 5-HT_{2C} biased agonist with potential for improved efficacy in a chronic dosing paradigm
- Superior pharmacokinetics: linear kinetics throughout the dosing range
- Convenience of administration: BID administration with potential for QD. Stored at room temperature
- Phase 1 and 2 studies have demonstrated BMB-101 to be both safe and well-tolerated

BMB-101 demonstrates efficacy in drug resistant Absence Seizures and DEE

Absence Seizures

Median reduction of absence seizures ≥ 3s as measured by 24h EEG

DEE



Median reduction in major motor seizures as measured by seizure diary

Potentially best-in-class

- BMB-101 was safe and well tolerated in patients with Absence Seizures and DEE
- BMB-101 met both primary and secondary endpoints in Absence Seizures and DEE
- BMB-101 demonstrates a potentially best-in-class profile for patients with refractory DEE and Absence Seizures

BMB-101

BREAKTHROUGH Study in Patients with Absence Seizures and DEE

Phase 2 Topline Data

Stephen Collins, MD, PhD

Chief Medical Officer
Bright Minds Biosciences

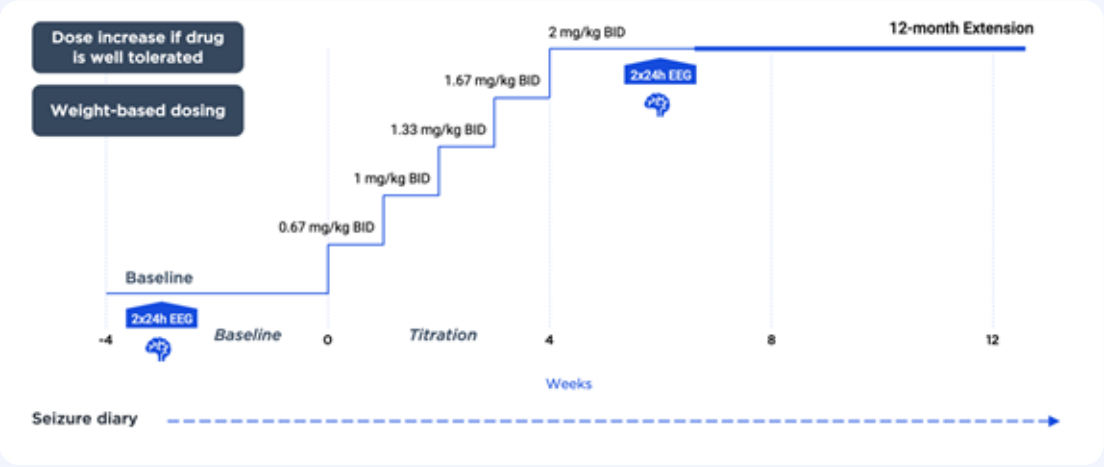
Refer to risk factors on Slide 2

BMB-101 Ph.2 study in adult patients with Absence Seizures or DEE

An Open-Label Phase 2 Study To Evaluate the Efficacy, Safety and Tolerability of BMB-101 in Adults

Absence Seizures Arm

Seizure frequency measured using 24h ambulatory EEG



Key entry criteria:

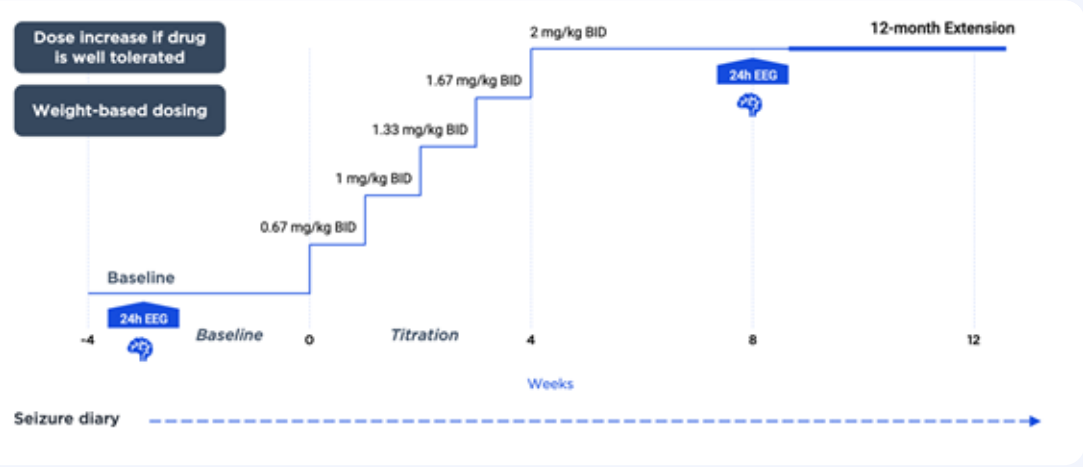
- Patients with drug-resistant absence epilepsy with an average of ≥4 absence seizures per 24 hours during baseline, as measured on 24-hour EEG

Key endpoints:

- Safety and tolerability
- Change in seizure frequency based on 24h EEG

DEE Arm

Seizure frequency measured by seizure diary



Key entry criteria:

- Patients with drug resistant DEE with ≥ 4 seizures during 4-week baseline (based on seizure diary)

Key endpoints:

- Safety and tolerability
- Change in major motor seizure frequency based on seizure diary

Highly refractory patients enrolled

Overall **24**	
Absence seizures **15**	**Unmet need:** • Failed mean 3.7 antiseizure treatments **Patient seizure burden:** • Up to 606 seizures ≥3s duration per 24h
DEE **9** • 7 LGS • 2 DEE other	**Unmet need:** • Failed mean 9.8 anti-seizure treatments, including fenfluramine **Real world clinical scenario:** • Without limitation on number of concomitant anti-seizure therapies

Demographics

	Absence Seizures **N=15**	DEE **N=9**
Age, mean (range) Sex Weight, kg	30 (18-61) 8M + 7F 84.5 (51-137.4)	30.1 (21-63) 3M + 6 F 66 (38-103.2)
Number of concomitant anti-seizure treatments:	Median 3 (1-7) Mean 3.1	Median 5 (3-7) Mean 4.9
Number of previously failed anti-seizure treatments:	Median 2 (0-16) Mean 3.7	Median 9 (6-15) Mean 9.8
Failed VNS	2	5
Median number of seizures in baseline	Absence seizures ≥3s: Median 22 (5-606) *Per day, based on 24h EEG*	Countable motor seizures: Median 22 (6-363) *Per 28 days, based on seizure diary*

Patient disposition

Absence seizures

17 Assessed for Eligibility

15 Enrolled

Discontinued

- Patient 1: Taste (related) – drug product formulation updated
- Patient 2: Flu-like symptoms, muscle ache and fatigue (possibly related)
- Patient 3: Dizziness (possibly drug-related) + didn't qualify based on N of seizures

