Seminar Announcement

Genome Institute of Singapore
A*STAR

Speaker: Dr. Yutaka KONDO
Division of Cancer Biology,
Nagoya University Graduate School of Medicine

Title: **Roles of lncRNAs in Human Cancers**

Date: 19 February 2018 (Monday)

Time: 2.00pm to 3.00pm

Venue: GIS Seminar Area, Level 2, Genome

Host: Dr. Shyam PRABHAKAR
Associate Director, Computational & Systems Biology

Abstract:

Recent comprehensive molecular profiling in many types of cancers has revealed oncogenic mutations and the aberrant expressions of protein-coding genes. However, because the coding genome accounts for less than 2% of all DNA sequences and many mutations were reported in non-coding sequences, the dysregulation of non-coding RNAs might affect tumor phenotypes. Indeed, long non-coding RNAs (lncRNAs) have been reported to affect diverse biological processes through the regulation of mRNA stability, RNA splicing, chromatin structure, and miRNA-mediated gene regulation by acting as miRNA sponges. Furthermore, accumulating studies have demonstrated the roles of lncRNAs in tumorigenesis; however, the precise mechanisms of many lncRNAs are still under investigation.
We recently found that two lncRNA have interesting behaviors during tumorigenesis. I demonstrate the mechanistic insights into how lncRNAs regulate gene expression and contribute to glioma tumorigenesis via interactions with other regulatory molecules. I especially highlighted the role of Taurine Upregulated Gene 1 (TUG1) and ECONEXIN, which were recently reported to have biological functions related to gene regulation, and discuss the future clinical implications of lncRNAs in cancer treatments.

1) Deguchi S, Katsushima K, Hatanaka A, Shinjo K, Ohka F, Wakabayashi T, Zong H, Natsume A, Kondo Y (2017) Oncogenic effects of evolutionarily conserved noncoding RNA ECONEXIN on gliomagenesis. Oncogene 36: 4629-4640.
2) Katsushima K, Natsume A, Ohka F, Shinjo K, Hatanaka A, Ichimura N, Sato S, Takahashi S, Kimura H, Totoki Y, Shibata T, Naito M, Kim HJ, Miyata K, Kataoka K, Kondo Y (2016) Targeting the Notch-regulated non-coding RNA TUG1 for glioma treatment. Nat Commun 7: 13616.

About the Speaker:

Dr. Yutaka Kondo received his Ph.D. from Nagoya City University Graduate School of Medical Sciences in 2000. After his postdoctoral research mentored by Professor Jean-Pierre Issa at the University of Texas, MD Anderson Cancer Center, he became the faculty of MD Anderson Cancer Center in 2004. In 2005, he joined the faculty of Aichi Cancer Center Research Institute, Japan. In 2014, he became the professor in Department of Epigenomics, Nagoya City University Graduate School of Medical Sciences, and now he is the professor in Division of Cancer Biology, Nagoya University Graduate School of Medicine since 2017. He studied the dynamic regulation of gene expression by epigenetic mechanisms, especially roles of DNA methylation and histone H3K27me3 in human tumor development, and the clinical implications of the aberrant epigenetic alterations. Now, his research project focuses on the interaction between microenvironment and epigenetic regulation, especially extracellular signal-directed epigenetic regulation. His recent data showed that lncRNA-epigenetic regulation in glioma formation and provide a new paradigm whereby targeting lncRNA is an effective novel strategy for cancer treatment.