VICTOR CHANG
CARDIAC
RESEARCH
INSTITUTE
INNOVATION
CENTRE

Cell Function & Screening Facility

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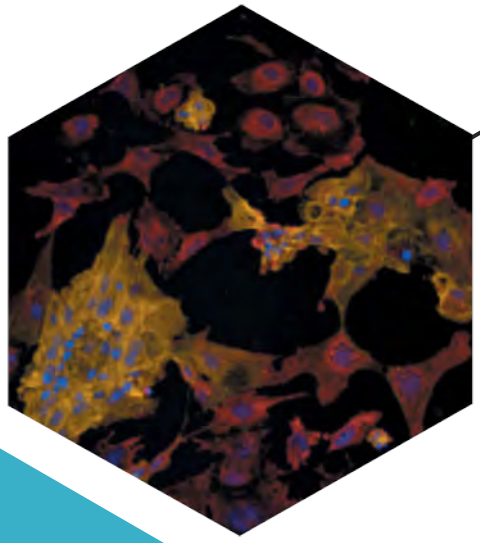
The Victor Chang Cardiac Research Institute Innovation Centre's Cell Function and Screening Facility is a high-throughput phenotyping hub for disease modeling, drug screening and answering fundamental biological questions. High-throughput platforms enable population level phenotyping or drug responses across hundreds of samples, under different conditions/environments simultaneously.



Cell Function & Screening

- Automated patch clamp electrophysiology
- Multielectrode array recordings
- Cell calcium and voltage imaging
- Contractility

Support Provided

- Experienced support personnel
- Hands on training
- Experimental design
- Fee for service
- Data analysis

The Cell Function & Screening Facility provides researchers access to state-of-the-art high-throughput/high-content cell instruments capable of revolutionizing the way we phenotype cells and screen novel therapeutics.

These technologies, funded by the NSW Government, allow high-throughput quantification of electrical signals, contraction, and calcium handling in cells and tissue. These phenotyping platforms facilitate disease modelling, drug screening, identifying new therapies and answering fundamental biological questions.

Syncropatch 384PE (Nanion)

High throughput giga-seal patch clamp platform capable of simultaneous recording from 384 cells for drug screening or functional characterisation.

- Up to 20,000 data points per day
- 384 well format
- Integrated Biomek FX 384-pipettor arm and gripper with advanced microfluidics
- Temperature control
- Voltage or current clamp

Maestro APEX (Axion)

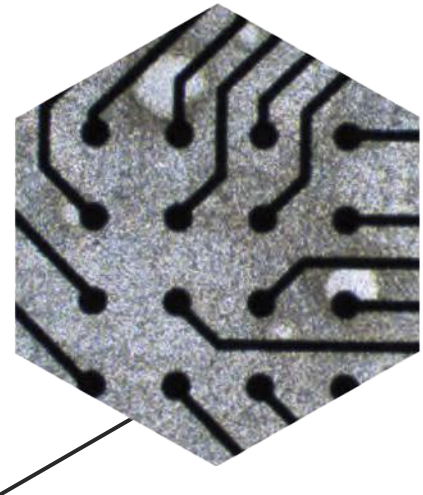
Robotic multi-electrode array platform with capacity for automation of cell seeding, maintenance and recording of extracellular field potentials.

- 768 electrode amplifier
- 24 to 96 well MEA plates
- Integrated 40 plate liconic tissue culture incubator
- Environmental control (Temperature, CO_2)
- Non-invasive, long term assays

CardioExcyte 96 (Nanion)

The CardioExcyte is an automated, hybrid system that records both contractility and electrophysiology from cardiomyocyte networks for applications including drug screening or disease modelling.

- Impedance and extracellular field potentials from the same well
- 96 well parallel data acquisition
- Non-invasive and label-free
- Electrical and optical pacing
- Acute and chronic assessment of cell activity and toxicity
- Integrated gas, temperature and humidity control for long term data acquisition



IC200 Kinetic Imaging Cytometer (Vala Sciences)

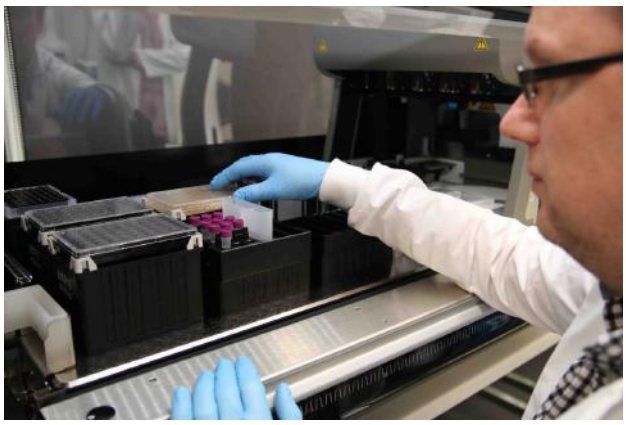
High throughput recording of cellular fluorescence signals from up to 100 cells per well in 96 well format. With built-in segmentation software, the system can record signals from ~10,000 cells per hour.

- 5.53MP Scientific CMOS camera
- Measurement of calcium transients, action potentials
- Electrical pacing
- Integrated liquid handling platform
- Environmental control (temperature, CO_2, O_2)
- Cyteseer Software

Opera Phenix (PerkinElmer)

High content screening platform for imaging the structure and molecular contents of cells.

- 6 – 1536 well format
- Microlens-enhanced Nipkow spinning disk with dual-view confocal optics
- Two large format sCMOS cameras with simultaneous acquisition for increased throughput
- Environmental control for live cell imaging
- Digital phase contrast for label-free cell tracking
- Custom-designed high NA water immersion objectives
- Harmony software for semi-automated acquisition and analysis

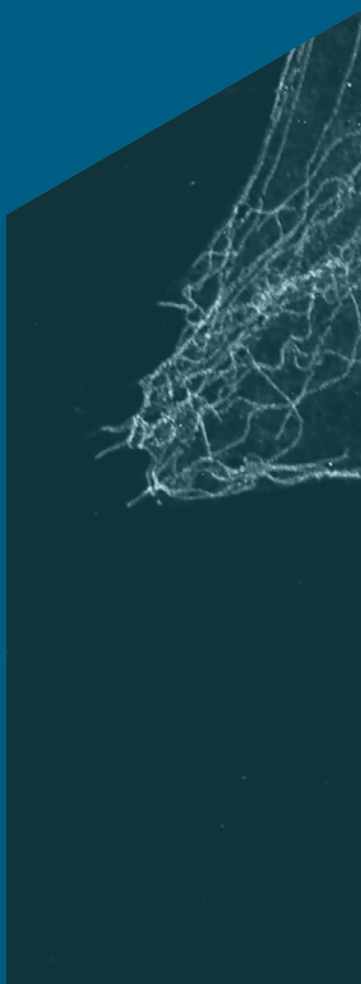


The power of discovery

The Victor Chang Cardiac Research Institute Innovation Centre is heralding a medical research revolution.

Proudly supported by the NSW Government, the Innovation Centre gives researchers access to state-of-the-art equipment and cutting-edge technologies, including two MRI scanners, a series of mass spectrometers, micro-CT, iPSC automated robotics and a cryo-electron microscope.

The Victor Chang Cardiac Research Institute Innovation Centre is pushing the boundaries of knowledge by facilitating a new era of collaboration between researchers across the state and the Asia Pacific, transforming the landscape of cardiovascular research.



Enquire about the Cell Function & Screening Facility

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