12 Completed maintenance

Including

- One DEE patient

Excluding

- One patient didn't meet entry criteria
- One EEG of insufficient quality to analyze

11 Evaluable population

DEE

10 Assessed for Eligibility

9 Enrolled

Discontinued

- Patient 1: Fluctuation in pre-existing behavior condition (possibly related)
- Patient 2: Shoulder fracture (not drug-related)
- Patient 3: Lethargy (possibly drug-related)

6 Completed maintenance

6 Evaluable population

BMB-101 in Absence Seizures

Jan T. Pedersen, PhD, MSc

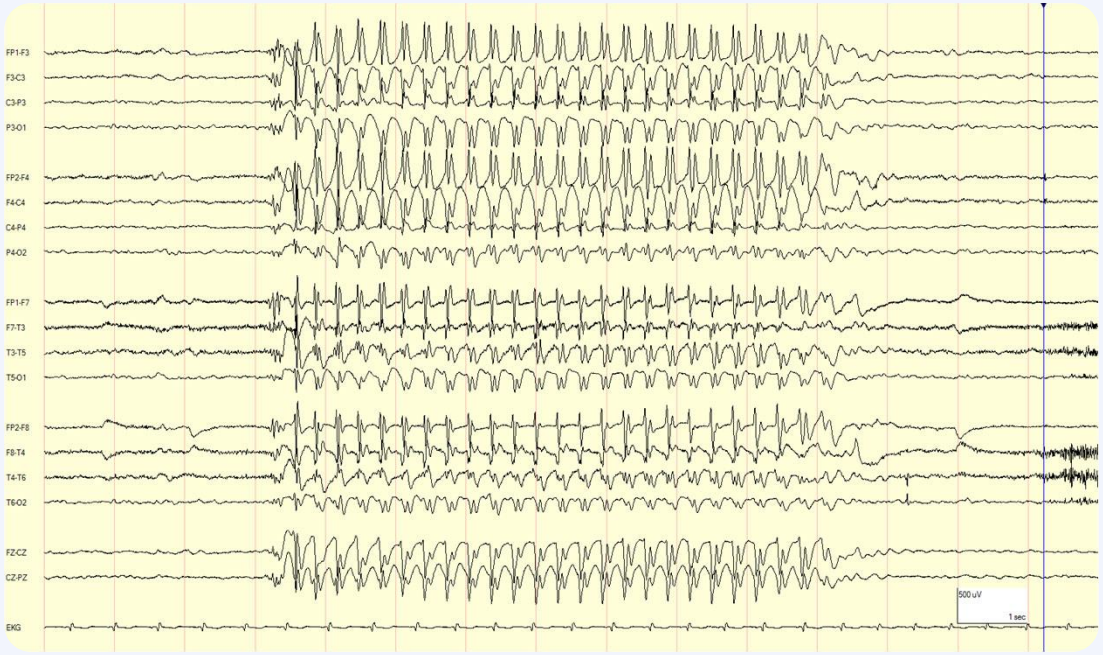
Chief Scientific Officer
Bright Minds Biosciences

Refer to risk factors on Slide 2

What is an absence seizure?

Absence seizure is defined as:

- A distinct 3/s spike-and-wave discharge – an abnormal, and unique paroxysmal pattern of a high velocity spike followed by a slower dome shaped wave on the background of a normal EEG.
- The 3/s spike-and-wave on EEG is clinically recognized as the absence seizure, and has been so defined for over 70 years

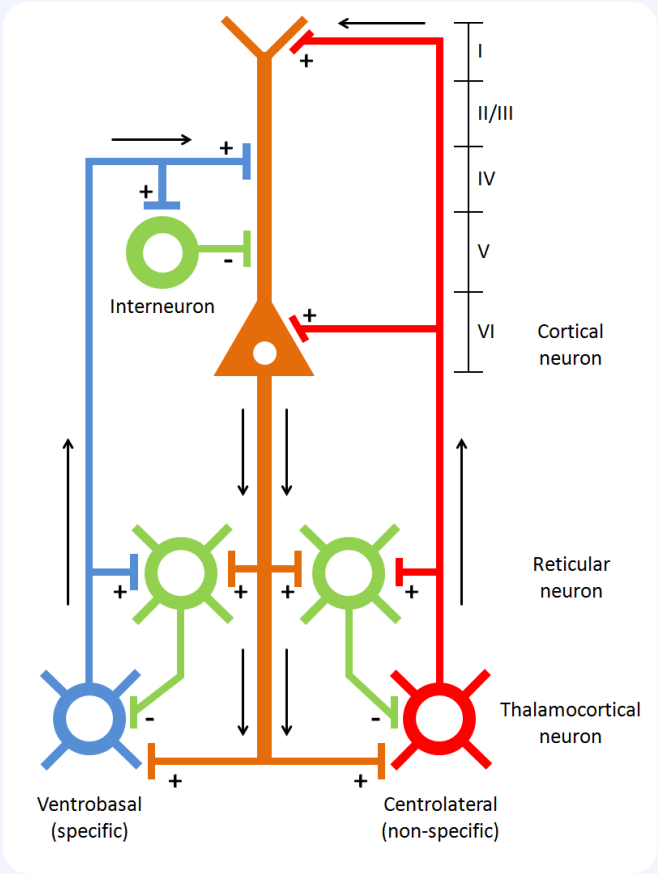


Source: ILAE https://www.epilepsydiagnosis.org/seizure/absence-typical-eeg.html

Egenasi et al., *South African Family Practice* 2022;64:e1–9.
Buchhalter et al., *Epilepsy Research* 2022;187:107028.
Porter, *Epilepsia* 1993;34:S42–S48.

5-HT_{2C} Agonism constitutes specific mechanism for switching off absence seizures

Spike-wave discharge (SWD) arises from oscillations in the cortico-thalamo-cortical network

