NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

VIRTUAL BIOLOGY COLLOQUIUM

Friday, 13 Nov 2020 | 4 pm | Online Zoom Session

Hosted by A/P Liou Yih-Cherng

Explore the function of non-coding genes in adipocytes



By **Sun Lei**

Duke-NUS Medical School

Adipocytes play an essential role in maintaining energy homeostasis and their dysfunction is a major contributor to the comprised metabolic health during obesity, diabetes and aging. My group aims to understand the molecular mechanisms governing adipocyte biology at a variety of physiological and pathological conditions. Our work in the past years has established noncoding RNAs as emerging players in adipocyte development and metabolism. Our studies has depicted the non-coding landscapes and identified several long non-coding RNA as essential regulators in adipogenesis, lineage-specific development and obesity. Recently, we have discovered thousands of adipose circular RNAs (circRNAs) by deep sequencing of visceral and subcutaneous fat. Many of these circRNAs are species conserved, tissue specific and dynamically regulated during adipogenesis and obesity. We identified circArhgap5-2 as an indispensable regulator of adipogenesis in vitro and further established that the circArhgap5-2 is essential in maintaining the global adipocyte transcriptional programme involved in lipid biosynthesis and metabolism in vivo. Thus, circRNAs serve as important regulators in adipocyte differentiation and metabolism.

About the Speaker

Dr. SUN Lei is an associate professor in the program of Cardiovascular and Metabolic Disorders, Duke-NUS Medical School. He received his B.S degree from Beijing University in 2001 and Ph.D in Biochemistry from Case Western University in 2008. From 2008 to 2012, he underwent postdoctoral training in the lab of Harvey Lodish at the Whitehead Institute in Boston, MA. In 2012, he was awarded an NRF fellowship award in Singapore and joined the faculty at Duke-NUS. His research focuses on the RNA-regulatory network governing the development and function of major metabolic organs such as adipose and liver at various physiological and pathological conditions.

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