

THE UNIVERSITY



OF HONG KONG

DEPARTMENT OF MECHANICAL ENGINEERING

POSTGRADUATE STUDENT TRANSFER SEMINAR

FACE-TO FACE & ONLINE

Title: 3D Multicellular Cancer Microenvironment Platform for High-throughput Personalized Drug Screening - Acute Myeloid Leukemia (AML) and Neuroblastoma (NB) as examples

Speaker Miss CHEUNG Hoi Lam
(M.Phil. student in the Mechanical Engineering Dept.)

Date: 5 May 2021 (Wednesday)

Time: 2:30 p.m.

Venue: Room 7-35, 7/F, Haking Wong Building, HKU

Join Zoom Meeting

<https://hku.zoom.us/j/95778115785?pwd=OGFlb0o0bWUzU09rSHV6KzZUK0Fpdz09>

Meeting ID: 957 7811 5785

Password: 830151

Abstract:

Cancer is the second primary cause of death worldwide. The poor therapeutic outcomes are mainly caused by the generic approaches in choosing treatment modalities. Due to tumor heterogeneity and the difficulty in optimal drug selection, there is an emerging shift towards personalized cancer treatment. Anti-cancer drugs can be rapidly screened using 3D tumoroids made up of patient's cancer cells to provide timely results for clinicians to make decisions on patient-specific treatment regimen. However, traditional drug screening platforms based on monolayer cultures of cancer cells are non-physiological owing to the lack of the tumor microenvironment, which was found to cause resistance in therapy. Our laboratory has been developing a 3D microencapsulation platform using naturally occurring extracellular matrix to fabricate physiologically relevant and extracellular matrix-based 3D microtissues including those derived from stem cells, normal somatic cells and cancer cells. In this transfer seminar, I will update the progress in using the

microencapsulation platform to reconstitute tumor matrix microenvironment, using acute myeloid leukemia and neuroblastoma as examples. Specifically, miniaturized multi-cellular cancer models which are composed of primary cancer cells, stromal cells, extracellular matrix components, and/or endothelium have been fabricated and characterized. Moreover, I will discuss my plan for the PhD study in further optimizing these models and using them for high-throughput screening of cytotoxic or anti-metastatic drugs, with the ultimate goal to implement personalized medicine in the future.

ALL INTERESTED ARE WELCOME

For further information, please contact Prof. B. Chan at 3917 2632.