

## Pharma & MedTech Innovation Pipeline | December 2019

THERAPEUTIC PROGRAMS

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

● Already partnered    ● Asset available for partnering

## Pharma & Medtech Innovation Pipeline | October 2019

CELL THERAPIES

Program Name	Indication/product	Modality	Mechanism of Action	Discovery	Pre-clinical	Clinical	Sales
<b>Regenerative Medicine and Cell Therapies</b>							
TheraPhil	Neutropenia	Cell therapy	Neutrophils	●	●		
Kidney tissue from iPSCs	Kidney tissue for therapeutic use in direct surgical applications	Cell therapy	Stem cells	●	●		
Endothelial progenitor cell based treatment	Critical limb ischaemia and other vascular conditions	Cell therapy	Stem cells	●	●		
Red blood cell production	Red blood cells from haematopoietic stem cells	Cell therapy	Stem cells	●	●		
HA-PPS MSC differentiation to cartilage	Knee meniscus and spinal disc repair	Hydrogel/scaffold	Differentiation factor	●			
Porous tissue scaffold	Tissue scaffold	Material	Method to control porosity	●			
Scaffold that mimics cell surface	Tissue scaffold and implant coating	Material	Controlled spacing of polymer surface features	●			
<b>Research and Development Tools</b>							
Kidney organoids from iPSCs	Kidney tissue for drug discovery and toxicology screening			●	●	●	
Growth hormone assay	<i>In vitro</i> bioassay for growth hormone and analogues			●	●	●	
Release media	Enables culturing of difficult stem cells			●			

MEDTECH PROGRAMS

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

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