To drive innovative, cutting-edge research towards improved prevention, diagnosis and treatments for our greatest heath challenges, our laboratories require not only standard laboratory equipment, but also state-of-the-art technology to achieve these discoveries.

Donated funds whether small or large, contribute to help purchase such equipment. Alternatively, you can choose a specific item on our equipment needs list. Our researchers also invite you to visit them in the laboratory to see how your funding is contributing to their research.

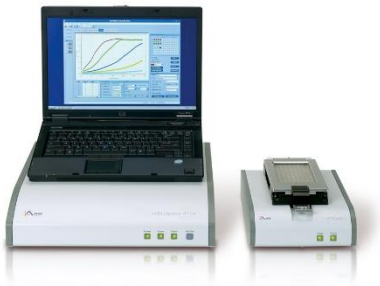
If you would like more information about research equipment donations, or you would like to participate in our donation program, please contact Ms. Kay Blandthorn at kay.blandthorn@hudson.org.au

Clariostar Multimode Plate Reader This machine is a new generation plate reader that can detect luminescence, fluorescence, and absorbance in many different assays including lice cell-based assays. Cost: $90,000		
Seahorse XFp Metabolic Analyser The Seahorse Analyzerwill allow our researchers measure in real-time how cellular metabolism plays a fundamental role in determining a normal or diseased state in an organism. Metabolic dysfunction is a prominent feature of many disease models. The Seahorse XFp Extracellular Flux Analyzer can measure simultaneously cellular respiration and glycolysis in live cells under many experimental conditions to test cell function and the action of novel therapeutics. This state-of-the-art technology has the potential to discover how a disease occurs or is potentiated, to identify cellular mechanisms that can alter disease outcome and to investigate treatment effects on diseased cells. Cost: $60,000		

BioTEK 405 LS Vacuum/Magnetic Filtration 96 well washer The 405 LS Microplate washer provides an optimal way of washing fragile cell layers, making it an ideal piece of equipment to use in a growing number of multiplex assays and bead-based ELISAs, such as those developed on the Luminex® xMAP® technology platform. It has a built-in automated buffer switching and "quick change" manifold designs to provide ease of use and efficiency when washing 96 and 384 well microplates. Cost: $21,500		
BIORAD ChemiDoc MP System The ChemiDoc MP system is a full-feature instrument for gel or western blot imaging. It is designed to address multiplex fluorescent western blotting, chemiluminescence detection, and general gel documentation applications. Cost: $49,500		
Placental Ex Vivo Perfusion System Ex vivo perfusion systems offer a reliable, reproducible method for studying acute physiological responses of an organ to various environmental manipulations. Unlike in vitro culture systems, the cellular organization, compartmentalization and three-dimensional structure of ex vivo–perfused organs are maintained. Cost: $28,000		

GentleMACS Octo Dissociator The gentleMACS™ Octo Dissociator with Heaters is a benchtop instrument capable of fully automated and standardised tissue dissociation or homogenisation of up to eight samples. The instrument allows the user to create user-defined programs for almost any biological material. Cost: $24,740		
Bruker Maldi Biotyper This system allows for the identification of microorganisms using our current Mass Spectrometer platform. It does this by measuring a unique molecular fingerprint of an organism. The application of this technology will allow us to identify organisms such as bacteria, viruses and fungi that cause infectious diseases. Cost: $50,000		
QuantStudio 384-well qPCR System The QuantStudioTM qPCR System has a range of applications, however, the primary use will be to detect changes in gene expression. Gene Expression analysis is an essential genomic tool enabling researchers to quantitate gene expression levels and detect single nucleotide polymorphisms and mutations. It can also be used for other applications such as miRNA profiling, SNP genotyping + more Cost: $66,500		
FV1200 Confocal Microscope Confocal microscopy is an optical imaging technique that provides high resolution fluorescence imaging. This microscope platform provides one of the highest levels of sensitivity on the market. Cost: $40,000 (joint venture with Monash Micro Imaging who are contributing $100,000)		

Biacore Surface Plasmon Resonance Equipment The Biacore X100 is an instrument that can be used to study molecular interactions in realtime, providing dynamic and kinetic data on the relationships between molecules. Cost: $178,832		
Bruker EST-QTOF Maxis Mass Spec The Bruker Daltonics' Maxis Compact Mass Spectrometer (ESI-QTOF) can be used to identify and quantitate (label free) post translational modifications on peptides and proteins. It can also screen and characterise small metabolites and proteins in complex solutions across 4 orders of magnitude without fractionation. The machine can also be fully integrated into our existing Bruker MALDI workflow and provide complimentary data. Cost: $365,000		
AKTAprime Plus (GE) Protein purification system, capable of running various affinity, ion exchange or size exclusion chromatography columns and protocols. **Cost: $25,500**		
BR-102 PLUS Schiller 24-Hour Ambulatory Blood Pressure Monitor The 24 hour BP monitor records patients' blood pressure over an average day. It includes an inflatable cuff with an attached monitor that can be worn by the patient during all normal daily activities. **Cost: $ 3,500**		

Covaris ME220 Ultrasonicator Ultrasonicators emit sound waves which provide a contact-free means to break open cells, extract DNA/RNA from tissues or to fragment DNA. This equipment is a programmable focused ultrasonicator that allows highly reproducible, accurate sample processing. **Cost: $85,000**		
Dolomite Single cell RNA-Seq System This state-of-the-art instrument enables the capture of 10s of thousands of individual cells in droplets within minutes. These droplets can then be processed to profile the genes present in individual cells, providing important insight into disease at the cellular level. **Cost: $200,000**		
xCELLigence Real Time Cell Analyzer SP Instrument The xCELLigence system monitors cell behaviour in real time. Cellular activities including proliferation, adhesion, morphology change can be monitored using this system. The ability to monitor cell responses to eg. drug treatment in real time will significantly reduce the number of experiments required making research quicker and cheaper. Currently, to get data across a series of time-points following drug administration we must perform multiple experiments. **Cost: $150,000**		

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4D-Nucleofector System (Lonza) For certain research questions, researchers need to manipulate cells to take up foreign molecules such as RNA or DNA. A highly successful method for rendering cells susceptible to RNA or DNA is called electroporation, which essentially is a process that uses small amounts of electrical energy to punch tiny holes into cell membranes. While these holes are too small to harm the cells, they are big enough for molecules to pass through. The 4D-Nucleofector, designed by Lonza, is a machine created specifically for electroporation. **Cost: $45,000**		
Zoe Fluorescent Cell Imager (Bio Rad) The ZOE Fluorescent Cell Imager eliminates the complexities of cell imaging associated with traditional microscopes. This fluorescence imaging system combines the ease of use of a personal tablet with the power of an inverted microscope. **Cost: $10,000**		

Precision Balance 3100G x 0.01G **Cost: $800**		
Analystical Balance 220G x).0001G **Cost $2200**		
Micro Centrifuges The ISG® Micro centrifuge is ideal for DNA extraction and concentration, quick spin downs, microfiltration and cell separation. **Cost: $300**		
Precision Digital Heating Blocks **Cost: $1200**		
Hotplate and Magnetic Stirrer **Cost $350**		
Digital Shaking Incubator **$9,600**		

Vortex Mixer **Cost: $200**		
Tube Roller **$600**		
Benchtop pH Meter **Cost: $1,800**		
Pipetteboy Pro **Cost: $500**