

6 November, 2024

WOKE PHARMACEUTICALS AND UWA FILE A PROVISIONAL PATENT FOR NEW, SIMPLIFIED LSD ANALOGUES

The University of Western Australia in collaboration with Woke Pharmaceuticals has filed an Australian provisional patent covering newly discovered compounds which are structurally close to LSD but are simpler to make and have the potential to deliver derisked psychedelic experiences.

Lysergic acid diethylamide or LSD is a classic hallucinogen used recreationally since 1938 and a molecule that has shown to have meaningful benefit for patients with certain mental health disorders. In March this year, an LSD formulation achieved 'breakthrough status' by the US Food and Drug Administration (FDA).

Filed on the 9th of October, the provisional patent follows the remarkable discovery of 55 novel compounds closely related to LSD by lead researcher Associate Professor Scott Stewart and Postdoctoral Fellow, Dr Michael Nutt from the University of Western Australia.

A key consideration of the drug discovery program was to produce easy-to-synthesise analogues of LSD with high potency at the serotonin receptor required for psychedelic effects (5-HT_{2A}), but with reduced, or ideally abolished, activity at an important but unwanted off-target cardiac receptor (5-HT_{2B}), which with chronic use is associated with life-threatening side effects including heart valve failure. This cardiac toxicity liability is currently shared by all classical psychedelics in use and engineering new compounds without activity at 5HT_{2B} is a top priority for next-generation drugs. This is in line with the FDA's recently issued guidance on assessment of new psychedelic therapies.

Associate Professor Scott Stewart says "LSD-like compounds possessing similar activity to LSD at the 5-HT_{2A} receptor but with diminished activity at the 5-HT_{2B} receptor would be beneficial, in that they would likely possess many of the potential positive effects of the classical psychedelics like LSD, but they would have a reduced potential to cause adverse heart problems".

Dr Michael Nutt says "Of the 55 new compounds disclosed in the filed provisional patent, 23 have demonstrated up to 50-fold selectivity between these two receptors and in two cases elicited no response at the off-target 2B receptor at any tested concentration. This provisional filing covers the chemical space surrounding our new scaffold, enabling us to proceed with optimisation of a lead candidate. We hope that these discoveries can lead to safer therapeutic use of LSD, which has shown huge promise for treating many difficult and challenging conditions".

The next stage of the joint project involves *in vitro* pharmacokinetic profiling which includes exploring how the new compounds are absorbed, distributed, metabolised and excreted. This will help predict speed of absorption, oral availability and half-life of the candidates, essential parameters for engineering shorter-acting drugs better suited for the clinic.

Following the next stage, it is expected that an *in vivo* preclinical program will be undertaken to test the safety and efficacy of the new LSD analogues in animal models of various mental health conditions, paving the way for Phase I clinical trials.

Matthew Hayne, Managing Director of Woke Pharmaceuticals said of the development: "Firstly, I'd like to thank Associate Professor Scott Stewart and Dr Michael Nutt for their hard work, passion and dedication that led to these new discoveries and that we are confident will lead to successful patents being granted.



“From a company perspective, we know that development and ownership of strong intellectual property can add tremendous value to a biotechnology business such as ours. In this context, we believe these discoveries represent a significant milestone in the company’s history.

“We are delighted by the discoveries made with our research partnership at the University of Western Australia and look forward to testing ‘real world’ applications of the new compounds in the near future. LSD and LSD analogues hold great promise for sufferers of various conditions,” concluded Matthew Hayne.

*****ENDS*****

For more information, please contact:

Mr Matthew Hayne
Managing Director
matt@wokeph.com

ABOUT WOKE PHARMACEUTICALS

Woke Pharmaceuticals Pty Ltd is an Australian-based company focused on the development and commercialisation of novel psychedelic therapies for the treatment of mental health disorders. The Company’s lead candidates are based on synthetic psilocybin, which is a naturally occurring psychedelic prodrug compound produced by more than 200 species of fungi. Clinical trials have shown its safety and efficacy in the treatment of mental health disorders. Woke Pharmaceuticals is developing two dose forms with rapid release capabilities. The Company is also conducting a novel drug discovery programme to identify pharmacologically optimised analogues of LSD with The University of Western Australia.

For further information, please visit www.wokeph.com.