



THE UNIVERSITY OF
SYDNEY

Sydney health innovations

Therapies, Diagnostics,
Medical Devices & more

The University of Sydney
Commercialisation Office
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Sydney health innovations

Therapies, Diagnostics and Medical Devices

Discover a new horizon in medical treatment with the University of Sydney's latest advancements in therapeutics, diagnostics, medical devices and digital imaging , to name a few.

Our portfolio offers a diverse array of innovative solutions, addressing some of the most challenging medical conditions.



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Receptor Targeted Therapy for Triple Negative Breast Cancer

Oncology

Preclinical

Protection status:
NPE AU, EP, US, JP

Project summary

This is a targeted TNBC therapy formed of an antineoplastic agent and an LHRH (Leuteinising hormone release hormone) peptide derivative which has been conjugated to an anti-mitotic agent.

Researcher: Pegah Varmini

Contact: julius.juarez@sydney.edu.au

Tech ID: 2018-115

Inhibition of DNA damage repair as a component of a chemosensitization

Oncology

Preclinical

Protection status:
NPE US

Project summary

Inhibition of DNA damage repair as a component of a chemosensitization combination therapy.

Researcher: Robert Baxter

Contact: emma-louise.hunsley@sydney.edu.au

Tech ID: 2018-137

Prostate Cancer Targeting Peptide

Oncology

Preclinical

Protection status:
PCT/AU2023/050638

Project summary

A PSA-activated peptide sequence for prodrugs that enables targeted therapy for prostate cancer.

Researcher: Trevor Hambley

Contact: emma-louise.hunsley@sydney.edu.au

Tech ID: 2021-044

Targeted Cancer Therapy using Bispecific Nanoconjugates

Oncology

Preclinical

Protection status:
WO/2023/205843

Project summary

The innovation at hand is a nanoparticle bioconjugate that employs a dual-nanoparticle approach to target and bind to both cancer cells and immune cells.

Researcher: Veysel Keyser

Contact: julius.juarez@sydney.edu.au

Tech ID: 2021-052

Therapies



Antibody targeting Myc

Oncology

Preclinical

Protection status:
Filing for provisional

Project summary

An antibody targeting Myc, with the potential to disrupt this otherwise "undruggable" target in various cancers.

Contact: taylor.syme@sydney.edu.au

Tech ID: 2024-078

Two-partner secretion system inhibitors

Infectious
Disease

Preclinical

Protection status:
Provisional

Project summary

Novel inhibitors that target the Two-Partner Secretion system, potentially blocking the secretion of virulence factors in Gram-negative bacteria, offering a new approach to combat bacterial infections.

Researcher: Matthew Thomas Doyle

Contact: taylor.syme@sydney.edu.au

Tech ID: 2023-117

Innovative phage-drug nanoconjugates to combat antimicrobial resistance

Infectious
Disease

Preclinical

Protection status:
Provisional

Project summary

This invention relates to new phage-drug nanoconjugates for combating bacterial infections.

Researcher: Hien Duong

Contact: julius.juarez@sydney.edu.au

Tech ID: 2022-026

Novel Bioactive Nano-constructs for Treatment of Chronic Wound Infections

Infectious
Disease

Preclinical

Protection status:
PCT/AU2024/050568

Project summary

A novel phage extracellular vesicle (EV) conjugate designed to promote tissue repair in individuals with bacterial infections.

Researcher: Hien Duong

Contact: julius.juarez@sydney.edu.au

Tech ID: 2022-041

Therapies



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Expansion and enrichment of therapeutic T cells

Cell Therapy

Infectious
Disease

Clinical

Protection status:
US11951127B2, NPE AU, EP

Project summary

Process for expansion and enrichment of therapeutic T cells of defined ratio specific for multiple tumour or infectious antigens for use in immunotherapy.

