For Immediate Release

Bright Minds Biosciences to Present Data at the American Epilepsy Society 2024 Annual Meeting

- *Poster presentations on BMB-101 will focus on 5-HT_{2C} functional selectivity and Phase 1 clinical data* -

NEW YORK, November 21, 2024 - Bright Minds Biosciences Inc. (NASDAQ: DRUG), a pioneering company focused on developing highly selective 5-HT2 agonists for the treatment of drug-resistant epilepsy, depression, and other central nervous system (CNS) disorders, is proud to announce two upcoming presentations at the American Epilepsy Society 2024 Annual Meeting in Los Angeles, December 6-10, 2024.

The Company's presentation details are as follows:

Title: Phase I Study to Evaluate the Safety, Tolerability, and Pharmacokinetics of Single and Multiple Ascending Oral Doses of novel 5-HT_{2C} agonist, BMB-101, in Fed and Fasted Adult Healthy Human Volunteers
Poster Number: 1.532
Presenter(s): Jan Torleif Pedersen, Chief Scientific Officer
Presentation date and location: Poster Session 1, Saturday, December 7, 12:00 PM – 2:00 PM. South Hall H, Level 1

Title: BMB-101 and Biased 5-HT_{2C} Agonism: A Novel Approach for Sustained Epilepsy Management
Poster Number: 1.533
Presenter(s): Alex Vasilkevich, Chief Operating Officer
Presentation date and location: Poster Session 1, Saturday, December 7, 12:00 PM – 2:00 PM. South Hall H, Level 1

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 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.

On September 12th, Bright Minds Biosciences announced the initiation of the BREAKTHROUGH Study, an open-label Phase 2 clinical trial evaluating the safety, tolerability, and efficacy of BMB-101 in adult patients with classic Absence Epilepsy and Developmental Epileptic Encephalopathy (DEE).

About Bright Minds Biosciences
Bright Minds Biosciences 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 Biosciences 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 or be achieved. Forward-looking statements in this news release include design, progress, and completion of the BREAKTHROUGH *Study, future clinical development of*

BMB-101, and future intended use or therapeutic benefit of BMB-101 to treat refractory 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, regulatory risk to operating in the pharmaceutical industry, and inaccuracies related to the assumption made by management relating to general availability of resources required to operate the studies noted in this news release. 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.

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