DUNES
DUKE-NUS Early Career Scientists Association

MiRXES
To Know is to Act

Bioentrepreneur Series

10th February 2017 (Fri)
3-4 pm
Duke-NUS Meeting Room 7C

(Light refreshments will be served at 4 pm)

Developing Novel miRNA Cancer Screening Test in a Local Start-up

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Global cancer burden is expected to double over the next fifteen years. Early detection of cancer significantly improves prognosis but current cancer screening methods are limited by accuracy, invasiveness and cost. In recent years, aberrant miRNA expressions have been associated with the onset, progression and recurrence of many cancer types. Unlike the larger mRNA and DNA molecules, the micro size (~22 nt) confers circulating miRNAs extraordinary stability in biofluids, making them highly attractive candidate biomarkers for non-invasive cancer detection. Conversely, such short nucleotide sequences have made sensitive and robust detection of miRNAs a major challenge, especially for low expression miRNAs in biofluids and formalin-fixed paraffin-embedded tissues. This has resulted in widespread data inconsistency and hampered the clinical translation of many promising miRNA biomarkers.

In this presentation, we will present our journey in developing a high-performance miRNA qPCR technology, identifying novel cancer serum markers and translating them into commercially viable in vitro diagnostic tests. Several case studies will be presented to illustrate the development and commercialization process. Among these, the breast, gastric and lung cancer biomarkers are undergoing prospective clinical validations in multiple countries.

About the Presenter



Lihan has a PhD in Biochemistry from the National University of Singapore. He was trained as a molecular neurobiologist and worked on a spectrum of technology development projects on qPCR, gene delivery, and tumor targeting nanoparticles. Lihan co-authored more than 20 peer-reviewed publications and several patent applications. Lihan co-founded and serves as the CTO of MiRXES, a biotech startup focused on developing microRNA technologies and diagnostic applications. Lihan was recently recognized by the MIT Technology Review as a member of the Innovators Under 35 (Asia). MiRXES was recognized as the Most Promising Start-up at the OCBC Emerging Enterprise Award 2016.