

Pharmacy

Department Seminar

Date: 9 April 2018
Time: 5pm
Venue: S4A Level 3
Room C&D

Proteomic profiling of Tumour-derived Exosomes in Non-Small Cell Lung Cancer



Thuya graduated with M.B.,B.S degree from University of Medicine, Myanmar and M.Sc (Biomedical Engineering) from NTU. He is currently working in Cancer Science Institute of Singapore and pursuing part time PhD under the supervision of Prof. Paul Ho Chi Lui and Dr. Wang Lingzhi. His research is focused on exosome-derived cancer biomarker investigation.

Lung cancer is the first leading cause of cancer-related deaths worldwide. Even with radical radiotherapy and chemotherapy, the treatments have minimal effects on the five year survival rate. Low-dose computed tomography (LDCT) can reduce lung cancer-specific mortality through early detection but it still has high false positive detection rate. It is thus important to identify novel minimally-invasive NSCLC biomarkers to complement low-dose computed tomography (LDCT) based screening.

Circulating exosomes are important resources for identification of cancer biomarker candidates due to their ability to deliver proteins and RNA contents from which they are secreted. In this study, Linear Trap Quadrupole Fourier Transform (LTQ-FT) mass spectrometry was adopted for differential proteomic profiling of normal lung fibroblast and NSCLC cells derived exosomes. A panel of exosomal proteins were shortlisted based on bioinformatics analysis. After verification analyses, FAM3C was found to be differentially expressed between healthy volunteers and NSCLC patients' plasma samples, suggesting it may have the potential to be diagnostic and prognostic biomarker for lung cancer.

In this seminar, we will discuss proteomic identification of exosomes-derived NSCLC biomarkers and investigation of the roles of FAM3C in lung cancer progression and metastasis.