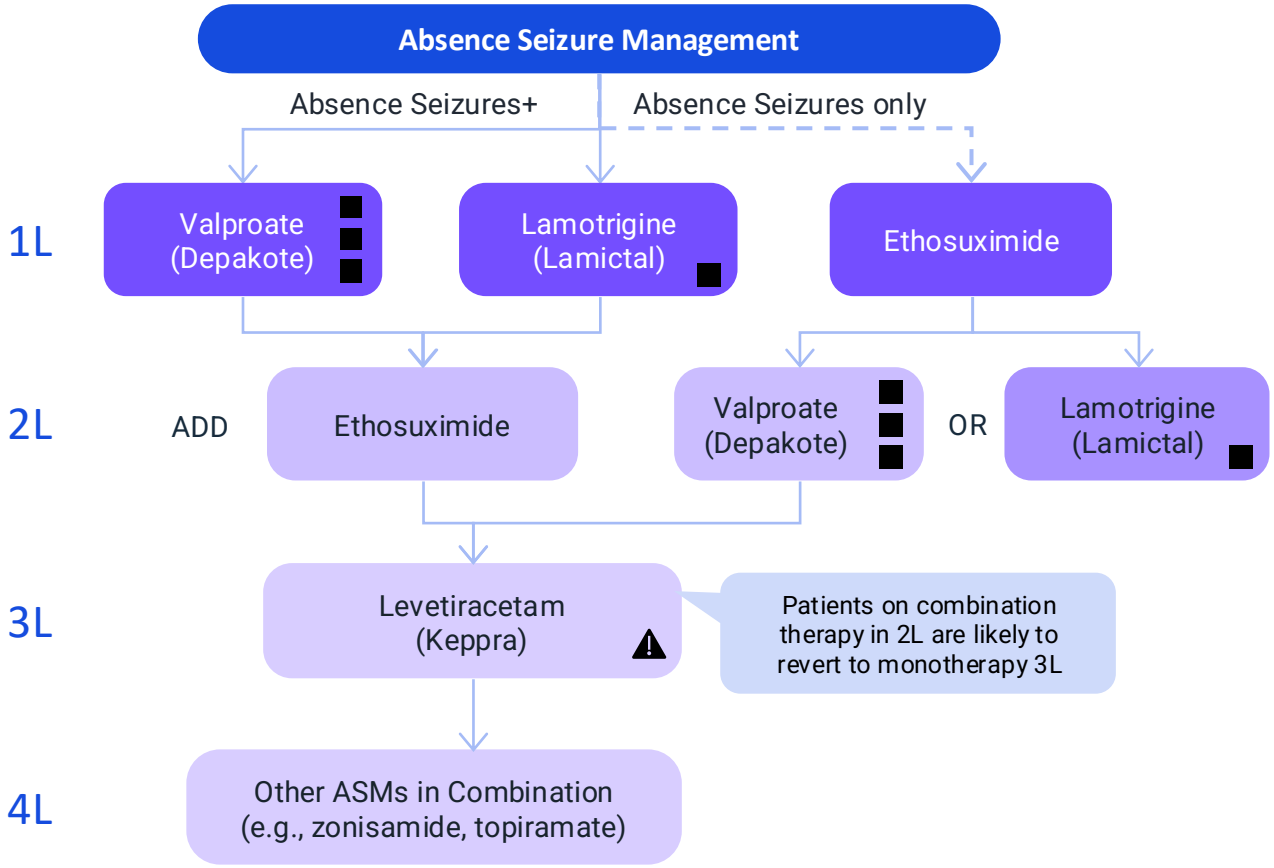


Thalamocortical circuit diagram, original by Zacharybarry, public domain

- Activation of 5-HT_{2C} receptors in the cortico-thalamo-cortical network switch off T-type Ca2+–dependent bursting in the cortico-thalamic circuit by depolarizing and “desynchronizing” the relay/reticular neurons that carry these channels.
- Selective mechanism for switching off SWD activity independent of T-type Ca2+ channels.

Venzi M, et al. Neuropharmacology. 2016;108:292-304.
Crunelli V, et al. Brain. 2020;143:2341-2368.
McCafferty CP, et al. Nat. Neurosci 2018b; 21: 744–56

Limited treatment options represent significant opportunity for new branded agent in the Absence treatment paradigm



■ A "black box" warning, also known as a boxed warning, is the strictest and most serious warning issued by the FDA for prescription drugs. This warning is displayed alert healthcare providers and patients to serious or life-threatening risks associated with the medication

⚠ DRESS - Drug Reaction with Eosinophilia and Systemic Symptoms

Ethosuximide

- Standard-of-care drug for CAE - only manages absence seizures (narrow-spectrum)
- Associated with GI disturbance

Valproate (three FDA black boxes) ■ ■ ■

- Not preferred for first-line in females due to its association with birth defects
- Also associated with hepatotoxicity, it requires liver monitoring which adds additional burden for patients

Lamotrigine (one FDA black box) ■

- more limited in effectiveness against absence seizures
- often selected in 2L, particularly in females due to lack of terratogenicity

Levetiracetam (FDA warning – DRESS) ⚠

- often used later-line and not preferred in patients with co-morbid behavioral issues

4L+ options are limited due few antiseizure medicines with proven efficacy against typical and atypical absence seizures

Kessler SK, McGinnis E. A practical guide to treatment of childhood absence epilepsy. Paediatr Drugs Internet. 2019
Albuja A, Ighodaro E, Khan GQ. Absence Seizure Internet. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2024

