



Bright Minds Biosciences Announces Positive Findings from its DBA/2 Mouse Model Study Evaluating BMB-101

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- BMB-101 demonstrated a complete elimination of drop attacks in the DBA/2 mouse model –
- The DBA/2 model is highly predictive of sudden unexpected death in epilepsy (SUDEP) –
- Findings highlight BMB-101's potential to address critical gaps in SUDEP prevention –

New York and Vancouver, British Columbia, May 13, 2025 – Bright Minds Biosciences Inc. (CSE: DRUG) (NASDAQ: DRUG) ("Bright Minds" or the "Company"), a company focused on developing highly selective 5-HT₂ agonists for the treatment of drug-resistant epilepsy, depression, and other central nervous system (CNS) disorders, today announced positive findings from its DBA/2 mouse model study. BMB-101, the Company's novel scaffold 5-HT_{2C}Gq-protein biased agonist, demonstrated a complete elimination of drop attacks in the DBA/2 mouse model.

"DBA/2 is an excellent model for understanding the effect of anti-epileptic drugs (AEDs) on the etiology of seizures," stated Jan Torleif Pedersen, PhD, MSc, Director, Chief Science Officer, of Bright Minds Biosciences. "BMB-101 demonstrated dose-dependent efficacy in the DBA/2 mouse model of epilepsy, and drop seizures were completely eliminated. Notably, BMB-101 achieved 100% survival in the DBA/2 model, reversing brainstem serotonin deficits and preventing seizure-induced respiratory arrest. SUDEP is the leading cause of seizure-related premature death, particularly in drug-resistant epilepsy patients, and we are extremely pleased to advance our investigative work and build on this preclinical validation."

The DBA/2 mouse model is an inbred mouse strain in which young DBA/2 mice are susceptible to audiogenic seizures, making them a model for epilepsy studies. This epilepsy model does re-capitulate phenomenon such as tonic/clonic seizures, drop attacks, and sudden unexpected death in epilepsy.

These findings highlight BMB-101's potential to address critical gaps in SUDEP prevention, a leading cause of mortality in Developmental and Epileptic Encephalopathy (DEE) patients. For individuals with Dravet syndrome, the risk of premature death has been estimated as 15-20%, with half or more cases attributed to SUDEP.

About BMB-101

BMB-101 is a novel scaffold 5-HT_{2C}Gq-protein biased agonist developed using structure-based drug design. It was explicitly designed for chronic treatment of neurological disorders where tolerance and drug resistance are common issues. Biased agonism at the 5-HT_{2C} receptor is one of its key features and adds another layer of functional selectivity within a well-validated target. BMB-101 works exclusively via the Gq-protein signaling pathway and avoids beta-arrestin activation, which is crucial to minimize the risk of receptor desensitization and tolerance development. This provides a novel mechanism, anti-epileptic drug designed to provide sustained seizure relief in hard-to-treat patient populations. In preclinical studies, BMB-101 has demonstrated efficacy in animal models of Dravet Syndrome and numerous models of generalized seizures.

In Phase 1 clinical studies, BMB-101 was given to 64 healthy volunteers in a Single Ascending Dose (SAD), Multiple Ascending Dose (MAD) and food-effects study. BMB-101 was demonstrated to be safe and well tolerated at all doses. No Serious Adverse Events (SAEs) were observed, and Adverse Events (AEs) were mild in nature and in line with on-target effects for serotonergic drugs.

An extensive target-engagement study was conducted using both fluid biomarkers (transient prolactin release) and physical biomarkers (Quantitative Electroencephalogram, qEEG). Both methods confirmed robust central target engagement. A qEEG signature typical for anti-epileptic drugs was observed, with a selective depression of EEG power at frequencies observed during epileptic seizures. Furthermore, a potentiation of frontal gamma-power was observed in this study which could indicate the potential for improved cognition.

About Bright Minds

Bright Minds is a biotechnology company developing innovative treatments for patients with neurological and psychiatric disorders. Our pipeline includes novel compounds targeting key receptors in the brain to address conditions with high unmet medical need, including epilepsy, depression, and other CNS disorders. Bright Minds is focused on delivering breakthrough therapies that can transform patients' lives.

Bright Minds has developed a unique platform of highly selective serotonergic agonists exhibiting selectivity at different serotonergic receptors. This has provided a rich portfolio of NCE programs within neurology and psychiatry.

Forward-Looking Statements

This news release contains “forward-looking information”. Often, but not always, forward-looking statements can be identified by the use of words such as “plans”, “expects”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipates”, or “believes” or variations (including negative variations) of such words and phrases, or state that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur, have the potential to occur, or be achieved. Forward-looking statements in this news release include BMB-101 impacting gaps in SUDEP prevention or reducing the risk of death for individuals with Dravet Syndrome,, and future intended use or therapeutic benefit of BMB-101 to treat epilepsy disorders. A variety of factors, including known and unknown risks, many of which are beyond our control, could cause actual results to differ materially from the forward-looking information in this news release. These factors include the company’s financial position and operational runway, market condition, success of competitors products in respect of epilepsy treatment and timelines related to such products, regulatory risk to operating in the pharmaceutical industry, risk related to BMB-101 failing in development, not receiving required regulatory approvals, or being delayed to a point where it is not commercially viable, risk related to regulatory agencies imposing additional requirements or delay the initiation of clinical trials, or new or changing laws imposing additional requirements; clinical trials may also not demonstrate the safety or efficacy of BMB-101 in the manner needed to allow the product to go into development. It remains uncertain whether BMB-101 can be developed as a safe and effective treatment of Dravet Syndrome or other epilepsy disorders, and if so, whether the product will be commercially accepted and profitable. Additional risk factors can also be found in the Company’s public filings under the Company’s SEDAR+ profile at www.sedarplus.ca. Forward-looking statements contained herein are made as of the date of this news release and the Company disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. The Company undertakes no obligation to update forward-looking statements if circumstances, management’s estimates or opinions should change, except as required by securities legislation. Accordingly, the reader is cautioned not to place undue reliance on forward-looking statements.

The Canadian Securities Exchange has neither approved nor disapproved the information contained herein and does not accept responsibility for the adequacy or accuracy of this news release.

Contact Information

Investor Relations

Lisa M. Wilson

T: 212-452-2793

E: lwilson@insitecony.com

Alex Vasilkevich

Chief Operating Officer

Bright Minds Biosciences Inc.

T: 414-731-6422

E: alex@brightmindsbio.com

Website: www.brightmindsbio.com