

BioSyM Seminar Series 2018

Isolation of Bladder Cancer Cells From Voided Urine in Relation To Patient Prognosis

Charlotte BOUQUEREL

Singapore-MIT Alliance for Research and Technology

Email: charlotte.bouquerel@gmail.com

Date : 7th May 2018, Monday

Time : 12 pm to 1 pm

Venue : Level 5, Perseverance Room



Abstract

Bladder cancer (BC) is the seventh most common cancer among men worldwide and results in more than 120,000 deaths per year. Patients who have had BC require routine monitoring for recurrence and progression. Traditionally, BC surveillance is performed with cystoscopy and cytology, each having certain limitations. Cystoscopy is an invasive and unpleasant procedure for patients while urine cytology is limited by its low sensitivity, especially in the detection of low stage, low grade BC. So there is an urgent need of a new non-invasive and sensitive method for both BC routine monitoring and BC diagnosis. When BC tumors grow, malignant cells are exfoliated spontaneously into urine, although present in a low concentration. Enrichment of rare bladder tumor cells from urine bears similar technical difficulties as isolation of circulating tumor cells (CTCs) from the peripheral blood samples. In this study, we focus on isolation of BC cells from urine patient and on the investigation of their cellular expression. Epithelial to Mesenchymal process (EMT) has been shown to be involved in metastasis formation. We focus on this process and on stem-like cell properties in order to identify tumor aggressivity. The goal is to correlate the results with patient characteristics (tumor size, pathological staging, recurrence, cytology results) to predict tumor progression.

Short Biography

Charlotte BOUQUEREL is currently doing a 5-month internship under Dr. BeeLuan KHOO supervision. She studied in France in Telecom Physique Engineering School and specialized in microfluidics with a Master Degree at Pierre Gilles de Gennes Institute (Paris). She will study next year at Polytechnic School of Montreal (Canada) biomaterials, regenerative medicine and biomicrosystems and will graduate in September 2020. Her research interests are microfluidics, biology and materials.