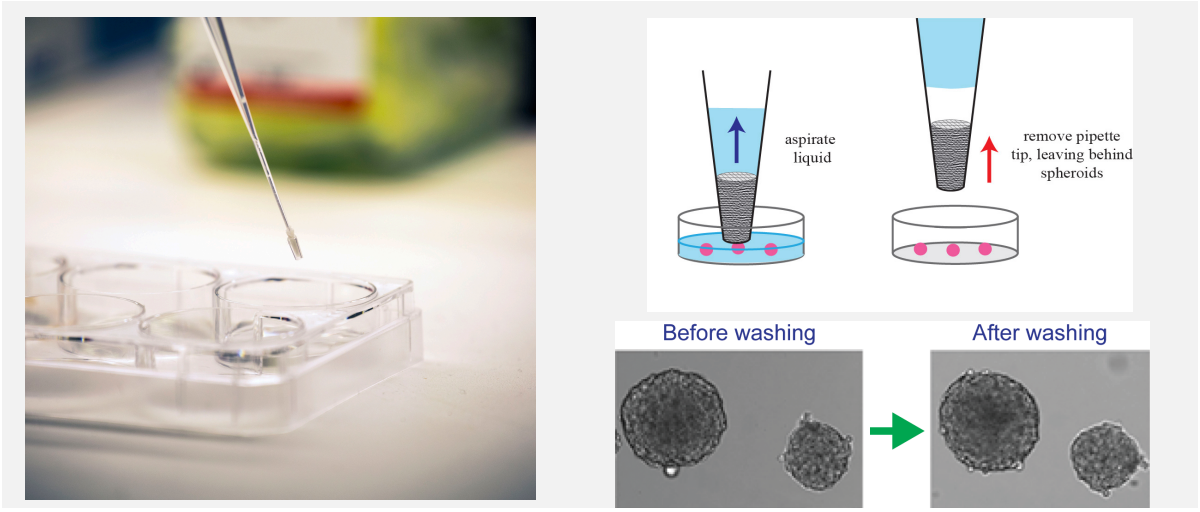
Pipette Tip for 3D Cell Culture



Wettable mesh barrier pipette tip for 3D cell culture

Three-dimensional (3D) cell cultures have been an area of increasing interest and relevance, including in drug discovery, developmental biology and stem cell-based therapies. However, handling 3D multicellular structures can be difficult and time-consuming. In particular, the replacement of liquid media and reagents, in which liquid is removed using pipettes, is difficult to perform as the 3D spheroids can be easily sucked up into the pipette tip. Currently, 50/50 media exchange, centrifugation and free settling techniques are used. However, these techniques are labourious, time-consuming, may damage the morphology / integrity of the spheroids or even lead to the loss of the spheroids.

The Technology

A wettable mesh barrier tip (3D-tip) facilitates media change and washing procedures of 3D cell cultures without damaging the 3D cell structure. The 3D-tip contains a wettable mesh with 40-µm pores allowing the aspiration of liquids including media, drugs, buffers and reagents, with the mesh acting as a barrier preventing the spheroids being sucked up into the pipette tip. After aspiration of liquids, the spheroids remain in the culture vessel without damage to their morphology. This novel pipette tip is suitable for high throughput screening and automation and will revolutionise the techniques used for the production and analysis of 3D multicellular spheroids.

The Team

The tip was developed by the team of A/Prof James St John within the Clem Jones Centre for Neurobiology and Stem Cell Research at Griffith University's Griffith Institute for Drug Discovery (Brisbane, Queensland, Australia). It was devised to advance the Spinal Injury Project that develops a cellular therapy for spinal cord injury.

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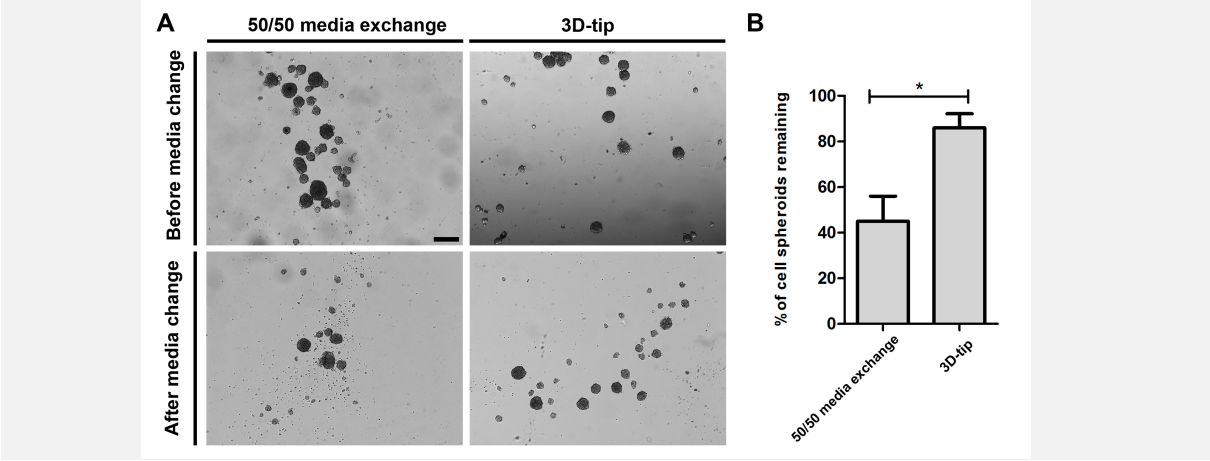
The therapeutic approach transplants cells from the nose into injured spinal cords to form a cellular bridge, enabling the regeneration of nerve cells to make functional motor and sensory connections.

Status of Development

Prototype wettable mesh barrier tips have been successfully tested in a range of applications, including spheroid recovery, integrity and cell viability.



The Intellectual Property

Griffith University has filed an Australian Provisional Patent in October 2017 (AU 2017904064 “Apparatus for and methods of removing fluid from a cell culture”). The University has full rights to the invention.

The Offer

Griffith University is seeking to partner the tip with a company that has the capabilities to produce and bring to market the wettable mesh barrier pipette tips for 3D cell culture. We are offering an exclusive license to the intellectual property and relating know-how.

Point of Contact

Interested parties are encouraged to contact Dr Jens Tampe, Deputy Director, Griffith Enterprise.

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