UNIQUEST

THE UNIVERSITY OF QUEENSLAND AUSTRALIA | CREATE CHANGE

Pharma & MedTech Innovation Pipeline | May 2020

THERAPEUTIC PROGRAMS

Legend: ● Already partnered (purple) = P · ● Asset available for partnering (orange) = A

Disease area/program name	Indication/product	Modality	Mechanism of Action	Discovery	Hit to lead	Lead Optimisation	Pre-clinical	Clinical	Sales
Oncology									
Gardasil®	Cervical cancer	Vaccine	HPV VLPs	P	P	P	P	P	P
MYB	AML, rare adenoid cystic carcinoma, colon and ER+ve breast	Small molecule	Inhibitor of MYB-p300 interaction	P					
Sox18 inhibitor	Solid tumour metastasis	Small molecule	Sox18 inhibitor	P					
Combination therapy for enhanced ADCC	Cancers treated with targeted antibody therapies	Small molecule	Endocytosis inhibition	A	A		A	A	
CRAC inhibitor	Breast, prostate and ovarian cancers	Small molecule	ORAI1	A	A				
BARF-1	EBV+ lymphoma, gastric and nasopharangeal cancer	Biologic	ADCC and CDC	A	A				
Immunotherapy	Targeted delivery of antigens and/or agonists to dendritic cells	Liposome formulation	Dendritic cell targeted nanoparticle	A	A				
Novel activator of locally resident immunity	Epithelial cancers	Biologic	Immune enhancement	A					
Pain									
EMA401	Neuropathic and inflammatory	Small molecule	AT$_2$ antagonist	P	P	P		P	
Alpha conotoxin	Neuropathic	Peptide	GABA B agonist	P	P				
ORL-1 modulator	Nociceptive	Peptide	ORL-1 agonist	A	A	A			
Nav1.7	Acute and chronic	Peptide	Nav1.7 antagonist	A	A				
GlyR	Inflammation	Small molecule	α3 GlyR potentiator	A	A				
Inflammation and Autoimmune									
Inflammasome inhibitor	Inflammation	Small molecule	NLRP3 inhibitor	P	P	P	P	P	
PGD2	Asthma, atopic dermatitis and Duchenne muscular dystrophy	Small molecule	PGD2 synthase inhibitor	A	A	A			
PAR2 modulator	Inflammation (IBD, psoriasis)	Small molecule	PAR2 antagonist	A	A	A			
C3a modulator	Inflammation (arthritis, asthma and IBD)	Small molecule	C3a receptor antagonist	A	A	A			
Tolerising immunotherapy	Rheumatoid arthritis	Liposome formulation	Antigen specific immune tolerance induction	A	A	A			
Tolerising immunotherapy	Type 1 diabetes	Liposome formulation	Antigen specific immune tolerance induction	A	A	A			
EphA4	Inflammation (ARDS, sepsis & ischaemia-reperfusion injury)	Biologic	EphA4 antagonist	A	A				
HDAC inhibitor	IBD and arthritis	Small molecule	Isoform selective HDAC inhibitor	A	A				
Tolerising immunotherapy	Autoimmune diseases, MS and celiac disease	Liposome formulation	Antigen specific immune tolerance induction	A					
NASH, Diabetes and Obesity									
FGF1 obesity	Obesity	Biologic	Antisense inhibition of FGFR	P	P	P	P		
Targeted IL-22	NASH and type 2 diabetes	Biologic	Inhibit oxidative and ER stress, hepatic inflammation and fat accumulation	P					
PAR2 modulator	Obesity and type 2 diabetes	Small molecule	PAR2 antagonist	A	A	A			
CNS									
NuNerve	Amyotrophic lateral sclerosis and spinal cord injury	Biologic	EphA4 antagonist	P	P	P	P		
Triheptanoin	Epilepsy	Oil-based formulation	Triheptanoin	P	P	P	P		
Nav1.1	Epilepsy	Peptide	Nav1.1 agonist	A	A				
C5a	Neuroinflammation	Peptide	C5a receptor antagonist	A	A				
ASIC1a	Stroke neuroprotection and cardiac myoprotection	Peptide	Selective ASIC1a inhibitor	A	A				
Infectious Diseases									
Molecular clamp sub-unit vaccine	Universal flu, RSV, Ebola and others	Vaccine	Hyper-stabilised viral pre-fusion protein	P	P				
Antibiotic RESTART	Hospital acquired MDR Gram negative bacteria	Small molecule	Adjuvant to restore killing effect of existing antibiotics	P	P				
Ebola vaccine	Post exposure prophylaxis for Ebola virus	Vaccine	Glycoprotein-specific equine IgG	A	A	A	A		
Vancapticin	MDR Gram positive bacteria	Peptide	Membrane disruption	A	A	A			
Novel octapeptin and polymyxin analogues	MDR Gram negative bacteria	Peptide	Membrane disruption	A	A	A			
Insect specific flavivirus vaccines	Yellow Fever, Dengue, Zika, West Nile and other flaviviruses	Vaccine	Chimeric flavivirus with insect-specific flavivirus	A	A				

