

DeltaVision|OMX

3D-SIM™ Super-Resolution Imaging

Principle and application of Next generation optical Microscopy by new 3D-SIM technical method transcended the current diffraction limit

既存光学顕微鏡(分解能)を超越した次世代スーパー光学顕微鏡技法(3D-SIM)とその応用例の紹介

～既存技法(共焦点・デコンボ技法等)では分離不能であった高精細 3D 局在解明へ向けた新たな光明～

Speaker: Peter Franklin
Regional Manager, Pacific Rim. Applied Precision, Inc.
SEKI TECHNOTRON Corp.

Date: Monday, August 3, 2009 16:00 ~ 17:30

Venue: Seminar Room (South) 4F Building A, RIKEN Center for Developmental Biology

The optical microscope is useful tool for observing cells and molecules labeled with fluorescent probes in biology field. But in conventional microscope systems, image resolution is limited by the diffraction-limit under the Abbe's theory and most of researchers believed to be NOT able to take images better than LSCM and Deconvolution method for nearly a century. However, recently, new generation optical microscopes have started to see beyond the theoretical Abbe limit of 200 nm.

Now, Applied Precision Inc in USA provides DeltaVision|OMX system, which solves two fundamental limitations that have frustrated scientists, spatial and temporal resolution. DeltaVision|OMX overcomes spatial resolution limits by using 3D-SIM true structured illumination technology that doubles the optical resolution of light microscope. Equally important, DeltaVision|OMX also overcomes speed limitations for cellular imaging by using novel electronics and optics.

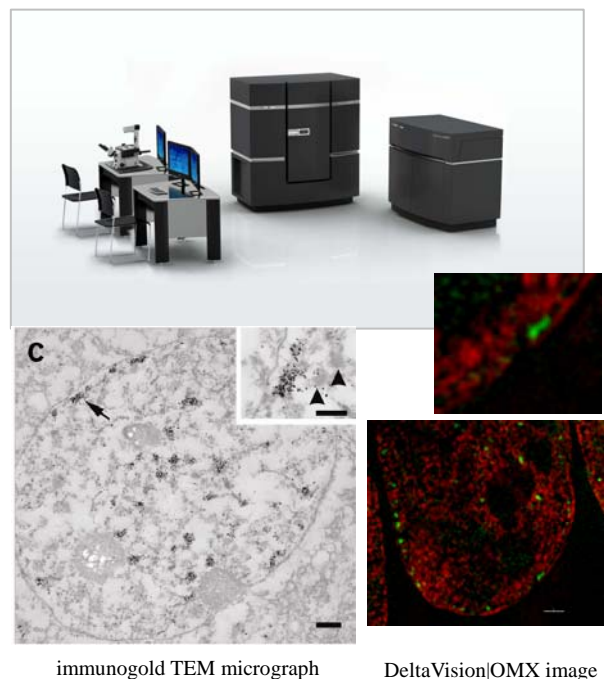
We would like to introduce principles and applications of this system, as well as the difference from other super resolution microscopy in this seminar. Please join this seminar to know the advancement of new generation microscopy!

Summary of this seminar:

- System configuration and advantage
- Principles of 3D-SIM
- Specific application
- Difference from other super resolution microscopy such as STED and advantage

OMX specification:

- Resolution (depend on the wavelength)
Maximum ~100 nm (lateral)
Maximum ~200 nm (axial)
- Acquisition method
3D-SIM (super resolution)
Fast acquisition
(maximum 64 f/s acquiring with simultaneous 4 EM-CCDs)



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