Topline Efficacy in Absence Seizures

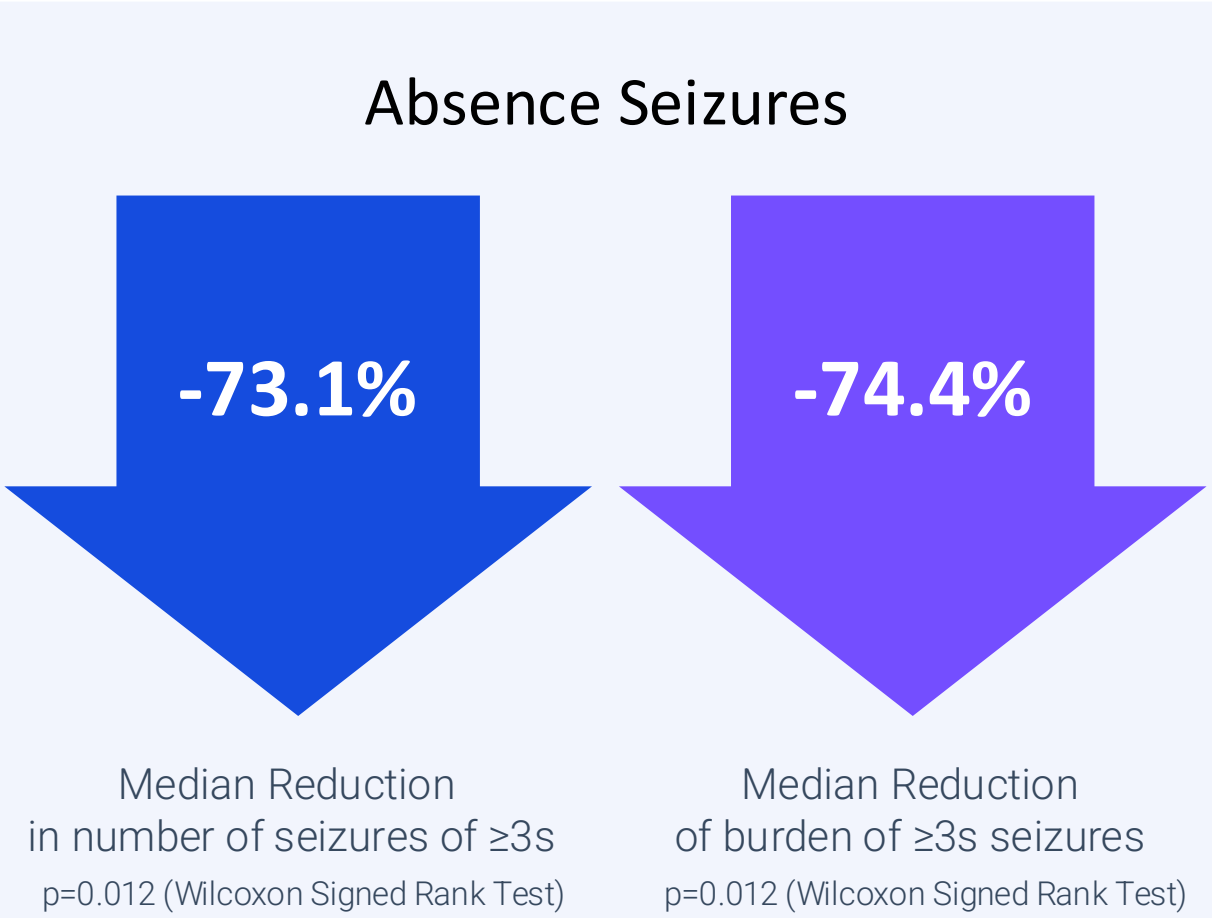
Stephen Collins, MD, PhD

Chief Medical Officer
Bright Minds Biosciences

Refer to risk factors on Slide 2

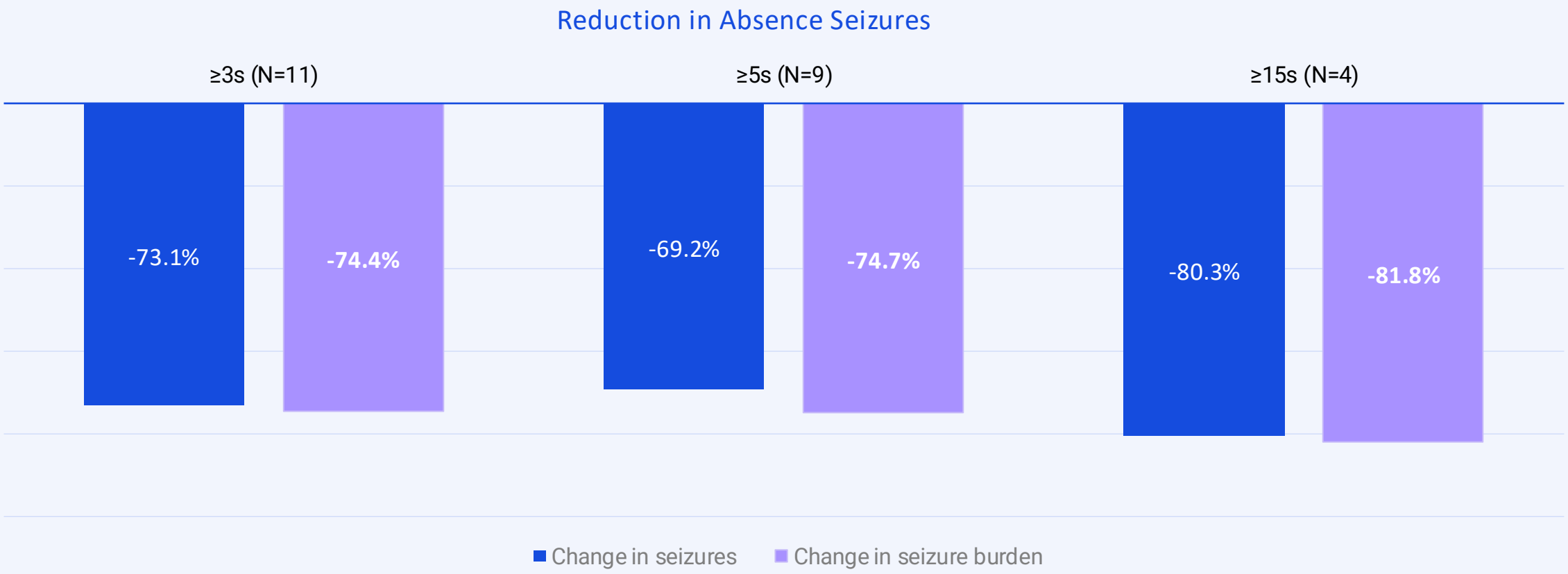
First drug to demonstrate efficacy in Absence Seizures using objective 24h EEG measures

Seizure Burden – sum of individual seizures on EEG with a duration of ≥3s



- Patients with uncontrolled absence seizures
- Seizures are counted based on 2x24h ambulatory EEG recordings done at baseline and maintenance
- EEG analysis and seizure counting is done by independent and blinded readers

Robust reduction of Absence Seizures regardless of seizure duration



N – number of patients with seizures of specific duration (≥3, ≥ 5, ≥ 15)
Seizure Burden – sum of individual seizures on EEG with a duration of ≥3s

