

Viral Vector Manufacturing Facility (VVMF) and Optosleep sign Letter of Intent to advance AAV gene therapy development and manufacturing readiness in Australia

JOINT RELEASE with Tyree Institute of Health Engineering at UNSW Sydney

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Viral Vector Manufacturing Facility Pty Ltd (VVMF), Australia's only commercial viral vector Contract Development and Manufacturing Organisation (CDMO) and Optosleep, an emerging startup involving researchers from UNSW Sydney, have signed a **Letter of Intent (LoI)** to collaborate on the evaluation and development of an adeno-associated virus (AAV)-based optogenetic gene therapy program being advanced by UNSW researchers.

Under the non-exclusive LoI, VVMF will undertake an initial proof-of-concept study to assess the manufacturability of UNSW and Optosleep's **AAV9-based gene therapy candidate**, a key component of the OptoSleep platform, using VVMF's viral vector development and manufacturing capabilities. The study will evaluate productivity, recovery and quality attributes to inform manufacturing feasibility, and chemistry, manufacturing, and controls (CMC) development activities as part of a broader grant application being pursued by UNSW researchers and Optosleep.



Image: VVMF scientists working within the company's viral vector manufacturing facility in Sydney, Australia.

The novel therapy candidate combines gene therapy, optogenetics and medical device technologies. The preclinical program is being developed as a potential treatment for obstructive sleep apnoea (OSA), a common disorder characterised by repeated airway collapse during sleep and affecting many people worldwide.

The approach uses an AAV-based gene therapy delivered to tongue muscles to enable light-responsive activation of upper airway muscles. In combination with a custom-fit oral appliance that delivers light pulses during sleep, the technology is intended to help maintain airway patency during sleep.

The LoI is a great example of clinical translation within the New South Wales (NSW) life sciences ecosystem, bringing together UNSW and Optosleep's research expertise, Tyree Institute of Health Engineering (Tyree IHealthE) translational expertise, and VVMF's advanced manufacturing capabilities. It's a shared commitment to strengthening Australia's sovereign capability in advanced therapy development and manufacturing while creating clearer pathways to translate promising academic research into clinical and commercial applications.

Stephen Thompson, VVMF CEO said: "Australia is producing world-class research in cell and gene therapy. Translating that research into clinical programs requires access to specialised development and manufacturing expertise that is often unavailable locally. We are excited to support the evaluation of OptoSleep's program, supporting the development and manufacturing data needed to advance this promising therapy towards the clinic."



Image from left: Ian Goon - Tyree IHealthE, Dr Christopher Bull- Optosleep, Richard Sokolov - IDE group and Lynne Bilston - School of Biomedical Engineering, UNSW Sydney. Building Better Futures for Health challenge 2025

Dr Ian Goon, COO Tyree IHealthE said: “This collaboration highlights the importance of bringing together the different parts of the health innovation ecosystem to address the critical translational milestones required to advance OptoSleep. We look forward to supporting its continued progression towards clinical implementation and, ultimately, improved outcomes for people living with obstructive sleep apnoea.”

Professor Lynne Bilston, School of Biomedical Engineering, UNSW Sydney, said:

“We are delighted to be partnering with VVMF to develop the manufacturing approach for Optosleep’s gene therapy candidate. VVMF’s expertise in viral vector manufacturing is the essential missing piece for us to bring our new therapy to human trials and then to patients. We are excited about the potential of this partnership.”

About VVMF – Unlocking the Future of Medicine

Viral Vector Manufacturing Facility Pty. Ltd. (VVMF) is Australia’s only Contract Development and Manufacturing Organisation (CDMO) dedicated to providing services in the research, design, development, and manufacture of viral vectors for advanced therapeutic applications. VVMF partners with researchers, clinicians, and bio-pharma companies to accelerate the path to market for cell and gene therapies to local and global patients.

Viral vectors play a crucial role in delivering genetic material into cells and are central to innovative treatments in areas of medicine including cancers and rare diseases.

Contact - For further information please contact media@vvmf.com.au

About Optosleep – Shedding new light on Obstructive Sleep Apnoea

Optosleep is an emerging startup, led by Professor Lynne Bilston and her team of UNSW researchers. Optosleep aims to deliver a new optical stimulation therapy for Obstructive Sleep Apnoea patients who cannot tolerate or do not benefit from existing therapies. Optosleep’s groundbreaking therapy combines a locally delivered gene therapy that makes the upper airway muscles able to be noninvasively stimulated with light, with a minimally invasive oral device that delivers this light stimulation during sleep.

Tyree Institute of Health Engineering (Tyree IHealthE)

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