Researcher: David Gottlieb

Contact: julius.juarez@sydney.edu.au

Tech ID: 2016-102

T cell product targeting viral and fungal infections

Cell Therapy

Infectious
Disease

Clinical

Protection status:
US, 10940165B2 NPE, EP, AU

Project summary

Production of a T cell product targeting viral and fungal infections for the prevention and treatment of opportunistic infection in immunocompromised individuals.

Researcher: David Gottlieb

Contact: julius.juarez@sydney.edu.au

Tech ID: 2015-040

Novel Peptide Mimetic for Heart Repair

Cardiology

Preclinical

Protection status:
WO/2024/050602

Project summary

This invention relates to peptide mimetic compounds, inspired by the natural healing capabilities of PDGF but engineered to circumvent the pitfalls of prolonged exposure that can lead to fibrosis.

Researcher: James Chong

Contact: julius.juarez@sydney.edu.au

Tech ID: 2021-091

Distinct cell surface marker signature for PSC-CMs

Cell Therapy

Cardiology

Preclinical

Protection status:
WO/2023/235928

Project summary

A distinct cell surface marker signature to detect arrhythmogenic pluripotent stem cell-derived cardiomyocytes (PSC-CMs).

Researcher: James Chong

Contact: julius.juarez@sydney.edu.au

Tech ID: 2022-022

Therapies



Non-Toxic iron chelators designed to remove excess iron from inside cells

Hematology

Preclinical

Protection status:
Provisional

Project summary

A non-toxic, effective new class of iron chelators to treat iron overload disease by removing iron from both plasma and inside cells, surpassing the limitations of existing therapies.

Researcher: Rachel Codd

Contact: taylor.syme@sydney.edu.au

Tech ID: 2023-081

Chronic wound healing using β 3AR agonists

Wound Healing

Preclinical

Protection status:
WO2022/174309

Project summary

Treating diabetic ulcer and other chronic wounds using an existing class of pharmaceuticals.

Researcher: Gemma Figtree

Contact: taylor.syme@sydney.edu.au

Tech ID: 2021-007

convers-ABI-lity : Conversation skills training

Neurology

Clinical

Protection status:
Copyright

Project summary

Novel online platform offering a structured conversation skills training program for individuals with acquired brain injury and their clinicians.

Researcher: Rachael Rietdijk

Contact: emma-louise.hunsley@sydney.edu.au

Tech ID: 2022-032

R&D Tool

Novel Pumping System for Close Mimicry of Human Vascular Biology

R&D Tool

Preclinical

Protection status:
NPE AU, EP, US

Project summary

A vascular bioreactor that presents a more accurate simulation of biological conditions critical for research and development in cardiovascular regenerative medicine.

Researcher: Steven Wise

Contact: emma-louise.hunsley@sydney.edu.au

Tech ID: 2021-127



Neurological injury & neurodegenerative disease diagnostic

Neurology

Preclinical

Protection status:
WO2021/217210

Project summary

A rapid and specific means of early diagnostics for neurodegenerative diseases such as Alzheimer's, and acute neurological injuries, such as stroke.

Researcher: Zac Chatterton

Contact: taylor.syme@sydney.edu.au

Tech ID: 2019-103

A Biomedical Device For Precision Imaging of Copper Levels in the CNS

Neurology

Preclinical

Protection status:
WO/2023/168487

Project summary

This invention is a new copper-sensing molecular probe with applications for early diagnosis of Parkinson's disease and management of amyotrophic lateral sclerosis.

Researcher: Kay Double

Contact: julius.juarez@sydney.edu.au

Tech ID: 2021-401

A urinary biomarker panel for early diagnosis of pancreatic ductal adenocarcinoma (PDAC)

Oncology

Preclinical

Protection status:
Provisional

Project summary

Urinary biomarker panel for the early detection of pancreatic.

Researcher: Sumit Sahni

Contact: taylor.syme@sydney.edu.au

Tech ID: 2024-018

A blood biomarker panel for early diagnosis of pancreatic ductal adenocarcinoma (PDAC)

Oncology

Preclinical

Protection status:
Filing for Provisional

Project summary

Blood biomarker panel for the early detection of pancreatic cancer.