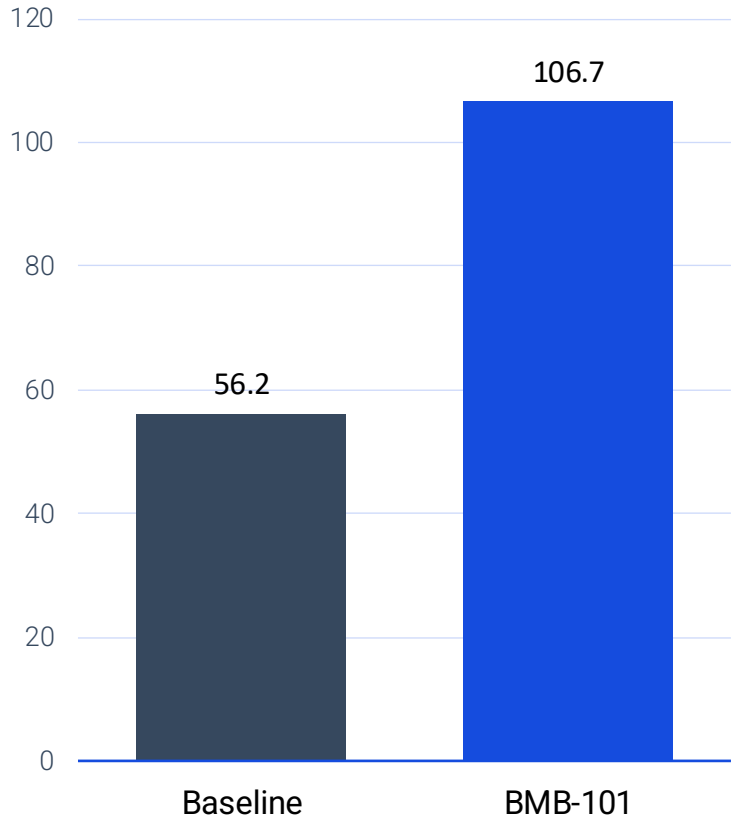
Effects beyond seizures: Sleep

Refer to risk factors on Slide 2

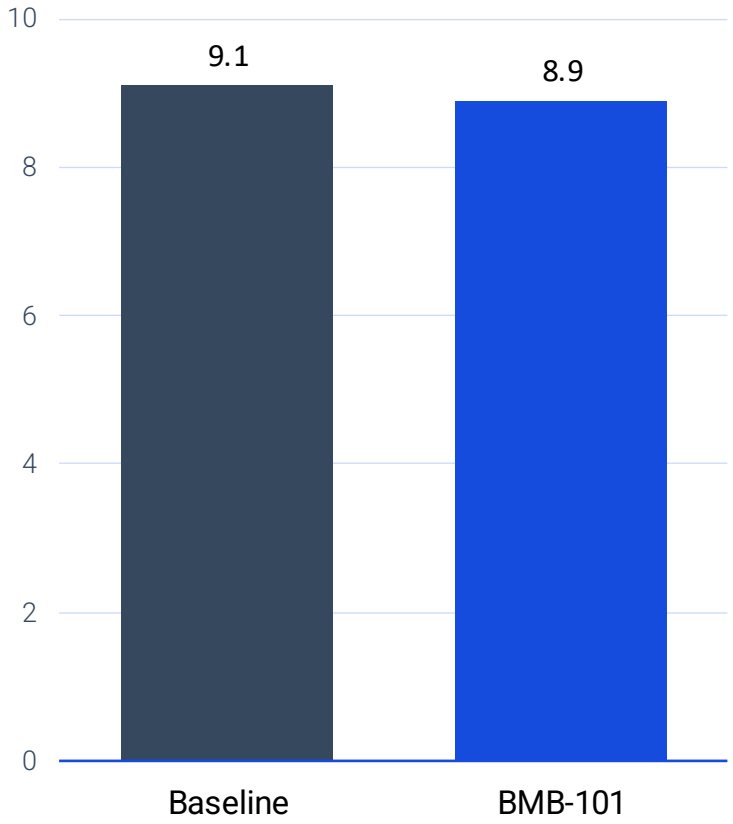
BMB-101 improves REM sleep in patients with Absence Seizures without increasing sleep duration

