



Biomedical Engineering Seminar Series

1st Semester, Academic Year 2018

Date: October 2, 2018

Time: 11.00 AM – 12.00 AM

Room 6373, 3rd level, Building 3,

Faculty of Engineering; Mahidol University



Dr. Benjarath Pupacdi Javed

Chulabhorn Research Institute

"The search for genetic mutations in human cancer samples and its ethical aspects"

Cholangiocarcinoma (CCA) is a slow growing but highly metastatic tumor of the bile duct. It is generally discovered at an advanced stage, and as a result has a very poor prognosis. Despite its low incidence rates in Western countries, CCA represents a major public health problem in Thailand, especially in the Northern and Northeastern regions. Khon Kaen notably has the highest incidence rates in the world. CCA is a highly complex disease with multiple subtypes. In this talk, we will discuss our present study of tumor heterogeneity in a specific CCA subtype, e.g., intrahepatic CCA. With the advent of next generation sequencing technology, the cost of DNA sequencing has been on a steep decline and become more affordable in the past decades. As a result, we were able to employ the whole human exome sequencing technique and searched for patient-specific mutations across multiple tumor regions within the same patients. Our search resulted in different types of mutations at the DNA level, namely point mutations, insertions, deletions, and copy number variations. While commonly mutated genes as well as mutation patterns have emerged, different mutations are also present across patients. We will further discuss the ethical aspect of a study like this one, in which personalized results are obtained for each individual patient and the researchers must address the scope of their ethical responsibility.

Department of Biomedical Engineering, Faculty of Engineering, Mahidol University

<http://www.eg.mahidol.ac.th/dept/egbe/>

Email: matchima.rat@mahidol.ac.th

Tel: +662-889-2138 Ext: 6351-2, 6367

**Mahidol
University**
Wisdom of the Land