

Environmental exposure (food and air pollution) are affecting the risk of lung cancer



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Level 6, Centros**

Hosted by Dr Bi Xuezhi

Seminar Abstract

Lung cancer has become the leading cause of mortality and morbidity globally. Therefore, we explore alternative oncology treatment, determine biomarkers to improve diagnosis, and identify risk factor for lung cancer. (1) *Morinda citrifolia* leaves (a common tropical vegetable) extract rich in scopoletin and epicatechin are assessed for anti-lung cancer effects *in vitro* and *in vivo*. (2) To gain a better understanding of cellular metabolism among histologically subtypes of lung cancer, we applied LC/MS to determine metabolic signatures. The biomarkers found are unique to each histological subtype of lung cancer, and appear to be related to their cell-of-origin and mutation status. These biomarkers are useful for assessing the metabolic characteristics of lung cancer, and for potential establishment of novel diagnostic tools for origins and oncogenic mutations of lung cancer. (3) We further investigate the toxicity of nanoplastics and nanoZnO in lung cells because of their increasing utilization and presence in the environment. These two types of nanoparticles are observed to cause perturbations in cellular metabolism associated with their cytotoxic effects.

About the Speaker

Dr Lim Swee Ling is a Research Scientist in the Proteomics research group of BTI. Her main research interest is food and function, and nursing a lifelong passion of all matters related to food on health. Previously, she joined Saw Swee Hock School of Public Health (NUS) to work on metabolomics profiling and screening for potential biomarkers in toxicological and oncological studies. She also investigated the interactions of cell signaling and metabolism in human cells and *Drosophila spp*. In 2016, she investigated the neuro- and hepato-protection using indigenous functional food\herbs at National Taiwan University (ROC Taiwan). Dr Lim also worked as a system analyst in Dutch Lady Milk Industries (Malaysia) for 2 years. She did her undergraduate in Food Science & Nutrition (2012) and completed her PhD in Medical Biotechnology (2015) with Distinction.