

Seminar

Targeted Destruction of Cancer Stem Cells by Nanomedicine

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Date: 25 May 2017 (Thursday)
Time: 12:00 nn–1:30 pm (Reception with light lunch starts at 11:45 am. To facilitate the order of lunch, please register through email yfung2222@cityu.edu.hk.)
Venue: B6605, Academic 1, City University of Hong Kong
Language: English

Abstract

Development of therapeutics targeting cancer stem cells (CSCs) SCs presents an important anticancer strategy as CSCs have been implicated in recurrence and treatment resistance in many human cancers. We have designed multifunctional silica-based nanoparticles (NPs) for targeted destruction of cancer stem cells, where the NPs encapsulated magnetic cores and chemotherapeutic agents with surface coated with a specific antibody against surface antigens of CSCs. These NPs could bind to CSCs and lead to enhanced accumulation in tumors in vivo. Under an alternating magnetic field (AMF), CSCs from lung, ovarian, and liver cancers were induced to undergo necrosis and apoptosis in the presence of the specific NPs. The combined effects of hyperthermia and chemotherapy also significantly suppressed tumor growth and metastasis induced by lung CSCs in both subcutaneous and metastatic xenograft-bearing mice models.

Biography



Prof. Yang obtained his PhD from University of Toronto and received postdoctoral training in the Scripps Research Institute. His group focuses on cancer biology research and development of biochip technology and nanotechnology for molecular diagnostics and therapeutic applications. Prof. Yang has published over 280 peer-reviewed scientific papers and received 23 USA/China patents. He has trained 28 PhD and MPhil graduates and numerous postdoctoral fellows in his laboratory. He holds honorary professorships in Zhejiang University, the Third Military Medical University, and the PLA Graduate School of Medicine, China. He has been awarded the Chunhui Scholar Award in 2003, the K. C. Wong Foundation Award in 2004, the Shenzhen Science and Technology Innovation Award in 2006, the Hong Kong Technological Achievement Grand Award in 2007, the Natural Science Award by the Ministry of Education in 2015, and the Wuxi AppTech Life Science and Chemistry Award in 2016.

**** ALL ARE WELCOME ****