

## NMRC Awarded Projects Competitive Research Grants - November 2021 Grant Calls

### Clinician Scientist Individual Research Grant (CIRG) 21 November Grant Call

Application ID	Project ID	Project Title	PI name	Host institution
CIRG21nov-0003	MOH-001091	Identifying novel miRNA therapeutic targets in Parkinson's disease	Zhou Zhi Dong	National Neuroscience Institute
CIRG21nov-0005	MOH-001092	Understanding the role of nucleic acid induced immunity in liver diseases	Chen Leilei Polly	National University of Singapore
CIRG21nov-0007	MOH-001093	In-depth mechanistic study of cognitive dysfunction in patients with systemic lupus erythematosus using multi-modal neuroimaging	Anselm Mak	National University of Singapore
CIRG21nov-0008	MOH-001094	Novel dual targeting CAR T approaches against AML	Chng Wee Joo	National University of Singapore
CIRG21nov-0009	MOH-001095	Mechanisms of SALL4 Dysregulation in Hepatocellular Carcinoma (HCC)	Daniel G Tenen	National University of Singapore
CIRG21nov-0010	MOH-001086	Elucidating the role of inflammasome as pathogenic factors, biomarkers and therapeutic targets for Alzheimer's disease and vascular cognitive impairment	Christopher Chen	National University of Singapore
CIRG21nov-0012	MOH-001096	Novel PEEK-based implant material development for surgical treatment of metastatic spine disease and osteoporosis	Naresh Kumar	National University of Singapore
CIRG21nov-0014	MOH-001097	Investigating the critical roles of gelsolin in Wnt/ $\beta$ -catenin-driven cancer progression and dissemination	Yap Suen Mei Celestial Therese	National University of Singapore
CIRG21nov-0015	MOH-001084	Deciphering the molecular basis of LINE-1 repression by RUNX1 towards novel anti-aging and leukemia treatments	Chng Wee Joo	National University of Singapore
CIRG21nov-0023	MOH-001098	Developing 'Software as a Medical Device' (SaMD) from 3D vitreous-retinal-choroidal imaging modalities, to enhance the clinical management of uveitis.	Rupesh Agrawal	Tan Tock Seng Hospital
CIRG21nov-0030	MOH-001099	A phase II study of metronomic capecitabine, oxaliplatin and UGT1A1 genotype-directed irinotecan in metastatic pancreatic cancer patients.	Balram Chowbay	National Cancer Centre Singapore
CIRG21nov-0031	MOH-001100	Influences of an Auto-Reactive Milieu on the Immune Responses to the Coronavirus Disease 2019 (COVID-19) mRNA Vaccines	Yeo Joo Guan	KK Women's & Children's Hospital
CIRG21nov-0032	MOH-001101	Fabrication and in vivo evaluation of next generation, AI based bioactive devices for repair and regeneration of dental tissues	Hemant Vijaykumar Unadkat	National Dental Centre Singapore

### Clinician Scientist Individual Research Grant - New Investigator Grant (CNIG) 21 November Grant Call

Application ID	Project ID	Project Title	PI name	Host institution
CNIG21nov-0023	MOH-001143	SIROLIMUS-COATED BALLOON VERSUS STENT GRAFT FOR THROMBOSED ARTERIOVENOUS GRAFT (SUSTAIN Trial)	Tan Ru Yu	Singapore General Hospital
CNIG21nov-0027	MOH-001078	Understanding the function and phenotypes of tumour-infiltrating lymphocytes in the tumour microenvironment of liver metastases in microsatellite stable (MSS) colorectal cancers	Han Shuting	National Cancer Centre Singapore
CNIG21nov-0006	MOH-001157	RAPID-DKD: MicroRNAs and Axon Guidance Pathway Proteins association with Rapid Progression in Diabetic Kidney Disease	CHAN GEK CHER	National University Hospital
CNIG21nov-0003	MOH-001079	Targeting miRNA-138 in recurrent Glioblastoma (MIRaGe)	BALAMURUGAN A VELLAYAPPAN	National University Hospital
CNIG21nov-0014	MOH-001080	Heart-Brain Changes in Acute Myocardial Infarction: Investigating the Association between Acute Cardiac Injury and Cognitive Decline	Sia Ching Hui (She Zhenghui)	National University Hospital
CNIG21nov-0009	MOH-001081	Therapeutic efficacy of mesenchymal stromal cell exosomes for intervertebral disc regeneration	CHLOE CHAN XIAOYUN	National University Hospital
CNIG21nov-0015	MOH-001082	DREAMS-OT Trial: Delirium Reduction through Early Activation in Motivating and Sleep Promoting Routines: A randomized controlled trial of Occupational Therapy for ICU patients after Coronary Artery Bypass Graft (CABG) surgery	Wong Su Ren	National University Hospital
CNIG21nov-0020	MOH-001076	Mitotherapy for Retinal Pigment Epithelium (RPE) regeneration in Age-Related Macular Degeneration (AMD)	Mayuri Bhargava	National University Hospital
CNIG21nov-0025	MOH-001077	Discovery and validation of transcriptional changes in Soft Tissue Sarcoma responsible for therapeutic effect of Doxorubicin	Valerie Yang	National Cancer Centre Singapore
CNIG21nov-0001	MOH-001083	RESTORES trial: RESToration Of Rehabilitative function with Epidural spinal Stimulation	Wan Kai Rui	National Neuroscience Institute

