

## NMRC Awarded Projects Competitive Research Grants - November 2020 Grant Calls

### Clinician Scientist Individual Research Grant (CIRG) 20 November Grant Call

Application ID	Project ID	Project Title	PI name	Host institution
CIRG20nov-0009	MOH-000600	Regulation of Circadian Rhythms	David M Virshup	Duke-NUS Medical School
CIRG20nov-0010	MOH-000601	Elucidating the effect of obesity on flaviviral infection and host response to infection.	Ooi Eng Eong	Duke-NUS Medical School
CIRG20nov-0015	MOH-000602	Understanding and exploiting natural killer cell activity in chronic myeloid leukaemia	ONG SIN TIONG	Duke-NUS Medical School
CIRG20nov-0016	MOH-000604	Exosome-infused Device for Enhanced Spinal Fusion	HEY HWEE WENG DENNIS	National University of Singapore
CIRG20nov-0019	MOH-000605	Characterization of metabolic pathways and phenotypes in Multiple Myeloma to identify nutrient vulnerabilities as therapeutic opportunities	Chng Wee Joo	National University of Singapore
CIRG20nov-0031	MOH-000606	A lncRNA candidate in cardiac differentiation and disease pathophysiology	Roger Foo	National University of Singapore
CIRG20nov-0051	MOH-000607	Assessing Structural Interactions of Anti Human Leukocyte Antigen (HLA) Antibodies with Epitopes on HLAntigens in Transplantation (ASIA_HLA_T)	Vathsala Anantharaman	National University of Singapore
CIRG20nov-0062	MOH-000608	Role of Type 2 Innate Lymphoid Cells in childhood idiopathic nephrotic syndrome	Yap Hui Kim	National University of Singapore
CIRG20nov-0073	MOH-000637	Sebaceous gland biology: Wnt signaling as a therapeutic opportunity	Maurice Adrianus Monique van Steensel	Nanyang Technological University

### Clinician Scientist Individual Research Grant - New Investigator Grant (CNIG) 20 November Grant Call

Application ID	Project ID	Project Title	PI name	Host institution
CNIG20nov-0002	-	Effects of bariatric weight loss on biological aging by DNA methylation and shear wave elastographic evidence of kidney injury in obesity (ELASTO study)	Lee Ying Clara Ngoh	National University Hospital
CNIG20nov-0003	-	Oral health, oral microbiome and salivary immunome in gestational diabetes mellitus	Preethi Prajod	National Dental Centre Singapore
CNIG20nov-0005	-	Time-in-Range (TIR), a novel continuous glucose monitoring (CGM) based measure, to improve risk stratification of microvascular complications in type 2 diabetes	Suresh Rama Chandran	Singapore General Hospital
CNIG20nov-0006	-	A Novel Drug Delivery Platform for the Treatment of Ureteric Diseases	Kenneth Chen	Singapore General Hospital
CNIG20nov-0011	-	Deep learning pathway for the management of spine metastases	Thomas Patrick Decourcy Hallinan	National University Hospital

CNIG20nov-0018	-	Studying neurorecovery of retinal ganglion cells in ageing after glaucomatous injury	Katharina Cornelia Bell	Singapore Eye Research Institute
CNIG20nov-0020	-	A Proof-of-Concept Phase 1 Study of RNA Oligonucleotide, MTL-CEBPA In Combination With Atezolizumab and Bevacizumab in Patients with Hepatocellular Carcinoma	Chee Cheng Ean	National University Hospital
CNIG20nov-0021	-	Pharmacogenomics of Bleomycin-induced Lung Injury in South East Asian Hodgkin Lymphoma Patients	Joanne Lee Shu Xian	National University Hospital
CNIG20nov-0022	-	Prospective multi-centre collaborative study of the phenotypic and mutational spectrum of ABCA4 retinopathy in the Asian Population	Chan Hwei Wuen	National University Hospital
CNIG20nov-0023	-	Modulatory effects of mesenchymal stem cells-derived extracellular vesicles on conjunctival innate immune responses to viral infections	Ong Hon Shing	Singapore Eye Research Institute
CNIG20nov-0028	-	A Randomised Clinical Trial in the use of Physiological Intra-Cytoplasmic Spermatozoa injection (PICSi) in couples with a previous poor fertilisation cycle in in-vitro fertilisation.	Tan Shu Qi	KK Women's & Children's Hospital
CNIG20nov-0029	-	Identifying molecular correlates of radioresistance during chemoradiotherapy for locally advanced non-small cell lung cancer	Kevin Lee Min Chua	National Cancer Centre Singapore

