Marvel Biosciences Highlights Recent Research on the Serotonin Theory of Depression

CALGARY, Alberta – (October 3, 2022) – Marvel Biosciences Inc. (the "Company" or "Marvel") (TSX-V: MRVL) highlights recent a meta-analysis which re-evaluated the strength of the link between serotonin levels and depression.

According to the study published in Nature Molecular Psychiatry on July 20, 2022 [1], despite the influence of the serotonin theory of depression, there was no comprehensive review of the scientific literature undertaken, despite the various known facts of the patients taking selective serotonin reuptake inhibitors (SSRIs):

- Up to 30% subject patients not responding to the treatment
- Effectiveness of the treatment can take up to 4 weeks
- Up to 40% of patients who respond to treatment become apathetic or lose overall motivation

"The lack of a link between depression and serotonin levels found by the authors is a concern, as this original hypothesis led to the introduction of the widest prescribed class of anti-depressant drugs to date, the SSRIs," said Dr. Mark Williams, Chief Science Officer of Marvel Biosciences." We have been investigating our lead candidate MB204, a novel adenosine A2a receptor (A2aR) antagonist for the treatment of depression, which does not involve the serotonin pathway."

In pre-clinical studies the MB-204:

- Reduced depressive symptoms by >80% ($p<0.0001$) in a forced swim test
- Proved to be effective within one hour of oral dosing

"We also believe MB204 could be a potential treatment for Alzheimer's Disease ("AD") as research has been strengthening on the role of the A2aR in AD. Noticeably, up to 40% of AD patients suffer from depression, which may worsen their dementia," said Rod Matheson, CEO of Marvel Biosciences. "The recent success of Biogen (Nasdaq: BIIB) and Eisai's (TSE: 4523) drug for AD is going to garner renew interest in the AD space, and we hope to position MB204 as a highly attractive candidate for the treatment of AD while also treating its frequently associated depression".

1. Moncrieff, J., Cooper, R.E., Stockmann, T. et al. The serotonin theory of depression: a systematic umbrella review of the evidence. Mol Psychiatry (2022).

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