



Aptar Pharma and Macquarie University Collaborate to Advance Inhaled Biologics Through Australian Research Council-Supported Program

Three-year initiative aims to address critical formulation and delivery challenges associated with high-dose dry powder biologic therapies

Crystal Lake, Illinois, September 25, 2026 - Aptar Pharma, a global leader in drug delivery, dosing and protection technologies and services, today announced a new research collaboration with Macquarie University under an Australian Research Council (ARC) Linkage Project. The three-year program, *"Unlocking the Potential of Dry Powder Carriers for Biologic Applications"* (ARC LP250100089), will investigate formulation approaches designed to support the pulmonary delivery of biologic medicines.

Central to the collaboration is Aptar Pharma's [Orbital™ dry powder inhaler platform](#), an innovative technology designed to enable the delivery of high-payload dry powder formulations. Researchers will evaluate how formulation variables influence aerosol performance when delivered using the Orbital™ platform, generating new insights into the interplay between formulation design and device performance.

As interest in inhaled biologic therapies grows, developers continue to face challenges in delivering large doses of complex molecules while maintaining formulation integrity, aerosol performance and therapeutic effectiveness. Many biologics may also require novel excipient systems to achieve adequate stability and aerosolization. Supported by ARC and industry funding, the project combines Macquarie University academic research with Aptar Pharma's expertise in inhalation science, pharmaceutical development and drug delivery technology.



Orbital™ - Aptar Pharma's advanced Dry Powder Inhaler (DPI) technology

The project will assess engineered, blended and combined dry powder formulations to understand how formulation characteristics influence aerosol behavior and device performance. The resulting data will also support the development of computational fluid dynamics (CFD) models to provide further insight into aerosol behavior and particle transport. These models are expected to support future advances in dry powder formulation design and inhalation system performance.

"Biologic medicines represent a promising area of pharmaceutical development, yet significant challenges remain in translating their potential into effective inhaled therapies," said Guillaume Brouet, Vice President, Analytical, Regulatory and Scientific Affairs, Aptar Pharma. "By combining academic and industry expertise, this program will help advance scientific understanding of high-dose dry powder delivery and support the development of future inhaled biologic medicines."

"The ARC Linkage Program supports collaborations that translate scientific excellence into real-world impact," said Prof. Daniela Traini, PhD, Professor of Respiratory Science, Macquarie University. "This project brings together researchers and industry experts to investigate critical questions in dry powder biologic delivery and support the future development of innovative inhaled therapies."



Press Release



About Macquarie University

Macquarie University is recognised globally for its pre-eminence in key research disciplines, as well as producing graduates who are among the most sought-after professionals in the world. Since its foundation in 1964, Macquarie has aspired to be a different type of university, fostering collaboration between students, academics, industry and society. Located in Sydney's Macquarie Park Innovation District, the University provides world-class facilities and significant opportunities for research, innovation and commercial partnerships, advancing research that addresses global challenges and delivers real-world impact. For more information, visit <https://www.mq.edu.au/faculty-of-medicine-health-and-human-sciences>.

About Aptar Pharma

Aptar Pharma is part of AptarGroup, Inc., a global leader in drug and consumer product dosing, dispensing and protection technologies. Aptar serves a number of attractive end markets including pharmaceutical, beauty, food, beverage, personal care and home care. Using market expertise, proprietary design, engineering and science to create innovative solutions for many of the world's leading brands, Aptar in turn makes a meaningful difference in the lives, looks, health and homes of millions of patients and consumers around the world. Aptar is headquartered in Crystal Lake, Illinois and has over 13,000 dedicated employees in 20 countries. For more information, visit www.aptar.com.

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