### NMRC CTG-Investigator-Initiated Trials (CTG-IIT) 21 November Grant Call

Application ID	Project ID	Project Title	PI name	Host institution
CTGIIT21nov-0002	MOH-001158	Staphylococcus aureus Network Adaptive Platform trial (SNAP)	Shirin Kalimuddin	Singapore General Hospital
CTGIIT21nov-0005	MOH-001159	Saline enema and treatment of meconium inspissation of prematurity. Impact on establishing enteral feeds, gut microbiome, inflammation, immunity and developing brain in ELBW (extremely low birth weight) infants	THOWFIQUE IBRAHIM	KK Women's and Children's Hospital

### Open Fund - Individual Research Grant (OFIRG) 21 November Grant Call

Application ID	Project ID	Project Title	PI name	Host institution
OFIRG21nov-0014	MOH-001107	Tracking the evolution of malaria drug resistance in the Greater Mekong Subregion	Zbynek Bozdech	Nanyang Technological University
OFIRG21nov-0027	MOH-001108	Targeting NELF-KAT2B mediated transcriptional plasticity in breast cancer	Tee Wee Wei	Institute of Molecular and Cell Biology
OFIRG21nov-0038	MOH-001109	Molecular dissection of the role of IL11 in chronic kidney disease and analysis of a therapeutic IL11 antibody effects on renal regeneration and reversing kidney failure	Anissa Anindya Widjaja	Duke-NUS Medical School
OFIRG21nov-0051	MOH-001110	Investigating the mechanistic interplay between CYP39A1 and LOXL1 variants in exfoliation glaucoma pathogenesis	Wang Zhenxun	Duke-NUS Medical School
OFIRG21nov-0062	MOH-001111	Dissecting and overcoming drug resistance in leukemia using functional and genomic approaches	Shruti Bhatt	National University of Singapore
OFIRG21nov-0067	MOH-001112	RNA Therapeutics against RNA m6A Methyltransferases as Cancer Therapy: Case Study in Acute Myeloid Leukemia and Multiple Myeloma	Phan Anh Tuan	Nanyang Technological University
OFIRG21nov-0085	MOH-001113	Involvement of G-proteins and F-actin in the cellular targeting of LRRK2 in Parkinson's disease	Albert Edward Manser	Institute of Molecular and Cell Biology
OFIRG21nov-0002	MOH-001114	Rechargeable Light Delivery Device for Wireless Optogenetics Interrogation in Ageing Brain	Zhang Yong	National University of Singapore
OFIRG21nov-0007	MOH-001115	Agrin-driven microenvironment offers an attractive therapeutic strategy in hepatocellular carcinoma	Wanjin Hong	Institute of Molecular and Cell Biology
OFIRG21nov-0025	MOH-001116	Development of Armoured Chimeric Antigen Receptor (CAR)-Tyδ cells for Effective Cancer Targeting	Alice Cheung Man Sze	Singapore General Hospital
OFIRG21nov-0039	MOH-001117	Targeting RNA exonuclease XRN1 to potentiate immune checkpoint blockade therapy	Ding Lingwen	National University of Singapore

OFIRG21nov-0053	MOH-001118	Mathematical modelling and health economic analysis of dengue vaccination strategies in Singapore	Hannah Clapham	National University of Singapore
OFIRG21nov-0054	MOH-001119	Local and global immunomodulation by conventional type 1 dendritic cells in myocardial infarction	Jiong-Wei Wang	National University of Singapore
OFIRG21nov-0068	MOH-001120	Deciphering the role of metabolic reprogramming during nutrient stress in lung cancer	TAM WAI LEONG	Genome Institute of Singapore
OFIRG21nov-0083	MOH-001121	Machine-learning based detection of cancer and drug resistance from non-invasive liquid biopsies	Anders Skanderup	Genome Institute of Singapore

