CMSI Center for Medical System Innovation

THE UNIVERSITY OF TOKYO

20130314

医工薬融合 GCOE Seminar Series

Center for Medical System Innovation through Multidisciplinary Integration The University of Tokyo

Advance in Light Microendoscopy

Wibool Piyawattanametha

Director

Advanced Imaging Research (AIR) Center, Faculty of Medicine, Chulalongkorn University, Thailand

Date: Thursday, March 14, 2013
Time: 11:15 - 12:15
Venue: E6 6F. Seminar Room, Faculty of Pharmaceutical Science Research Bldg., the University of Tokyo

Biomedical research truly needs new advances in imaging. Existing modalities of in vivo imaging, such as magnetic resonance imaging or ultrasound, lack the spatiotemporal resolution required to image the fundamental building block of living tissue. By contrast, existing high-resolution techniques for imaging cells and their sub-cellular features are technologies that are best suited for in vitro experiments in tissue slices. Yet, the ability to make direct connections between human pathological symptoms/behavior and the underlying cells and molecules responsible for such behavior requires in vivo techniques that can image cellular constituents. Our research aim is divided into two main projects. The first project is to develop high-resolution and portable optical endoscopes to satisfy unmet clinical diagnostic needs in vivo. These differ from medical endoscopes, which are generally larger and designed to image macroscopic abnormalities or ex vivo tissues. The microendoscopes are miniaturized into two form factors (5-mm and 10-mm diameter). The second project is on the development of a new probe for early detecting cervical cancer deriving from phage display peptide libraries. Therefore, the focus of my talk will be on the development of both the portable confocal microendoscope coupled with targeted peptide probes to improve early detection of cervical cancer in human patients. With combination in cancer screening, it might suggest new approaches to cancer disease diagnosis and treatment. The imaging demonstrations of the endoscopes were on both ex vivo and in vivo from mice and human.

Organizer: **GCOE Program Center for Medical System Innovation through Multidisciplinary Integration, the University of Tokyo**
Masaru Kato, Associate Professor,
Graduate School of Graduate School of Pharmaceutical Sciences, the University of Tokyo

Cooperation: Graduate Program for Leaders in Life Innovation, the University of Tokyo
Center for NanoBio Integration, the University of Tokyo

GPLLI Graduate Program for Leaders in Life Innovation

CNBI Center for NanoBio Integration

For Further Information Contact: Kiyoko Jarnes at CMSI Office
Phone: 03-5841-1509 / Fax: 03-5841-1510
E-mail: jarnes@cnbi.t.u-tokyo.ac.jp

Registration: http://park.itc.u-tokyo.ac.jp/CMSI/