Researcher: Sumit Sahni

Contact: taylor.syme@sydney.edu.au

Tech ID: 2024-070



Diagnostics

AI based Smart Heart Diseases Diagnosis System

Cardiology

Preclinical

Protection status:
Software

Project summary

An AI-based ECG signal diagnosis system used for automated diagnosis of various heart diseases.

Researcher: Zihuai Lin

Contact: lulu.xue@sydney.edu.au

Tech ID: 2020-072

Immune Diagnostic for Coronary Artery Disease

Coronary Artery Disease

Preclinical

Protection status:
PCT

Project summary

A diagnostic tool that utilises mass cytometry to detect early stages of coronary artery disease (CAD) by identifying altered immune cell proportions in blood, improving patient outcomes by circumventing the risks of current diagnostic methods.

Researcher: Gemma Figtree

Contact: taylor.syme@sydney.edu.au

Tech ID: 2022-009

High Accuracy Agents for Imaging Neuroinflammation

Neuroinflammation

Preclinical

Protection status:
WO/2024/103126

Project summary

A series of new ligands that exhibit significantly higher affinity for a biomarker of neuroinflammation.

Researcher: Jonathan Dannon

Contact: julius.juarez@sydney.edu.au

Tech ID: 2022-013

Rapid Inflammatory Bowel Disease (IBD) Diagnostic

IBD

Preclinical

Protection status:
PCT

Project summary

A rapid, home-use diagnostic platform for Inflammatory Bowel Disease management by measuring myeloperoxidase activity in faecal samples.

Researcher: Belal Chami

Contact: taylor.syme@sydney.edu.au

Tech ID: 2022-011



Diagnostics

Diagnostic Test for Melanocytic Lesions

Melanoma

Preclinical

Protection status:
Provisional

Project summary

A molecular diagnostic solution with over 95% specificity, leveraging DNA sequencing to objectively differentiate melanoma from benign naevi, thereby reducing the subjectivity and variability of traditional histopathology.

Researcher: Richard Scolyer,
Georgina Long

Contact: taylor.syme@sydney.edu.au

Tech ID: 2023-056

Medical Devices

A plasma-mediated zwitterion grafting methodology

Biomaterials

Preclinical

Protection status:
PCT/AU2024/051018

Project summary

A scalable plasma treatment process to enhance biocompatibility of commercial medical-grade polymers and polymeric medical devices without compromising mechanical properties.

Researcher: Sina Naficy

Contact: lulu.xue@sydney.edu.au

Tech ID: 2023-035

Improved CO₂ sensing layer

Biomaterials

Preclinical

Protection status:
Provisional 2024900454

Project summary

An integrated CO₂ responsive sensing material made by doping amine functionalised polymers with smaller amine-based molecules.

Researcher: Syamak Farajikhah

Contact: lulu.xue@sydney.edu.au

Tech ID: 2023-060

Novel Plasma surface treatments

Biomaterials

Preclinical

Protection status:
Provisional 2024900360

Project summary

A series of plasma surface treatments which promote allow for cell attachment and proliferation under static and dynamic conditions, allowing for improved organ-on-a-chip research.

Researcher: Marcela Bilek

Contact: emma-louise.hunsley@sydney.edu.au

Tech ID: 2023-082

Medical Devices



Microwave photonic multiparameter sensing

Diagnostic

Preclinical

Protection status:
PCT/AU2023/051164

Project summary

An on-chip real-time versatile sensing system that can be applied to many in-situ and off-line measurement scenarios including electric vehicle battery monitoring, blood tests and nanoparticles sensing.

Researcher: Xiaoke Yi

Contact: lulu.xue@sydney.edu.au

Tech ID: 2022-007

Wearable ECG monitoring system

Cardiology

Preclinical

Protection status:
PCT/AU2023/050443

Project summary

A compact wearable ECG monitoring device employing AI-based deep learning algorithms for accurate, real-time diagnosis of cardiac arrhythmia.

