National Neuroscience Institute
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National Neuroscience Research Institute Singapore

DukeNUS Medical School | Neuroscience & Behavioural Disorders

NNRIS Bench to Bedside Seminar Series

Date: **16 September 2022 (Friday)**

Time: **12:00pm – 1:00pm**

Zoom Details: https://ihis.zoom.us/j/95820234891?pwd=V001aWdubks3WVVjeWhEUGpFbXhXdz09
Meeting ID: 958 2023 4891
Passcode: 312158
Note: Please rename your login name to include your institute to facilitate admission

Moderator: **Assoc Prof Carol TANG**
National Neuroscience Institute

DISTINCT BINDING PROPERTIES OF HUMAN MONOCLONAL LGI1 AUTOANTIBODIES DETERMINE PATHOGENIC MECHANISMS

Dr. Jeanne Tan May May
Associate Consultant
Neurology
National Neuroscience Institute

Abstract:
Leucine-rich glioma inactivated 1 (LGI1) autoantibodies are found in patients with autoimmune encephalitis. LGI1 is a secreted neuronal protein that stabilizes the trans-synaptic complex between the pre- and postsynaptic receptors, ADAM23/22, respectively. It is yet unknown which individual LGI1-specific antibodies (Abs), from within a polyclonal pool, carry pathogenic potential. In our study, we first generate patient-derived monoclonal Abs against LGI1, characterize their sequences and binding characteristics, and then evaluate their pathogenicity using transfected cells, rodent neuronal cultures, and injected hippocampal rodent models with behavioral and electrophysiological assessments.

Biography:
Dr Tan underwent postdoctoral training at NNI/JHS(US) with A/Prof KL Lim/Prof Dawson, evaluating mechanisms governing inclusion cycle in neurodegeneration. She then pursued an MD (Duke-NUS) and further training in neurology CS SR. For the clinician-scientist internship, she studied pathogenic mechanisms of autoantibodies in autoimmune encephalitis at Oxford University(UK) with Prof Sarosh. She is currently an Associate Consultant at NNI Neurology.

A CRISPR UNDERSTANDING OF ACTIN CYTOSKELETAL DYNAMICS IN DENDRITIC SPINES

Ms. Swathi Shivaram Suratkal
PhD Student
Jun Nishiyama Lab
Neuroscience & Behavioural Disorders
Duke-NUS Medical School

Abstract:
Understanding the protein-protein interactions (PPIs) between actin binding proteins and the actin cytoskeleton is crucial to elucidate the mechanisms underlying structural plasticity in dendritic spines. Owing to the small size of spines, and the rapid timescales at which these PPIs occur, conventional methods have remained inadequate to provide insights on actin remodeling in the spine. In this talk, I will be describing novel strategies to obtain endogenous labelling in the brain through CRISPR-based genome editing, imaged through two-photon fluorescence lifetime imaging microscopy that can enable us to visualize actin cytoskeletal dynamics at the level of the synapse.

Biography:
Swathi Suratkal is a PhD student in the IBM program at Duke-NUS. She graduated with an Integrated Masters in Biology from the National Institute of Science Education and Research, India. She is currently working under the mentorship of Dr Nishiyama Jun on understanding actin dynamics underlying structural plasticity in dendritic spines.

All are welcome. No registration is required.