Department of Biotechnology
Ministry of Science and Technology
Government of India
DBT

National Institute of
Advanced Industrial Science
and Technology
AIST

DBT - AIST International Laboratory for Advanced Biomedicine

DAILAB

Classroom for Advanced & Frontier Education

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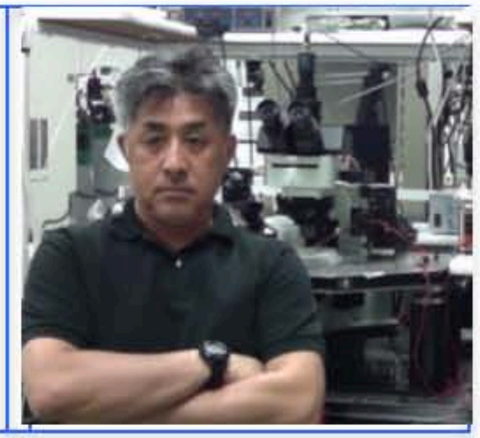
DAILAB-CAFE

Series - 15

Date and Time - June 8, 2016 (16:00~17:00)
Venue - Central 5-41 (2F) Meeting Room # 1

Speaker – Kazuyuki Kiyosue
Affiliation – BMRI, AIST
E-mail: kiyosue-k@aist.go.jp



Tracking of synaptic molecules using two-photon excitation based photoactivation methods.

A neuron has more than thousands of synapses and process information received at individual synapses from presynaptic neurons, and has an ability to modify their synaptic function during development, learning, and in response to environmental changes and neuronal diseases. Neuronal activity can alter the synaptic strength persistently, such as long-term potentiation (LTP) and long-term depression (LTD). Further the plastic changes of synaptic strength are dependent on a history of own synaptic activity. Which is called meta-plasticity.

Due to the nature of synaptic independency, a synapse which has been activated before should have some traces of the activity on their synaptic molecules. However, there are not adequate methods for evaluating molecule behavior in a synapse. To examine the behavior of synaptic proteins in a given synapse, we developed a method with a combination of photoactivatable fluorescent proteins and two-photon excitation optics. I will talk about advantages of the method, and some results about dynamics of some synaptic proteins.

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Thanks for participation!

Speaker: Dr. Kazuyuki KIYOSUE
Topic: Tracking of synaptic molecules using two-photon excitation based photo-activation methods
Date: 8th June 2016 (1600-1700 hours JST)
Host: AIST, Japan

National Institute of Advanced Industrial Science & Technology, Japan

University of Sri Jayewardenepura, Sri Lanka

IIT-Delhi, India

Brawijaya University, Indonesia

Hanyang University, South Korea