

BioSyM Seminar Series 2018

Investigating elevated interstitial fluid pressure-enhanced drug resistance of human cancer cells

Mr. Shang Menglin

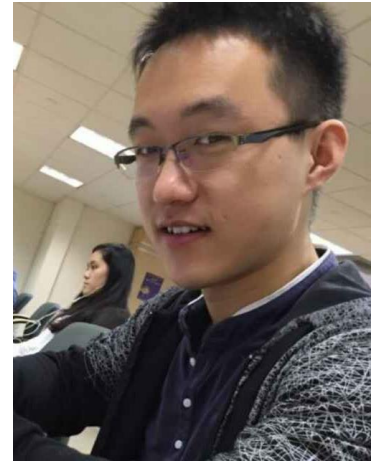
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Date : 04th June 2018, Monday

Time : 12 pm to 1 pm

Venue : Level 5, Perseverance Room



Abstract

An elevated interstitial fluid pressure of 10-60 mmHg is very common in most tumors. It is caused by the accumulation of fluid in interstitial space due to the disorganized hyperpermeable vascular network and absence or non-functioning lymphatic drainage. Current understanding on how this pressure affects drug response of tumor is limited to inhibiting drug delivery. However, we found that an high fluid pressure can also enhance drug resistance of human cancer cells *in vitro*. We also observed an correlation between this enhanced drug resistance and an increased ATP level of tumor cells under pressure. By incorporating a fluid pressure of 20mmHg into a device which was previously validated for CTC culture *in vitro*, we aim to develop an *in vitro* drug screening system for personalized medicine.

Short Biography

Shang Menglin joined SMART-BioSyM in 2016 as a PhD candidate under Prof. Jongyoon Han. He obtained his bachelor degree of Biomedical Engineering at National University of Singapore. His research interests are microfluidics, cancer biology and biomechanics.