Researcher: Zihuai Lin

Contact: lulu.xue@sydney.edu.au

Tech ID: 2021-117

Mechanical clip system for reversible, leak-free assembly of microfluidic devices

Cardiology

Preclinical

Protection status:
Provisional 2023903706

Project summary

A mechanical clip that allows for easy installation and removal of microfluidic devices, while being leak-free, reversible, and allowing for clear observation under a microscope.

Researcher: Arnold Lining Ju

Contact: emma-louise.hunsley@sydney.edu.au

Tech ID: 2023-071

Soft Tissue Load Sensing

Orthopedics

Preclinical

Protection status:
Provisional

Project summary

A minimally invasive method for measuring soft tissue tension, providing real-time surgical feedback.

Researcher: Elizabeth Clarke

Contact: taylor.syme@sydney.edu.au

Tech ID: 2022 -043

Medical Devices



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Wearable augmentative and alternative communication (wAAC)

Wearable
Devices

Mixed
Reality

Preclinical

Protection status:
Provisional

Project summary

A revolutionary technology to help those grappling with complex communication needs.

Researcher: Alistair McEwan

Contact: lulu.xue@sydney.edu.au

Tech ID: 2022 -027

Digital Imaging

Method for Tracking Respiratory Motion for Cardio Radioablation

Oncology

Preclinical

Protection status:
WO 2022/006633

Project summary

This method is a way to track respiratory motion allowing accurate targeting of tissues during cardiac radioablation.

Researcher: Paul Keall

Contact: emma-louise.hunsley@sydney.edu.au

Tech ID: 2020 -034

Reduction of motion artefacts for 4DCBCT

Oncology

Preclinical

Protection status:
Provisional

Project summary

This invention is a new image reconstruction method for new generation linear accelerators that use rapid CBCT acquisition protocols.

Researcher: Paul Keall

Contact: emma-louise.hunsley@sydney.edu.au

Tech ID: 2023 -114

Cardiology

A 3D printing patient-specific microvascular fabrication methodology

Biomaterial

Preclinical

Protection status:
PCT/AU2024/050185

Project summary

A novel 3D printed microfluidic casting method to generate microvessel-on-chip devices based on patient vasculatures to manage treatment and monitor anti-clotting drug efficacy.

Researcher: Lining Arnold Ju

Contact: emma-louise.hunsley@sydney.edu.au

Tech ID: 2022 -047

Cardiology



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Bio-inspired heart valve replacements

Implant

Preclinical

Protection status:
PCT/AU2024/050744

Project summary

Improvements in valve design and materials which increase the lifespan of polymeric replacement heart valves.

Researcher: Sina Naficy

Contact: lulu.xue@sydney.edu.au

Tech ID: 2022 -069

Gene Editing

Next Generation Gene Editing Technology

Gene
Editing

Preclinical

Protection status:
Provisional

Project summary

A new gene editing technology that offers enhanced precision and the capability to insert large DNA sequences without off-target mutations or triggering error-prone DNA repair.

Researcher: Sandro Ataide

Contact: taylor.syme@sydney.edu.au

Tech ID: 2023-023, 2023-074

Other

Novel System for Directed Evolution in Mammalian Cells

Other

Preclinical

Protection status:
PCT/AU2024/050763

Project summary

A novel system designed to harness the power of directed evolution within mammalian cells.

Researcher: Greg Neely

Contact: julius.juarez@sydney.edu.au

Tech ID: 2023 -063

A New Broad Acting Antidote For Venom-induced Local Dermal Necrosis

Other

Preclinical

Protection status:
Provisional

Project summary

This invention is an antivenom treatment offering a broad-spectrum solution for neutralising toxins from various sources including snakes and marine life.

Researcher: Greg Neely

Contact: julius.juarez@sydney.edu.au

Tech ID: 2023 -079

This digital marketing brochure is current as of 30 October 2024. Information presented is for the purpose of providing a summary of commercialisation opportunities in health innovation and IP available from The University of Sydney. Find out more by scanning the QR:



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