DukeNUS Medical School

CSCB Cancer and Stem Cell Biology Seminar Series

Metabolic reprogramming of cancer cell fates in myeloid leukemia

Abstract:

In human cancer, malignant cells reprogram and rewire cellular metabolic networks for robust growth and maintenance and adaptation to their microenvironment. Such altered metabolism often leads to dependency on specific nutrients, and therefore, targeting cancer-specific metabolism would be an effective therapeutic strategy. To achieve the long-term goal, it is essential to identify metabolic vulnerabilities in human malignancy.

Recently we found the branched-chain amino acid (BCAA) metabolism is specifically activated in acute myeloid leukemia, driven by the axis of RNA binding protein MSI2 and an BCAA metabolic enzyme BCAT1. Functional inhibition of the pathway impairs leukemic growth and disease onset, suggesting that activated BCAA metabolism constitutes an effective therapeutic target in human myeloid leukemia.

Speaker:

Professor Takahiro ITO Ph.D.

Laboratory of Cell Fate Dynamics and Therapeutics

Institute for Frontier Life and Medical Sciences

Kyoto University, Japan

Dr. Ito received his Ph.D. in Pharmaceutical Sciences from the University of Tokyo in 2006 for his work on transcriptional regulation by eukaryotic RNA polymerase II. He then shifted his academic focus to stem cell and cancer biology and joined the group of Tannishtha Reya at Duke and later UC San Diego. In 2013, Dr. Ito joined the Department of Biochemistry and Molecular Biology at the University of Georgia as an Assistant Professor and later promoted to an Associate Professor. Dr. Ito is an American Cancer Society Research Scholar since 2017. His research group studies the molecular mechanisms and regulation of stem cell fates with particular interests in RNA binding proteins and metabolic reprogramming in cancer progression and drug resistance.

Date:

27th February 2020 (Thursday)

Venue:

Amphitheatre, level 2
Duke-NUS Medical School
8, College Road,
Singapore 169857

Time:

12:00 p.m. – 1:00 p.m.

Host:

Dr. Sin Tiong ONG
Associate Professor
Laboratory of Haematologic Malignancies
Programme in Cancer & Stem Cell Biology

No registration is required. All are welcome.
Any enquiries, please contact:
Lilian Poon (6601 3779)