Increase in REM sleep duration

REM sleep duration, minutes



Overall sleep duration, hours

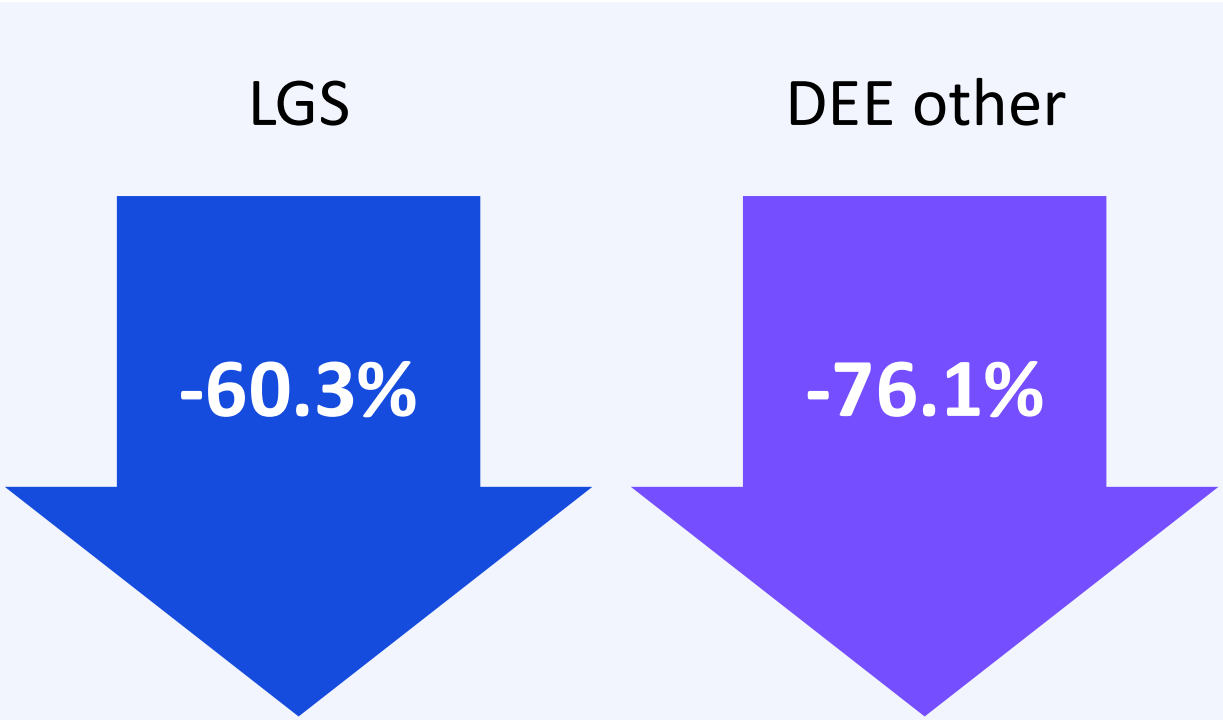


Data available for N=11
REM – Rapid Eye Movement

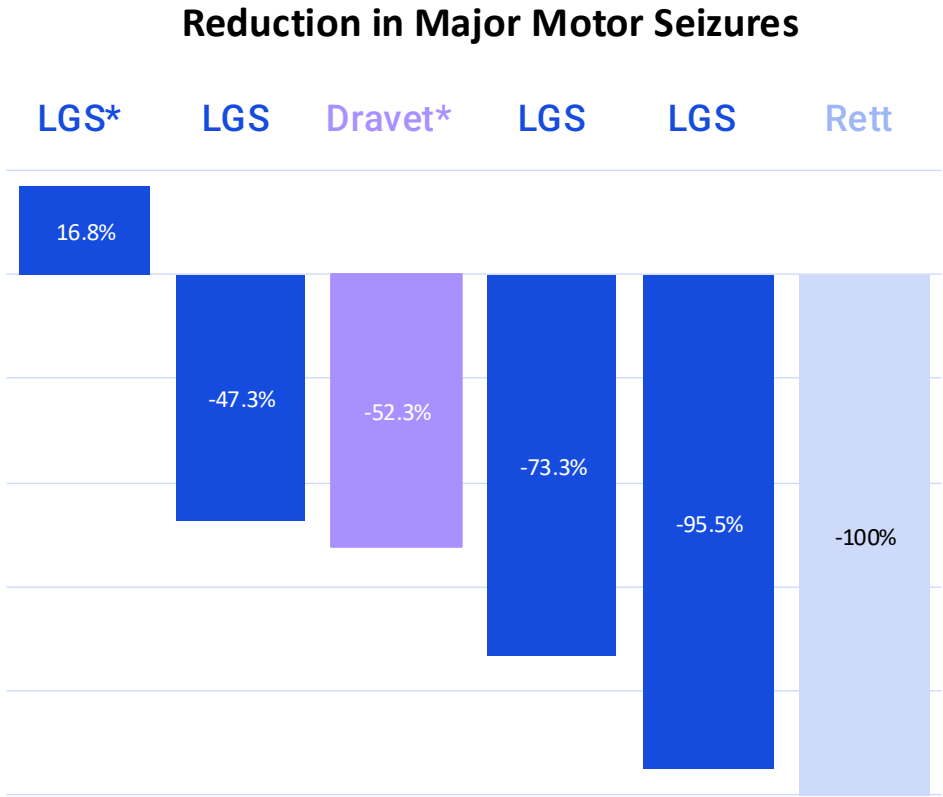
Topline Efficacy in DEE

Refer to risk factors on Slide 2

Significant decrease in seizures in highly refractory DEE patients



Median reduction in Major Motor Seizures
As measured by Seizure Diary



Dravet patient previously failed fenfluramine due to efficacy

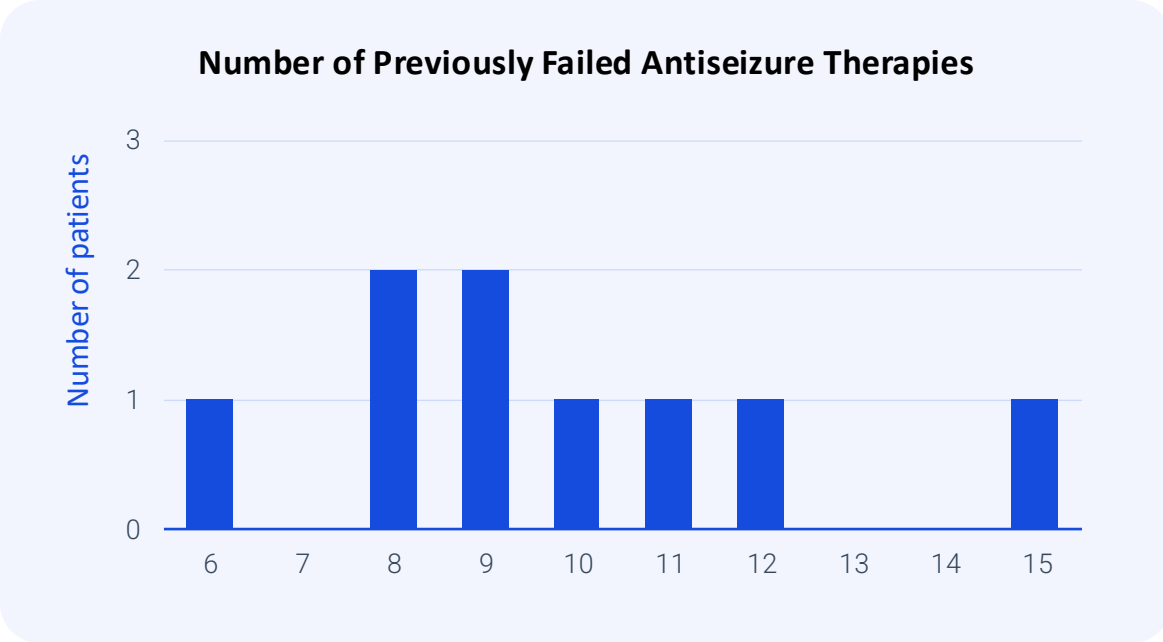
DEE – Developmental and epileptic encephalopathy, LGS -Lennox-Gastaut Syndrome, Dravet – Dravet Syndrome, Rett – Rett Syndrome
Data through maintenance periods
*LOCF – Last observation carried forward

Highly refractory DEE subjects

Robust reduction of seizures in a real-world cohort

Notable examples in highly refractory population

- The Dravet patient who failed fenfluramine due to efficacy demonstrated robust effect with BMB-101
- An LGS patient stopped using benzodiazepine rescue medications after starting the BMB-101 treatment
- The Rett patient who had 15 seizures per day at baseline has been seizure free for at least 43 days



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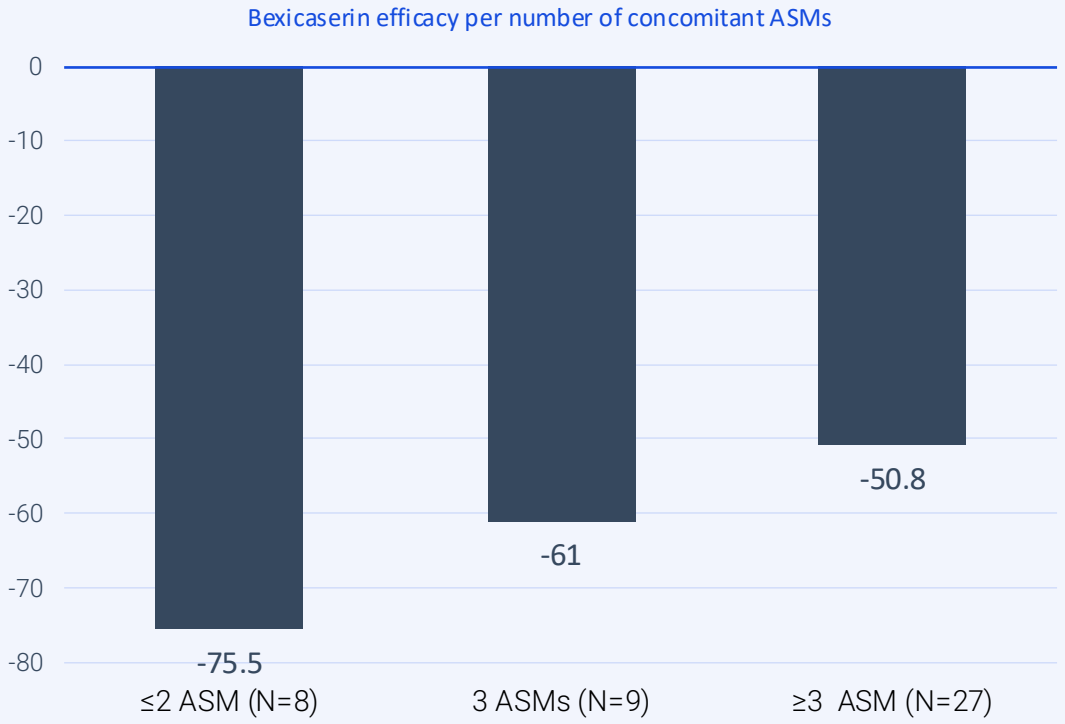
* Antiseizure therapies includes antiseizure medications and devices (e.g. VNS)
DEE - Developmental and epileptic encephalopathy, LGS -Lennox-Gastaut Syndrome

