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US agency picks Australia's University of Queensland for one of worldâ??s most ambitious biomanufacturing programmes

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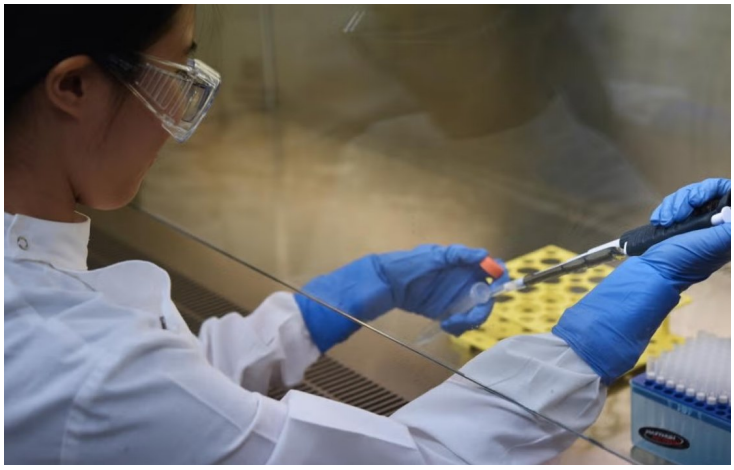
Researchers at UQ's BASE mRNA Facility are helping the US government embed the production of personalised genetic therapies inside hospitals



A United States (US) Government agency has selected Australia's University of Queensland (UQ) researchers to develop technology for personalised RNA medicines to be produced in hospitals, allowing lifesaving treatments to reach patients within days.

UQ’s BASE mRNA Facility is part of a consortium of companies, universities and research institutes with potential to receive up to $57 million ($US40 million) funding under the Advanced Research Projects Agency for Health (ARPA-H), an operational division within the US Department of Health and Human Services.

The programme’s aim is to build a nationwide network of US hospitals where personalised RNA medicines can be produced on demand, so patients can receive treatment within a week of diagnosis.

BASE, a part of UQ’s Australian Institute for Bioengineering and Nanotechnology, will be leading the consortium’s development of technology that analyses the accuracy and safety of each RNA medicine before it reaches a patient, a critical process known as quality control.

BASE facility director Professor Tim Mercer said “We are building an automated system that can test each medicine and confirm it is ready for a patient within days.”

At the heart of the system is nanopore sequencing, a technique that reads individual RNA molecules to help verify the quality, integrity, and safety of the final product.

Professor Mercer said a system prototype will initially be designed and built at BASE’s laboratories where it will be able support the development of personalised mRNA medicines here in Australia. Once working, the system will then be assembled at Houston Methodist Research Institute in Texas, one of the largest health networks in the US, and installed to test RNA medicines.