

Improving Organ on a Chip Technology



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Medical technology and devices



- > TRL 3
- > Pre-clinical

Problem

Organ on a chip technologies are becoming increasingly widespread due to their ability to accurately model organ-level function within a microfluidic platform, enabling rapid testing and diagnostic capabilities improving patient outcomes and research capability in the many disease states. However, these devices traditionally lack the bioreactive properties required to support cell growth under fluid flow. As such current devices are unable to accurately mimic the patient's body and thus decrease their applicability as a solution.

Solution

This technology is a novel plasma surface treatment which enables reagent free covalent immobilisation and improved cell growth in microfluidic devices.

The surface treatment can be applied to any current microfluidic device and will enable the organ on a chip platforms to more accurately mimic disease states. To date it has shown marked improvements in endothelial cell and smooth muscle cells growth, and robust immobilisation of proteins and antibodies.

Scientific Data

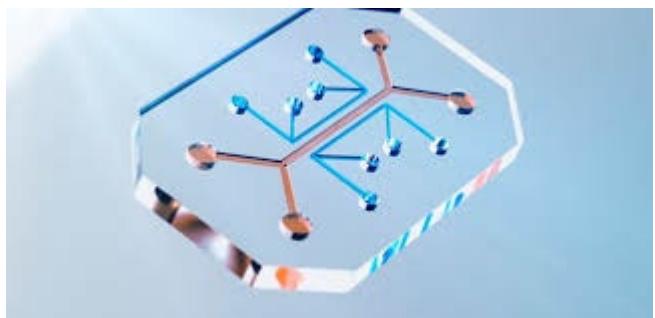
Additional data and information is available at:

<https://doi.org/10.1002/adfm.202313664>

<https://doi.org/10.1016/j.biomaterials.2024.123014>

Potential Commercial Applications

- Artificial organ model development
- Point of care diagnostics
- Drug discovery
- Personalised medicine
- Health monitoring



Intellectual Property Status

This technology is presently the subject of a PCT Application PCT/AU2025/050126.

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Position

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