

CANCER SCIENCE INSTITUTE OF SINGAPORE IN THE SPOTLIGHT

ISSUE 73 | FEB 2020

AWARDS & ACHIEVEMENTS

Dr. Takaomi Sanda Awarded the Yong Loo Lin School of Medicine Research Excellence Award



CSI Singapore congratulates Dr. Takaomi Sanda on being awarded the Yong Loo Lin School of Medicine Research Excellence Award for AY2018/2019. This award honours and celebrates faculty members who have demonstrated excellent achievements as researchers. Dr. Sanda's exemplary dedication to furthering cancer research has contributed to a better understanding of T-cell acute lymphoblastic leukemia (T-ALL) and other lymphoid malignancies.

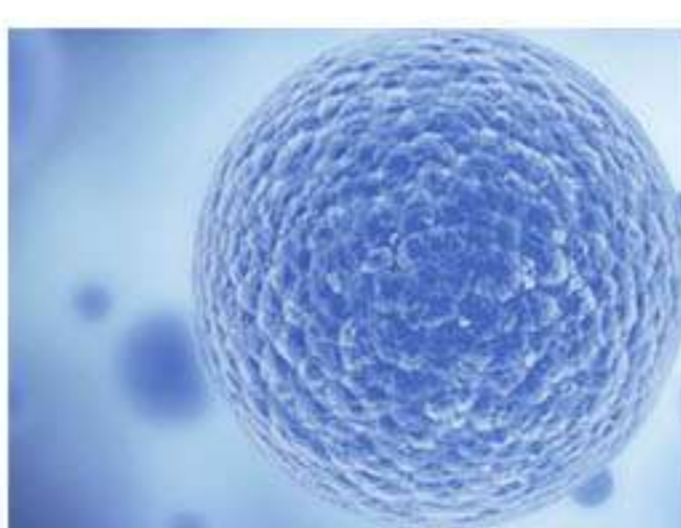
Cis- and Trans-Regulations of Pre-mRNA Splicing by RNA Editing Enzymes Influence Cancer Development. (*Nat Commun*, Feb 2020)

RNA editing and splicing are two processes that dynamically regulate human transcriptome diversity. Although there has been mounting evidence of crosstalk between RNA-editing enzymes (mainly ADAR1) and splicing machineries, there remain knowledge gaps about their mechanisms. Researchers from Dr. Polly Chen's group unveiled approximately a hundred high-confidence splicing events altered by ADAR1 and/or ADAR2, and established that ADAR1 and ADAR2 regulate cassette exons in both directions. The group also found that ADARs-regulated splicing changes per se influence tumorigenesis, underscoring their importance in diseases such as cancer.



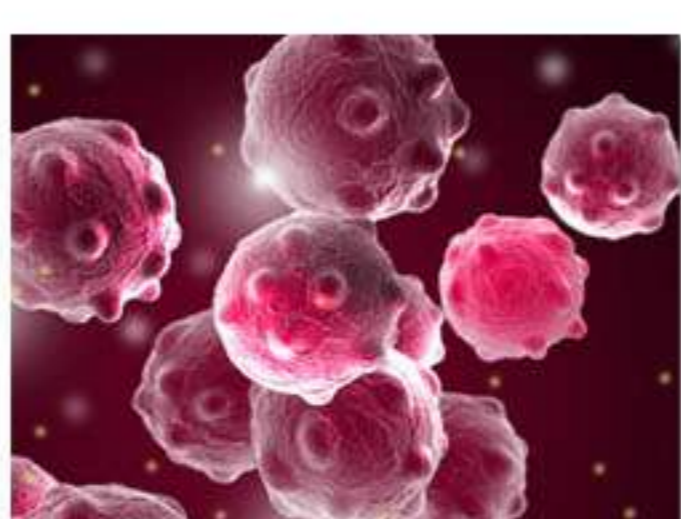
A FLCN-TFE3 Feedback Loop Prevents Excessive Glycogenesis and Phagocyte Activation by Regulating Lysosome Activity. (*Cell Rep*, Feb 2020)

Previous studies suggest that folliculin (FLCN) has a fundamental role in the regulation and maintenance of diverse biological systems. Prof. Toshio Suda and his group recently elucidated the role of FLCN-mediated lysosomal regulation of cellular energy metabolism *in vivo*. Results from the study revealed that TFE3, a master transcription factor for lysosomal biogenesis, acts in a feedback loop to transcriptionally activate FLCN expression. The team proposed that the FLCN-TFE3 feedback loop serves as a rheostat to control lysosome activity and prevents excessive glycogenesis and phagocyte activation.



A Unique Cdk4/6 Inhibitor: Current and Future Therapeutic Strategies of Abemaciclib. (*Pharmacol Res*, Feb 2020)

CDK4/6 inhibitors have transformed the treatment paradigm of estrogen receptor-positive (ER+) breast cancer. In this outstanding review, Prof. Goh Boon Cher and his group discussed the distinguishing features of abemaciclib, as compared to other two CDK4/6 inhibitors, palbociclib and ribociclib. They further explored abemaciclib's ability to act independently of the CDK4/6-cyclin D-RB pathway, which could pave the way for expanded clinical indications and potential predictive biomarkers of abemaciclib.



SAVE THESE DATES!



IN THIS ISSUE

Dr. Takaomi Sanda Awarded the Yong Loo Lin School of Medicine Research Excellence Award

Cis- and Trans-Regulations of Pre-mRNA Splicing by RNA Editing Enzymes Influence Cancer Development

A FLCN-TFE3 Feedback Loop Prevents Excessive Glycogenesis and Phagocyte Activation by Regulating Lysosome Activity

A Unique Cdk4/6 Inhibitor: Current and Future Therapeutic Strategies of Abemaciclib