### Open Fund - Individual Research Grant (OFIRG) 20 November Grant Call

Application ID	Project ID	Project Title	PI name	Host institution
OFIRG20nov-0015	MOH-000610	Deciphering the metabolic and molecular underpinnings of Zika virus pathogenesis	Chan Kuan Rong	Duke-NUS Medical School
OFIRG20nov-0030	MOH-000611	Identify the molecular and circuit maladaptation of tuberal somatostatin neurons in obesity	Fu Yu	Institute of Molecular and Cell Biology
OFIRG20nov-0033	MOH-000612	Functional investigations of human microbiome secretory enzymes in common dermatological diseases	Li Hao	National University of Singapore
OFIRG20nov-0113	MOH-000613	Intraoperative detection and demarcation of oral cancer resection margins using hybrid fiberoptic Raman spectroscopy and optical coherence tomography associated with deep-learning	Huang Zhiwei	National University of Singapore
OFIRG20nov-0114	MOH-000614	Defining the role of zonal hepatocytes in liver homeostasis, regeneration and tumorigenesis	Fu Naiyang	Duke-NUS Medical School
OFIRG20nov-0115	MOH-000615	Targeting the dysregulated miR-198 rheostat in chronic diabetic foot ulcers	Prabha Sampath	Skin Research Institute of Singapore
OFIRG20nov-0056	MOH-000618	Development of Next-generation Transcriptome Imaging Technology for Molecular Mapping of the Tumor Immune Milieu	Chen Kok Hao	Genome Institute of Singapore
OFIRG20nov-0057	MOH-000619	Discovering and Characterizing novel RSPONDIN receptors for WNT Signaling Potentiation	Bruno Reversade	Genome Institute of Singapore
OFIRG20nov-0112	MOH-000620	COINing a new mode of collagen regulation	Frederic Bard	Institute of Molecular and Cell Biology
OFIRG20nov-0017	MOH-000638	Deciphering the sequence-function interface of the dengue virus non-structural (NS1) protein in pathogenesis	Subhash Vasudevan	Duke-NUS Medical School
OFIRG20nov-0026	MOH-000639	A unique role for ABCB1/MDR1 in tumor suppression and its application to overcome drug resistance in cancer	Koji Itahana	Duke-NUS Medical School
OFIRG20nov-0040	MOH-000640	Combined proton beam therapy and proton beam triggered photodynamic therapy for cancer treatment	Zhang Yong	National University of Singapore
OFIRG20nov-0042	MOH-000641	Restoring functional connectivity and memory in hippocampal neural networks impacted by juvenile stress through metaplasticity and epigenetic modifications	Saji Kumar Sreedharan	National University of Singapore
OFIRG20nov-0045	MOH-000642	Tracking and defining the mechanism of plasmid-mediated carbapenem-resistance transmission in Singapore	Gan Yunn Hwen	National University of Singapore

OFIRG20nov-0049	MOH-000643	Targeted delivery of RNA therapeutics for personalized non-small cell lung cancer treatment using extracellular vesicles	Le Thi Nguyet Minh	National University of Singapore
OFIRG20nov-0060	MOH-000644	Versatile and scalable single-cell preimplantation genetic testing for chromosomal aneuploidy and segmental imbalances with/without concurrent Mendelian mutation detection using third-generation single-molecule sequencing	Chong Siong Chuan Samuel	National University of Singapore
OFIRG20nov-0079	MOH-000645	Hypoxia-driven transcriptomic and epitranscriptomic regulation during Enterococcal colonization and infection	Kimberly Kline	Nanyang Technological University
OFIRG20nov-0085	MOH-000646	Targeting HIF1 $\alpha$ -dependent epigenetic remodeling in immune cells to overcome immune checkpoint inhibitor resistance in triple-negative breast cancer	YU Qiang	Genome Institute of Singapore
OFIRG20nov-0087	MOH-000647	Revisiting the structure/function relationship in glaucoma for improved patient care	Leopold Schmetterer	Singapore Eye Research Institute
OFIRG20nov-0108	MOH-000648	Direct RNA-Sequencing as a scalable method towards quantitative epitranscriptomic markers in cancer	Jonathan Goeke	Genome Institute of Singapore
OFIRG20nov-0119	MOH-000649	Rapid diagnostic of infectious diseases based on nanopore sequencing and AI methods	Mile Sikic	Genome Institute of Singapore
OFIRG20nov-0123	MOH-000650	Fine-tuning of Cav1.2 channel function by galectin-1 and galectin-3 and its implications in heart disease	Soong Tuck Wah	National University of Singapore
OFIRG20nov-0024	MOH-000651	Creating a clinically-relevant skin substitute and source to treat cutaneous wound defects: Use of skin-specific culture platform for growth of umbilical cord lining epithelial cells (CLECs)	Alvin Chua	Singapore General Hospital

