



**UNSW**  
SYDNEY



## Lab-on-a-Chip for the Medical Device Industry

**Lab-on-a-chip is a microdevice that controls chemical and biological processing using microfluidic integrated circuits. A laboratory process can be miniaturised, automated, and distributed to point-of-care. Alternatively, lab-on-a-chip can be automated and scaled-out using culture processes for delivery of cell and gene therapy.**

### Competitive advantage

- Integrating blood collection, separation, processing and analysis into plastic disposable devices
- Lower cost of goods by reducing reagent consumption, laboratory infrastructure and skilled labour inputs
- Internet connectivity

### Impact

- Increasing healthcare productivity through point-of-care diagnostics, early initiation of therapy, reduced cost-of-goods, and central coordination of resources and supply chains through the Internet-of-Things.

### Successful outcomes

- Invention, licensing, commercialisation and clinical translation of a hollow fibre bioreactor for closed automation of cell manufacture
- Patent pending (US2017274196 (A1), 2014) on plastic microneedle patch for point-of-care blood diagnostics
- Provisional filing on scaling microfluidics to manufacture cells for cell and gene therapy

### Capabilities and facilities

- Medical microdevice development from inception through to microfluidic design, fabrication, prototype evaluation, and clinical application

### Our partners

- Calimmune Australia Pty Ltd
- CSL

### More Information

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