Institute of Molecular and Cell Biology

A*STAR

SEMINAR ANNOUNCEMENT

DATE: 20 March 2012, Tuesday
TIME / VENUE: 11:00AM @ Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis
SPEAKER: Prof. Senyon Choe
TITLE OF SEMINAR: **Facile NMR structure determination of human membrane proteins**



Prof. Senyon Choe
Structural Biology Laboratory, Salk Institute, USA

Although nearly half of today's major pharmaceutical drugs target human integral membrane proteins (hIMPs), only 22 hIMP structures are currently available in the Protein Data Bank. Inefficiencies in protein production have historically represented a primary bottleneck for hIMP characterization. Here, we describe a strategy for the rapid structure determination of hIMPs, utilizing solution NMR spectroscopy with systematically labeled proteins produced via cell-free expression. We report new backbone structures of 6 hIMPs, solved within only 18 months from a set of 15 initial targets. The described technology with its significant improvements in efficiency of the production and characterization of hIMPs should greatly accelerate not only structure elucidation but also detailed functional analyses for drug design and discovery. I propose to establish an international consortium of academia and industry to collaborate on studies of human membrane proteins and to facilitate realizing their scientific and industrial potentials.

Host: Prof. Robert Robinson

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