OFIRG21nov-0088	MOH-001122	Predictive Identification of Cancer Biomarkers and Drivers via the Delineation of Novel Topological Domains involving SETDB1 and Cohesin (DiSCs)	Yuin Han Loh	Institute of Molecular and Cell Biology
OFIRG21nov-0091	MOH-001123	Overcome RAFi resistance in targeted cancer therapy by developing advance allosteric inhibitors	Hu Jiancheng	National Cancer Centre Singapore
OFIRG21nov-0099	MOH-001124	Exploiting the metabolic vulnerability of cancers to mitochondrial uncoupling	Cheok Chit Fang	Institute of Molecular and Cell Biology

### Open Fund - Young Individual Research Grant (OFYIRG) 21 November Grant Call

Application ID	Project ID	Project Title	PI name	Host institution
OFYIRG21nov-0001	MOH-001147	Proteomic profiling of exosome molecular signatures in alpha-synuclein induced Parkinson's disease	Zeng Jialiu	Nanyang Technological University
OFYIRG21nov-0002	MOH-001152	Characterization of metabolic vulnerabilities in aggressive fumarate hydratase (FH)-deficient renal cell carcinoma (RCC) for therapeutic opportunities	Guan Peiyong	Genome Institute of Singapore
OFYIRG21nov-0003	MOH-001148	Dual burden of early-life metabolic risk and suboptimal neurodevelopment: multi-omic etiologic discovery and clinical prediction modelling	HUANG JIAN	Singapore Institute for Clinical Sciences
OFYIRG21nov-0007	MOH-001125	Overcoming drug resistance in Chronic Myeloid Leukaemia by computationally predicting cellular responses to perturbations from single-cell data	Ouyang Fengcong, John	Duke-NUS Medical School
OFYIRG21nov-0010	MOH-001130	Macrophage mediated role of Yap/Taz in pulmonary fibrosis	MD MASUM MIA	Duke-NUS Medical School
OFYIRG21nov-0012	MOH-001127	Designing Type I Photosensitizers for Photo-immunotherapy against Tumors	Jianhua Zou	National University of Singapore
OFYIRG21nov-0013	MOH-001154	Nanoradiosensitizers Target Cellular Energy Metabolism to Reverse Tumor Radioresistance and Immunosuppression	TANG Wei	National University of Singapore
OFYIRG21nov-0018	MOH-001149	Developing a biologically-informed measure of brain health during neurodevelopment	Chan Shi Yu	Singapore Institute for Clinical Sciences
OFYIRG21nov-0020	MOH-001128	Oncogenic roles of CIITA in mature T-cell neoplasms	Haruhito Totani	National University of Singapore
OFYIRG21nov-0024	MOH-001136	Spatial and functional mapping of host-microbe interactions in human colorectal cancers	Chia Minghao	Genome Institute of Singapore
OFYIRG21nov-0025	MOH-001155	Clinical relevancy of non-criterion A traumatic events to mental health and clinical utility of transdiagnostic affective factors in identifying subgroups of trauma-exposed patients with severe mental illness	Liu Jianlin	Institute of Mental Health

OFYIRG21nov-0030	MOH-001132	Application of chemical kinetics to unravel the molecular mechanism of bispecific antibody aggregation in biotherapeutic processes	Sean Keng Rui Chia	Bioprocessing Technology Institute
OFYIRG21nov-0034	MOH-001126	Targeting innate immune response in blast crisis, CML	Pavithra Shyamsunder	Duke-NUS Medical School
OFYIRG21nov-0035	MOH-001150	Elucidating Dok3-calprotectin axis in neutrophils to identify potential therapeutic targets for management of severe COVID-19	Loh Jia Tong	Singapore Immunology Network
OFYIRG21nov-0037	MOH-001129	Identifying the coordinative role of the SNpr in the motor and sleep symptoms in Parkinson's Disease	YUAN QIANG	Duke-NUS Medical School
OFYIRG21nov-0038	MOH-001137	Investigating the clinical roles of a novel transcriptional complex in multiple myeloma	LELE WU	Institute of Molecular and Cell Biology
OFYIRG21nov-0039	MOH-001156	Unveiling the molecular mechanisms of coding variants associated with type 2 diabetes for precision medicine	Tan Yaw Sing	Bioinformatics Institute
OFYIRG21nov-0042	MOH-001140	Role of Pirin in the development and progression of colorectal cancer via regulating ferroptosis	Shi Wei	Institute of Molecular and Cell Biology
OFYIRG21nov-0044	MOH-001142	Handheld magnetic imaging for monitoring of suture integrity in deep surgical wounds	Tay Zhi Wei	Institute of Bioengineering and Bioimaging
OFYIRG21nov-0047	MOH-001151	PDIA6-deficiency induced ER-stress: A novel driver of hepatocellular carcinoma	Michael Maier	Genome Institute of Singapore