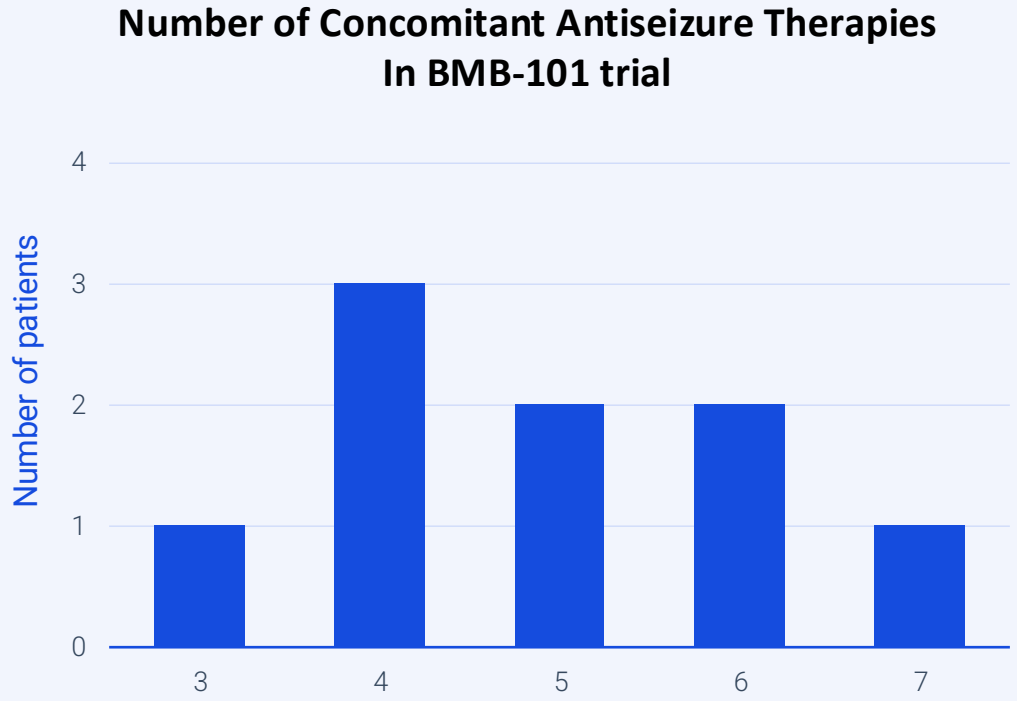
BMB-101 works well in harder to treat patients

DEE patients with 3 and more ASMs are less responsive to therapy, as seen from Bexicaserin PACIFIC trial (NCT05364021)



Klein P, et al. Poster Presentation: American Epilepsy Congress 2025

8/9 DEE patients in BREAKTHROUGH trial were on 4 or more antiseizure treatments and still demonstrated median **>63% seizure reduction**



BRIGHT MINDS | Antiseizure therapies includes antiseizure medications and devices (e.g. VNS)
ASM – antiseizure medication, DEE - Developmental and epileptic encephalopathy

Topline Safety and Tolerability

Refer to risk factors on Slide 2

BMB-101 is well-tolerated and safe in patients

- Most of the TEAEs were mild (about 80%)
- No significant changes on vital signs, labs or ECG
- Three SAEs – all non drug-related: fractured shoulder with opiate-related drowsiness (2); and pneumonia (1)

Adverse Event >10%	Total (N=24)	Total %	Relation to drug PR / R, n	Relation to drug PR / R, %
Respiratory infections	5	20.8%	0 / 0	0% / 0%
Fatigue	4	16.7%	4 / 0	16.7% / 0%
Constipation	4	16.7%	3 / 0	12.5% / 0%
Headache	3	12.5%	1 / 0	4.2% / 0%
Drowsiness	3	12.5%	2 / 0	8.3% / 0%

PR = Possibly Related
R = Related

Total TEAE, n	93
Mild	74 (79.6%)
Moderate	16 (17.2%)
Severe	3 (3.2%)

Severe adverse events included:

- One patient - Dry mouth – Related (transient, no dose change, no discontinuation)
- One patient - Fractured shoulder, and drowsiness (opiates) – both not related (patient discontinued)

BRIGHT MINDS | TEAE: Treatment-Emergent Adverse Event, SAE: Serious Adverse Event
Data through maintenance periods

