DukeNUS Medical School | National Cancer Centre Singapore SingHealth | CSCB Cancer and Stem Cell Biology Seminar Series

Long non-coding RNA as an essential regulator of DNA replication for maintenance of cancer cells.

Abstract:

Long non-coding RNAs (lncRNAs) are a class of RNA molecules that carry out an array of cellular functions despite lacking the capacity of coding proteins. LncRNA has also known to drive important cancer phenotypes via interactions with other molecules. We recently found that a subset of lncRNAs enable tumorigenesis by regulating the oncogene-induced DNA damages and/or DNA replication stress. Newly identified lncRNA ECONEXIN regulates the topoisomerase 2 alpha (TOP2A) expression via the upregulation of certain miRNA, which controls topological states of DNA by transient breakage and subsequent rejoining of DNA strands, in glioma cells. Another lncRNA TUG1 regulated the POLH expression, a DNA polymerase involved in the DNA repair by translesion synthesis, via several miRNA in ovarian cancers. Interestingly, TUG1 also interacted with a factor in replisome, particularly under replication-stressed condition, and regulated its function. Our data demonstrated that a subset of lncRNAs play a critical role in regulation of DNA replication in cancer cells and provide a strong rationale whereby targeting such lncRNAs might be an effective novel strategy for cancer treatment.

Date:

16 September 2019 (Monday)

Venue:

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

Time:

12:00 - 1:00 p.m.



Speaker:

Yutaka KONDO, M.D., Ph.D.
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Host:

Bin Ten TEH Ph.D., M.D
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Deputy Director (Research), National Cancer Centre of Singapore
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Prof. KONDO received his Ph.D. in 2000. His postdoctoral research was mentored by Professor Jean-Pierre Issa at the MD Anderson Cancer Center. Currently, he is a professor at Nagoya University Graduate School of Medicine. He has studied dynamic regulation of gene expression by epigenetic mechanisms during human tumor development. Recent his research focus is on regulation of gene function by long non-coding RNA-based mechanisms in human cancers.

No registration is required.
All are welcome.
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