

“The impact of chromosome deletions on cancer biology”

Dr. Yu Liu

Professor

State Key Laboratory of Biotherapy
West China Hospital, Sichuan University

Date : 16 January 2024 (Tuesday)

Time : 10:30am – 11:30am

Venue : LT-17 Wong To Yick Tong Lecture Theatre, Yeung Kin Man Academic Building

Abstract

Genome instability, including deletion, amplification and others, is a hallmark of cancer. Chromosome deletions happens as frequently as gene mutations, often associated with drug resistance and poor prognosis. The impact of deleted chromosome regions on cancer biology is still unclear. Here, we used multiple mouse models to investigate the role of chromosome 17p in tumorigenesis and drug response. We found that 17p13 deletion (including >100 genes) could drive lymphoma formation. Further studies revealed the molecular mechanisms under which a couple of newly identified tumor suppressor genes, locating on chromosome 17p, promoted the tumor initiation and development. Moreover, our study suggested a new therapeutic strategy for chromosome 17p-deleted tumors. Thus, our results demonstrated that the understudied chromosome deletions play an important role in tumor initiation, development and response to drugs.

Biography:

Dr. Yu Liu is a professor at the State Key Laboratory of Biotherapy, West China Hospital, Sichuan University. After obtained her PhD from Albert Einstein College of Medicine, Dr. Liu have performed postdoc research first in Dr. Yang Liu/Dr. Pan Zheng's laboratory at the University of Michigan, and then in Dr. Scott Lowe's laboratory at the Cold Spring Harbor Laboratory/Memorial Sloan-Kettering Cancer Center. In 2015, Dr. Liu established her laboratory at the Sichuan University as a principle investigator. Dr. Liu's research has been dedicated to unraveling the molecular mechanisms underlying chromosome deletions-driven cancer biology. She developed a conditional knockout mouse model to induce a heterozygous deletion in mouse chromosome 11B3, a region syntenic to human 17p13.1. Through this model, she demonstrated that chromosome 17p deletion promotes tumorigenesis in both p53-dependent and -independent way. Moreover, Dr. Liu's group identified multiple novel tumor driver genes on chromosome 17p13 or associated with other chromosome alterations, illustrating the respective molecular mechanisms. These findings have been published in Nature, Cancer Discovery, Cancer Cell, Blood, Signal Transduction and Targeted Therapy, among others.

Enquiries:

Ms Vivian Woo(3442-4985, vivian.woo@cityu.edu.hk)

All are welcome!