



Multi-million dollar machines promise bright future for medical research

Flow cytometry is taking medical research by storm. The versatility of its applications is taking scientists into unfounded territory.

In 2005 the Centenary Institute purchased three new machines to upgrade its multi-million dollar flow cytometry facility. This sophisticated equipment offers Centenary researchers a facility with a functional capacity unsurpassed by any other medical research facility in Australia.

Flow cytometry uses laser beams and advanced optics and electronics to count, analyse and purify many kinds of cells that make up tissues in humans and animals to help scientists gain a better understanding of their functions.

Dr Adrian Smith, Manager of Centenary's Flow Cytometry Facility said, "The demands placed on the facility by the rapid developments in our research have often exceeded the capabilities of existing instruments.

"The new machines offer our researchers unrivalled access to state-of-the-art equipment with very wide-ranging applications, driving them to produce work which pushes the boundaries of our current understanding of biological and disease processes."

With the capacity to accurately analyse and purify in excess of 25,000 cells every second, this technology is able to produce results that cannot be obtained by any other method.

At the Centenary Institute, flow cytometry is used on a daily basis to isolate very rare cells, study DNA content in cells, the production of biological agents called cytokines and chemokines, the expression of certain genes, the properties of dying cells and the different stages of cell development.

"Since the installation of the new machines, Centenary researchers have identified new cell populations which play a vital role in diseases such as diabetes, asthma, cancer and inflammatory bowel disease," Dr Smith said.

"We are also using the machines to study responses to tuberculosis vaccines, as well as in myeloma research to monitor residual disease.

"Access to specialised instruments such as these promises a significant increase in research output in Australia. It also opens up new possibilities for experimental design and the generation of novel results. We hope it will foster co-operation and collaboration among doctors and scientists to provide positive outcomes that will ultimately benefit the whole community."



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Captions for photos:

Photo 1_CI: "Pushing the boundaries of medical research at the Centenary Institute in Camperdown"

Photo 2_CI: "Laser beams scan in excess of 25,000 cells every second for unique information"

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