CSCB Seminar Series

Title:

"New tales of chromosome tails - multiple functions of telomere proteins in *Trypanosoma brucei*."

Abstract:

Telomeres, the nucleoprotein complexes at linear chromosomes ends, consist of simple repetitive G-rich sequences and a number of associated proteins. They prevent illegitimate DNA degradation, recombination, and repair mechanism-mediated end fusions at the chromosome end. Therefore, they are essential for chromosome stability and genome integrity in eukaryotic cells. As expected, telomere proteins play important roles in maintaining the telomere terminal G-rich overhang structure in a kinetoplastid parasite, *Trypanosoma brucei*, which causes fatal human African trypanosomiasis. In addition, *T. brucei* telomere proteins have essential functions in heterochromatin-mediated telomeric silencing and regulate the telomeric transcript (TERRA) level. Furthermore, telomere proteins also help maintain subtelomeric integrity and suppress subtelomeric DNA recombination. *T. brucei* undergoes antigenic variation in its mammalian host and regularly switches its major surface antigen, VSG, to evade the host immune response. VSGs are expressed exclusively from subtelomeric loci in a strictly monoallelic fashion, and DNA recombination is a major pathway for VSG switching. Therefore, telomere proteins are important regulators for VSG monoallelic expression and switching, which are critical pathogenesis mechanisms in *T. brucei*.

Date:

14 May 2015 (Thursday)

Time:

4:00 PM to 5:00 PM

Venue:

Meeting Rm 7C Lvl 7
Duke-NUS Grad Med School
8 College Road, S169857
(Opposite Singapore General Hospital, Block 6/7)

Host:

Shang LI, MD, PhD
Assistant Professor
Program in Cancer & Stem Cell Biology
Duke-NUS Graduate medical School Singapore
"No registration is required."
Any enquiry, please contact:
Lilian Poon (Tel: 6601 3779)

Speaker:



Dr. Bibo LI
Professor
Center for Gene Regulation in Health Disease
Cleveland State University
Cleveland, OH
USA

Biography:

Dr. Bibo LI obtained her B.S. in Electrical Engineering from Peking University in 1990. She went to Cornell University Medical College in 1991 to study molecular biology and obtained her Ph.D. degree in January 1997. Dr. Li's PhD project was to characterize a novel telomere length regulation mechanism termed Telomere Rapid Deletion in *Saccharomyces cerevisiae*. Dr. Li joined Dr. Titia de Lange's lab at the Rockefeller University as a postdoc fellow and identified the human RAP1 protein. In 2002, Dr. Li joined Dr. George Cross' lab at the Rockefeller University and identified the first telomere binding protein in *Trypanosoma brucei*. Dr. Li joined Cleveland State University in 2006 as a tenure-track assistant professor. Her lab was the first to demonstrate that telomere proteins play important roles in antigenic variation in *T. brucei*. Dr. Li became an associate professor with tenure in 2011 and has been promoted to professor this year.

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