TEMS

TLL External Monthly Seminar

TEMASEK LIFESCIENCES LABORATORY

ALL ARE WELCOME

*Scan for address

26 September 2024 (Thursday), 3pm
The Auditorium (Level 1)

Hosted by: Dr Ong Chin Tong

Uncovering novel glioblastoma dependencies for mechanism-guided therapies

Assistant Professor Ong Sek Tong Derrick
Yong Loo Lin School of Medicine,
National University of Singapore

Derrick is the President's Assistant Professor at the Department of Physiology, NUS. His research is focused on identifying novel mechanisms of proliferation/ self-renewal of cancerous and normal brain stem cells. Derrick has also received several awards, including the National Research Foundation Fellowship, President's Assistant Professorship, Early Career Research Award, and the Yong Loo Lin School of Medicine Research Excellence Award.

Glioblastoma (GBM) is the most common and malignant adult brain tumor with an abysmal patient prognosis. The current standard of care for GBM remains to be aggressive surgery followed by radiotherapy, in combination with adjuvant temozolomide treatment. Tumor recurrence is almost inevitable due to the presence of glioma stem cells (GSCs), which exhibit stem cell-like traits, robust proliferation, invasiveness, therapy resistance and extensive cellular plasticity. We employ patient-derived GSCs as an experimental model to uncover new GBM dependencies that contribute to GBM clinical hallmarks. In this talk, I will outline our efforts towards a better molecular understanding of GBM pathogenesis by employing multi-dimensional analyses, including chemical biology, and demonstrate how some of our findings may be translated into actionable clinical modalities. The long-term goal of our research is to develop biomarkers for patient stratification so as to aid precision medicine in GBM treatment.

Recent Publications:

1. Feng J., Chuah Y.H.†, Liang Y.†, Cipta N.O., Zeng Y., Warrier T., Ahmed Rashed Elsayed Elfar G., Yoon J., Grinchuk O.V., Tay E.X.Y., Lok K., Zheng Z., Khong Z.J., Chong Z., Teo J., Sanford E.M., Neo C.J.Y., Chiu H.Y., Leung J.Y., Wang L.C., Lim Y.T., Zhao T., Sobota R.M., Crasta K.C., Tergaonkar V., Taneja R., Ng S., Cheok C.F., Ling S., Loh Y. & **Ong D.S.T**. PHF2 regulates genome topology and DNA replication in neural stem cells via cohesin. ***Nucleic Acids Research***, 2024, online ahead of print. †Equal contribution.
2. Lee B.W.L.*, Chuah Y.H.*, Yoon J.*, Grinchuk O.V.*, Liang Y., Hirpara J.L., Shen Y., Wang L.C., Lim Y.T., Zhao T., Sobota R.M., Yeo T.T., Wong A.L.A., Teo K., Nga V.D.W., Tan B.W.Q., Suda T., Toh T.B., Pervaiz S., Lin Z. & **Ong D.S.T**. METTL8 links mt-tRNA m^3C modification to the HIF1a/RTK/Akt axis to sustain GBM stemness and tumorigenicity. ***Cell Death & Disease***, 2024, 15(5): 338. *Equal contribution.
3. Chuah Y.H.*, Tay E.X.Y.*, Grinchuk O.V.*, Yoon J., Feng J., Kannan S., Robert M., Jakhar R., Liang Y., Lee B.W.L., Wang L.C., Lim Y.T., Zhao T., Sobota R.M., Lu G., Low B.C., Crasta K.C., Verma C.S., Lin Z., & **Ong D.S.T**. CAMK2D serves as a molecular scaffold for RNF8-MAD2 complex to induce mitotic checkpoint in glioma. ***Cell Death & Differentiation***, 2023, 30(8), 1973-1987. *Equal contribution.