

Media Release

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Therapeutic psychedelic drug developed to treat mental illness

A novel therapeutic drug combining multiple psychedelic compounds has been developed by University of Melbourne biotech startup Neurala Biosciences to treat a range of mental health and addictive disorders.

In the first clinical study of its kind, nine healthy volunteers, who were all mental health professionals, were given the drug at St Vincent's Hospital Melbourne.

The drug contains standardised levels of dimethyltryptamine (DMT) and three harmala alkaloids in an encapsulated oral form.

Seventeen dosing sessions were conducted under the supervision of two therapists.

The psychedelic effects lasted between 3-5 hours, with the purified formulation inducing powerful altered states that were stronger than all prior reported psilocybin and LSD studies.

Participants described their experiences as deeply meaningful and psychologically insightful.

Consistent with other research, the psychedelic experiences were strongly associated with persisting psychological benefits, including enhanced wellbeing, improved attitudes about life and self, and positive behavioural changes.

Lead author and Neurala Biosciences CEO, Dr Daniel Perkins, said: "The combination of DMT and harmala alkaloids in specific ratios, has been shown to change brain networks involved in self-awareness and emotional reactions, inducing neuroplasticity and reducing neuroinflammation.

"In South America, these compounds are naturally found in a traditional medicinal brew called Ayahuasca, that has shown therapeutic promise. However, the alkaloid content and compound ratios vary greatly, making precise dosing difficult."

With more than one billion people worldwide living with a mental health disorder, and many failing to respond to current treatments and medications, psychedelic therapies are emerging as a promising new paradigm in mental health innovation.

"Australia has already led the way by re-classifying psilocybin and MDMA for therapeutic use," head of the University of Melbourne's Psychedelics Research and Therapeutics Unit Dr Perkins said.

Neurala Biosciences emerged from a decade of research at the University of Melbourne and is developing psychedelic-based neuromedicines intended to treat the root causes of mental illness rather than just managing symptoms.

Its oral DMT-harmala formulation was created in collaboration with IDT Australia, CSIRO and Western Sydney University, and has now entered a Phase 1 pharmacokinetic trial at CMAX in Adelaide.

Neurala was recently awarded \$492,000 in funding through Australia's Economic Accelerator Ignite program to convert their oral product to a high dose nasal product. The startup has also received \$4.5 million syndicated investment from two University venture capital funds; Tin Alley Ventures and the University of Melbourne Genesis Pre-Seed Fund.

“The intranasal product will have similar neurobiological effects but a much faster onset of action and shorter duration, so the psychedelic experience will last around 30-50 minutes as opposed to 3-5 hours,” Dr Perkins said.

“With sessions lasting under an hour, the treatment becomes far more scalable, enabling broader clinical adoption and reduced delivery costs. The recent inclusion of Spravato on Australia’s PBS underscores growing acceptance of such short-acting psychedelic therapies and the potential for mainstream rollout.”

With multiple Food and Drug Administration consultations completed, and international commercial partners engaged, Neurala is advancing its oral and intranasal products to Phase 2 within 12 months and is targeting expedited regulatory approval pathways.

The research was published in [Scientific Reports journal](#).

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