



QBic SEMINAR

Speaker

Yusuke Miyanari, Ph.D.

IGBMC Strasbourg, France

Date &
Location

**Friday, September 27, 2013
12:00 - 13:00**

OLABB 1F Lounge (6-2-3, Furuedai, Suita, Osaka)

*There will be a video broadcast in CDB Bldg.D, E-206

Title

Genome imaging using TAL effector

Abstract

The spatiotemporal organization of genomes within the nuclear space is recognized as an emerging key player to regulate genome function, yet still poorly understood. Live imaging of nuclear organization dynamics would be a breakthrough towards uncovering the functional relevance and mechanisms regulating genome architecture. Here we integrated transcription activator-like effector (TALE) technology to visualize endogenous genomic sequences in cultured cells and the living organism. We establish TALE-mediated Genome Visualization (TGV) to label and follow the nuclear positioning of repetitive sequences throughout the cell cycle without altering their function. TGV does not affect cell cycle and embryonic development, and is highly specific allowing differential labeling of parental chromosomes by distinction of SNPs. Our findings extend the application of TALE providing a framework to address the function of genome architecture through visualisation of nuclear dynamics in vivo.

Host

Atsuo Kawahara

Laboratory for Cardiovascular Molecular Dynamics

a.kawahara@riken.jp

Tel: 06-6155-0633

RIKEN QUANTITATIVE BIOLOGY CENTER (QBic)