Department of Biomedical Sciences

CityU 香港城市大學 City University of Hong Kong
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presents the seminar series in Cancer Biology, Biotherapy and Nanomedicine

"AMPK and Metformin in Cancer Cell Metabolism and Tumor Metastasis"

Prof Zhi-xiong Xiao
College of Life Sciences
Sichuan University

Date : 11 June 2018
Time: ~~4:00pm to 5:30pm~~ -> 11:00am – 12:30pm
Venue: ~~Y5-304, 5/F Yellow Zone, Yeung Kin Man Building~~
-> Meeting Room 2-130, 1/F, Block 2, To Yuen Building

Abstract

AMP-activated protein kinase (AMPK) functions as an energy sensor and plays a pivotal role in maintaining cell metabolism homeostasis. We show that expression of AMPK catalytic subunit AMPKa1 is dramatically decreased in advanced human cancer samples, concomitant with dysregulated cell metabolism. Knockdown of AMPKa1 promotes EMT and cell mobility in vitro and tumor metastasis in vivo. Oncogenic Ras and PI3K inhibits AMPKa1 expression, resulting in disrupted cell adhesion program. In addition, deregulation of redox homoeostasis is critical for cancer cell sensitivity to metformin. These results indicate that metabolic reprograming is intrinsically linked to cancer metastasis and that AMPK plays an important role in oncogenic signaling-induced cancer metastasis.

(1) Hu L/ Xiao ZXJ, ΔNp63a is a common inhibitory target in oncogenic PI3K/Ras/Her2-induced cell motility and tumor metastasis. (2017) Proc Natl Acad Sci USA, 114(20):E3964-E3973

About the Speaker

1991-1996, Postdoctor, at Harvard Medical School, Dana-Farber Cancer institute,
1996- 2010, Assistant Professor, Associate Professor, and Professor, Department of Biochemistry and Medicine, Boston University School of Medicine
2010- Present,

- National Distinguished Professor and Dean, College of Life Sciences, Sichuan University, ChengDu, China;
- Adjunct Professor of Biochemistry, Boston University School of Medicine,
- Director, Center of Growth, Metabolism and Aging, Sichuan University;
- Chief Scientist, National Key Research Program (973) for "Signaling Network and Cancer Metastasis", China.
- Editor, Cell Death and Diseases

Enquiries:
Dr Mingliang He (3442-4492 , minglihe@cityu.edu.hk)
Ms Irene Wong (3442-4707, irene.wong@cityu.edu.hk)

All are welcome !