

Department of Biomedical Sciences
presents a seminar



“Epstein-Barr virus-associated nasopharyngeal carcinoma: Biological mechanisms for carcinogenesis and advanced live- cell imaging of invasive processes”

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Date : 25 May 2017

Time: 3:00pm to 4:30pm

Venue: Meeting Room 2-130, 1/F, Block 2, To Yuen Building

Abstract

Epstein-Barr virus (EBV) infection is detected in nearly all undifferentiated or poorly differentiated nasopharyngeal carcinoma (NPC) in endemic regions, including Hong Kong and other parts of southern China. Establishment of persistent EBV infection in nasopharyngeal cells is regarded as a prerequisite and an early step of pathogenesis in NPC. Our laboratory has established several premalignant cell lines from tumor-adjacent nasopharyngeal tissues from NPC patients to understand the roles of EBV infection in the carcinogenesis of NPC. One of my studies has defined the genetic alterations involving in bypassing G1/S checkpoint, such as overexpression of cyclin D1 or deletion of p16, permit the viral latency establishment for NPC development. Moreover, continuous interaction between EBV-infected nasopharyngeal cells and the tumor inflammatory stroma leads to the progression of NPC. My recent researches focus on developing 2D and 3D live-cell imaging to examine cancer cell invasion into matrix. In particular, we obtain high resolution time-lapse imaging of the spatial and temporal formation of invadopodia, which are membrane protrusions capable of focally digesting the extracellular matrix. Our ongoing experiments also show that stromal activation of NF-kappaB promote nasopharyngeal cells to form more invadopodia. Since invadopodia are known to mediate effective transendothelial migration of the cancer cells for intravasation into circulation, we are currently establishing an imageable microfluidic system to collect qualitative and quantitative data on the transendothelial potentials of NPC cells under activation of NF-kappaB. In this talk, I will also introduce a project which employs in vivo intravital 2-photon microscopy to study the behaviors of tumors cells infected with wildtype or mutant EBV strains under the interaction of tumor-associated macrophages in nude mice.

About the Speaker

Dr Tsang joined the School of Biomedical Sciences in the University of Hong Kong as Research Assistant Professor in September 2014. She received her Bachelor and Master of Philosophy degrees in the Chinese University of Hong Kong. She obtained her PhD and postdoctoral training in the University of Hong Kong. In 2011, she got the Young Investigator Award in the 18th Hong Kong International Congress of Cancer. With the award of the University of Hong Kong/China Medical Board Grant in 2013, she was appointed as a visiting scholar to examine live-cell invasion processes using advanced optical microscopies in King's College London, UK. She is interested in studying the roles of Epstein-Barr virus in the pathogenesis and development of nasopharyngeal carcinoma.

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All are welcome !