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CELL THERAPIES

Program Name	Indication/product	Modality	Mechanism of Action	Discovery	Pre-clinical	Clinical	Sales
Regenerative Medicine and Cell Therapies							
TheraPhil	Neutropenia	Cell therapy	Neutrophils	● partnered	● partnered		
Kidney tissue from IPSCs	Kidney tissue for therapeutic use in direct surgical applications	Cell therapy	Stem cells	● partnered	● partnered		
Bioactive nano-polymer scaffold	Bone regeneration	Material	Method of incorporating nano bioactives	● available	● available		
Enodothelial progenitor cell based treatment	Critical limb ischaemia and other vascular conditions	Cell therapy	Stem cells	● available	● available		
Red blood cell production	Red blood cells from haematopoietic stem cells	Cell therapy	Stem cells	● available	● available		
HA-PPS MSC differentiation to cartilege	Knee meniscus and spinal disc repair	Hydrogel/scaffold	Differentiation factor	● available			
Porous tissue scaffold	Tissue scaffold	Material	Method to control porosity	● available			
Scaffold that mimics cell surface	Tissue scaffold and implant coating	Material	Controlled spacing of polymer surface features	● available			

Program Name	Indication/product			POC Validated	Prototype	Lead product	Sales
Research and Development Tools							
Kidney organoids from iPSCs	Kidney tissue for drug discovery and toxicology screening			● partnered	● partnered	● partnered	
Growth hormone assay	*In vitro* bioassay for growth hormone and analogues			● available	● available	● available	
Unnatural amino acids	Platform for incorporating unnatural amino acids (UAAs) into peptide libraries			● available	● available		
Release media	Enables culturing of difficult stem cells			● available			

MEDTECH PROGRAMS

Program Name	Indication/product			POC Validated	Prototype	Lead product	Sales
Biomedical Devices and Diagnostic Technologies							
ImpediMed	Lymphoedema bioimpedance			● partnered	● partnered	● partnered	● partnered
ResApp Health	Mobile health for respiratory disease diagnosis			● partnered	● partnered	● partnered	
Q-Sera	Universal pathology blood clotting tube			● partnered	● partnered	● partnered	
SMART Arm	Device which helps stroke survivors regain arm function faster			● partnered	● partnered	● partnered	
Methylscape pan cancer diagnostic	Rapid method for identifying and isolating cancer genomic and cell free DNA			● partnered			
Brain scanning ultrasound	Scanning ultrasound for treating Alzheimer's disease			● available	● available		
Culture-free bacterial detection	Highly sensitive, rapid method of bacterial capture from diagnostic samples			● available			
Diagnostic for treatment-resistant depression	Companion diagnostic for personalised screening and development of ketamine and related MOA drugs			● available			
Flavivirus diagnostics	Assay with highly specific antigens to detect of a range of flaviviruses			● available			
PLA-Dx breast cancer prognostic	Prognostic to identify HR+ breast cancer likely to recur in patients with aromatase therapy			● available			
Rapid nucleic acid extraction	Method for extraction of amplification-ready nucleic acids from crude tissue samples in just 30 seconds			● available			
Vaccine and Drug Delivery Platforms							
Vaxxas	Needle-free vaccine delivery			● partnered	● partnered	● partnered	
ProGel	Oral stable to small intestine			● partnered	● partnered		
Nano-emulsions	Tailored stable emulsions with targeting capability			● partnered			
VLP vaccine platform	Fast, scalable and adjuvant free virus-like particles			● available	● available		
High loading polymer nanoparticles	Methods to prepare core shell drug polymer nanoparticles with drug loadings that can reach almost 60%			● available			
Bi-specific antibody	Multi-specific targeting constructs for immunotherapy, imaging and sample purification			● available			
Nanocapsules	Encapsulated emulsion droplets for sustained or burst release and ability to coat microbes			● available			
Peptide adjuvant	Self-assembling adjuvant for peptide vaccines			● available			
Sol-gel delivery for insoluble drugs	Liquid formulation which gels upon contact with membrane to extend drug absorption			● available			
Digital and Allied Health							
Nursing assessment software	In-hospital patient assessment software for nurses			● available	● available	● available	● available
Emergency Department Screener	Workflow software for emergency admissions			● available	● available	● available	● available
Comprehensive Health Assessment Program (CHAP)	Evidence-based program to improve the health of adults with intellectual disability			● available	● available	● available	● available
BRAVE	An interactive, digital cognitive behaviour therapy (CBT) program, developed specifically for anxious children and teens (and their parents)			● available	● available	● available	● available
Geriatric Anxiety Inventory (GAI)	Evidence-based tool for older people to measure anxiety and distinguish from dementia			● available	● available	● available	● available
Coping with Multiple Sclerosis Scale (CMSS)	Validated measure of coping with multiple sclerosis-related problems to promote psychological wellbeing			● available	● available	● available	● available
Genomic data blockchain fragmentation	Improves privacy, computational efficiency and removes the need to bring data sets together to perform analysis						

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