National Neuroscience Institute
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DukeNUS Medical School | Neuroscience & Behavioural Disorders

NNRIS Bench to Bedside Seminar Series

Date: 17 Nov 2023 (Friday)

Time: 12:00pm – 1:00pm

Zoom Details: https://synapxe.zoom.us/j/96109921266?pwd=cmxndjU1R05RZHZTbDBmNTZNUUJYdz09
Meeting ID: 961 0992 1266
Passcode: 453192
Note: Please rename your login name to include your institute to facilitate admission

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

Building a Human Brain Altas to Curate Brain Organoids

Mr Lisheng Xu
Research Assistant
Neuroscience & Behavioural Disorders Programme
Duke-NUS Medical School

Abstract:
We have previously developed midbrain-like organoids (MLOs) from hPSCs and demonstrated their potential in revealing degenerative processes. However, it remains unclear 1) the complete ID of all cells within MLO and 2) how similar the MLOs are to the real human midbrain. To this end, we interrogate single-cell transcriptomics of MLOs and assess its similarity to a human fetal brain reference dataset. Here we present our effort at generating a brain atlas comprising over 1 million cells. Such an atlas can be a useful tool to annotate future query datasets and evaluate the quality of brain organoid protocols.

Biography:
Lisheng was born in China with a B.S. in Biological Science from Zhejiang University. He came to Singapore and joined a lab in NUS for postgraduate research, where he was trained in utilising 3D cell culture models for microbiology and immunology. Lisheng started his journey in Dr Alfred Sun's Lab in June 2023. He is primarily working on bioinformatics across multiple projects in the lab.

The Underlying Basis of Therapeutic Resistance: EZH2 Functional Dichotomy

A/Prof Carol Tang, PhD
Principal Investigator (I)
Neuro-Oncology Research Laboratory
National Neuroscience Institute

Abstract:
Our team studies adult primary brain tumors, specifically IDH-wildtype glioblastoma (GBM). Public consortial efforts largely driven by the US have demonstrated molecular and functional heterogeneity correlating with prognostic outcomes. This thus presents a paradigm shift in how morphologically identical GBM tumors should be diagnosed and treated. Pivotal to bench biology is the establishment of a well-curated, information-driven tumor resource, Glioportal. We describe here a "use & application" of Glioportal to explore ROS-driven tumor cell resistance. The study reveals a novel non-canonical role of enhancer of zeste homolog 2 (EZH2), implicating domain architecture differences underlying EZH2 functional dichotomy.

Biography:
The Neuro-Oncology Research Laboratory represents a team-driven approach between A/Profs Beng Ti Ang (neurosurgeon) and Carol Tang (scientist). Dr Tang graduated from The Scripps Research Institute in 1998 (structural chemistry) as a Glaxo-Wellcome EDB scholar. She underwent further training in cell cycle and developmental neurobiology. Together with Prof Patrick Tan and A/Prof Huilin Shao, the group received the second prize for the 2022 SingHealth Research Team Award.

All are welcome. No registration is required.