### Open Fund - Young Individual Research Grant (OFYIRG) 20 November Grant Call

Application ID	Project ID	Project Title	PI name	Host institution
OFYIRG20nov-0001		Nano-scale structures for versatile transfection of diverse immune cells	Andy Tay Kah Ping	National University of Singapore
OFYIRG20nov-0003		Investigating the functional role of aging-regulated lncRNAs in adipocyte metabolism during aging	ZHOU QIUZHONG	Duke-NUS Medical School
OFYIRG20nov-0005	MOH-000630	Dissection of the genetic determinants of virus attenuation of a clinically-tested live dengue vaccine strain	Choy Ming Ju Milly	Duke-NUS Medical School
OFYIRG20nov-0007	MOH-000631	Understanding a single mutation in DENV NS2B that results in STING-dependent downstream effects that are both anti- and pro-viral	Ng Wy Ching	Duke-NUS Medical School
OFYIRG20nov-0013		Role of resident arterial LYVE-1 expressing macrophages in preventing atherogenic vascular remodeling and (underlying) mechanisms	Lim Hwee Ying	National University of Singapore
OFYIRG20nov-0014	MOH-000652	Characterization of a Novel Neutrophil-Mediated Antimicrobial Pathway Involving Gasdermin E.	Kaiwen Chen	National University of Singapore
OFYIRG20nov-0015	MOH-000632	Regulating inflammation outcome through modulating mitochondrial metabolism	Lee Qin En Cheryl	Duke-NUS Medical School
OFYIRG20nov-0021		Near-Infrared Flexible Upconversion Implantable for Personalized Remote Phototherapeutics in Cancer	Daniel Teh	National University of Singapore
OFYIRG20nov-0023	MOH-000633	Elucidating the impact of chromatin structure dysregulation in hepatocellular carcinoma development	Zhou Qiling	National University of Singapore
OFYIRG20nov-0028		Genetics and Cell-of-origin Influence Genomic Instability in Cancer	Jason Pitt	National University of Singapore
OFYIRG20nov-0031		Targeting $\alpha$ -synuclein aggregation as a therapeutic strategy for Parkinson's disease	Bin Xiao	National Neuroscience Institute
OFYIRG20nov-0032		Neural mechanisms of genetic risk for essential tremor: a multi-cohort, multi-modal, imaging-genetics study	Thomas Welton	National Neuroscience Institute
OFYIRG20nov-0038	MOH-000634	Role of ADAR1 in regulating inflammation and HCC pathogenesis via NF-kB driven lncRNAs	Raghuvaran Shanmugam	Institute of Molecular and Cell Biology
OFYIRG20nov-0044		Uncovering the role of the gut-brain axis in fat preference	TAN Hwei Ee	Institute of Molecular and Cell Biology
OFYIRG20nov-0046		"Stop Going Nuts": Intervention strategies to IgE-mediated mast cell activation from in-depth computational structural modelling and cross-linking Mass Spectrometry	SU TRAN TO CHINH	Bioinformatics Institute
OFYIRG20nov-0047	MOH-000653	Mechanisms organizing tumour invasion in heterotypic spheroid-monolayer co-cultures.	Selwin Wu	National University of Singapore

OFYIRG20nov-0051		Novel Genetic and Neural Correlates of Social Influence of Feeding Behaviour	Xu Sangyu	Institute of Molecular and Cell Biology
OFYIRG20nov-0056	MOH-000635	Investigating the role of lipid peroxidation as an instigator of genomic instability in the progression of non-alcoholic fatty liver disease to hepatocellular carcinoma.	Tan Lu Wen Shawn	Institute of Molecular and Cell Biology
OFYIRG20nov-0066	MOH-000636	Accelerating mammalian cell line development for biomedical applications by data-driven systematic identification of "ideal" transgene integration sites	LAKSHMANAN MEIYAPPAN	Bioprocessing Technology Institute
OFYIRG20nov-0070		Radiation-induced PD-L1 response in cancer – molecular investigations into the roles of KEAP1 and ferroptosis	Lim Kah Suan	National Cancer Centre Singapore
OFYIRG20nov-0075		Investigating the role of m6A RNA methylation in long term memory and neurodegeneration	Ott Stanislav	Duke-NUS Medical School