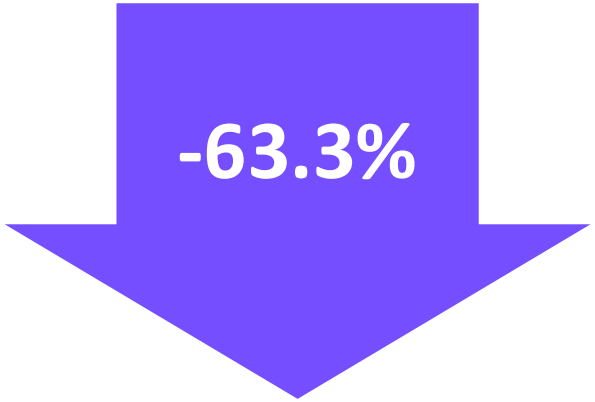
Conclusion and Next Steps

Refer to risk factors on Slide 2

Conclusion

Absence Seizures

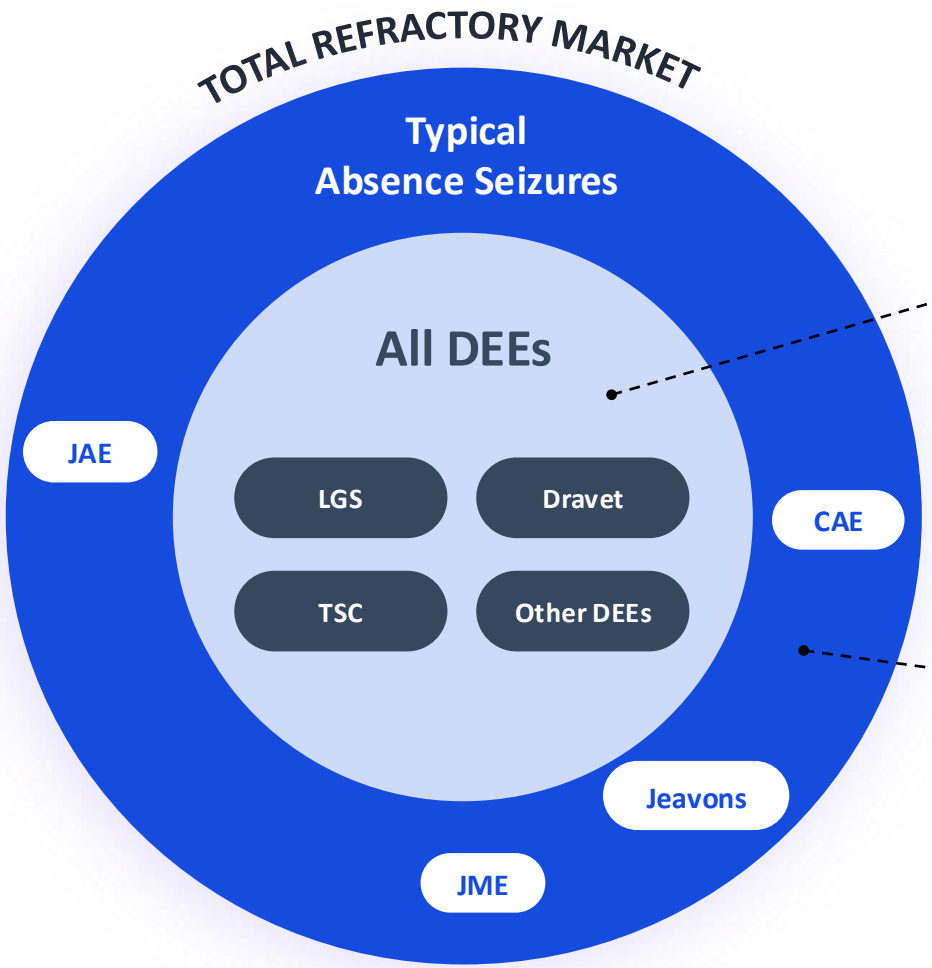
DEE



- BMB-101 was safe and well tolerated in patients with DEE and Absence Seizures
- BMB-101 met both primary and secondary endpoints in DEE and Absence Seizures
- BMB-101 demonstrates a potentially best-in-class profile for patients with refractory DEE and Absence Seizures
- Favorable convenience of dosing with BID -> potentially QD administration

Significant market in Absence Seizures and DEE

This is the first drug that demonstrated efficacy in validated endpoints in patients with DEE and Absence Seizures



– Opportunity in All DEEs

– Opportunity with Absence

All DEE Refractory Market

~$16B

Absence Seizures Refractory Market

~$5.1B

~$21B Total Refractory Market

Additional research needed to assign a product-specific peak sales estimate

ABBREVIATIONS:

CAE: Childhood Absence Epilepsy; DEE: Developmental and Epileptic Encephalopathy; JAE: Juvenile Absence Epilepsy; JME: Juvenile Myoclonic Epilepsy; LGS: Lennox-Gastaut Syndrome; TSC: Tuberous Sclerosis Complex

Comparison to peers

Drug	**BMB-101** Selective and biased 5-HT_{2C} agonist	**Bexicaserin** Selective 5-HT_{2C} agonist	**Fenfluramine / Fintepla** Non-selective 5-HT_{2C} agonist	**Cannabidiol / Epidiolex** Multimodal
Efficacy in LGS (major motor seizures)	60.3% Ph.2a open-label trial N=4	50.8% (PACIFIC) (placebo 20.8%) Ph.1b/2a trial N=29	26.5% (0.7 mg/kg)** 13% (0.2 mg/kg) (placebo 7.6%) Phase 3 trial N=263	43.9% (Placebo 21.8%)** GWPCARE4 Phase 3 trial N=171
Efficacy in broader DEE (major motor seizures)	63.3% Ph.2a open-label trial N=6	65.5%(PACIFIC) (placebo 20.8%) Ph.1b/2a trial N=52	NA	NA
Efficacy in absence seizures (reduction in seizures using EEG endpoints)	73.1%	NA	NA	NCT04899050 – missed primary endpoint
Differentiation	• G-protein Biased agonist at 5-HT_{2CR} • Well-tolerated • Linear PK* • Effective in multiple seizure types • BID -> potentially QD	• TID • Requires refrigeration • High rates of somnolence in Ph.2 • Non-linear PK*	• REMS program • Limited exposure in adults due to daily dose limitation of 26 mg/day	• Moderate efficacy compared to 5-HT_{2C} agonists in DEE • Higher risk of DDI • Hepatotoxicity concerns

* A phase 1 clinical study of BMB-101 shows linear PK and a reduced rate of somnolence and GI/Urinary side effects compared to other 5-HT2C agonists. Poster presentation at American Epilepsy Congress 2025
** Frequency of drop seizures as the efficacy endpoint

Next steps

- Bright Minds Biosciences will initiate global registrational studies in patients with DEE and Absence Seizures
- Bright Minds Biosciences will continue the analysis of the BREAKTHROUGH study and will report on this data throughout the year
- Bright Minds Biosciences is initiating the NOVA study in Prader-Willi Syndrome in Q1 2026
- We are looking forward to a busy year with five clinical studies

Pipeline

Rich and diverse portfolio in neurology and psychiatry with multiple programs

Lead	Indications	Research	Phase 1	Phase 2	Phase 3

5-HT_{2C} agonists

BMB-101	DEE Absence seizures	Clinical Studies – Phase 2 topline announced Registrational trials in DEE Registrational trials in absence seizures
BMB-101	Prader-Willi Syndrome	Clinical Studies – Phase 2a - PoPh
BMB-105	Prader-Willi Syndrome	Clinical development

5-$HT_{2A/2C}$ agonists

BMB-201	Depression, Pain, Headache	Preclinical

5-HT_{2A} agonists

BMB-202	Depression (Fast-onset)	Preclinical

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BREAKTHROUGH Study in Patients with Absence Seizures and DEE

Q&A session

Important Additional Information

Bright Minds Biosciences Inc. (the "**Issuer**") has filed a registration statement on Form F-3 (including a base prospectus (the "**Base Prospectus**")) with the U.S. Securities and Exchange Commission (the "**SEC**") (File No. 333-289851), and a preliminary prospectus supplement that incorporates the Base Prospectus (together, the "**Preliminary Prospectus**"), for the offering (the "**Offering**") to which this communication relates. The Issuer intends to file a further prospectus supplement (together with the base prospectus, the "**Prospectus**") for the Offering. Before you invest, you should read the Prospectus and other documents the Issuer has filed with the SEC for more complete information about the Issuer and this Offering.

You may get these documents for free by visiting EDGAR on the SEC Web site at www.sec.gov. Alternatively, the Issuer, any underwriter or any dealer participating in the Offering will arrange to send you the Preliminary Prospectus and/or the Prospectus if you request it by calling the Issuer toll-free at +1-888-482-0763 or by emailing Alex Vasilkevich, Chief Operating Officer, at alex@brightmindsbio.com.