Institute of Molecular and Cell Biology

A*STAR

SEMINAR ANNOUNCEMENT

DATE: 19 December 2011, Monday
TIME / VENUE: 11:00AM @ IMCB Seminar Room 3-46, Level 3, Proteos, Biopolis
SPEAKER: Ms. Poh Hui Chia, *Post-doctoral candidate, Stanford University, USA*

Synapses are specialized junctions that allow for communication between neurons. Information flows directionally from the presynaptic terminal to the postsynaptic cell. At the presynaptic terminal, neurons assemble elaborate protein complexes to facilitate neurotransmitter release. How this complex synaptic machinery is built during development is still poorly understood. Using *C. elegans*, I have unraveled a sequence of events where transmembrane adhesion molecules define the location of new synapses and locally assemble F-actin. Next, actin-binding adaptors are recruited by the F-actin network and form a complex with presynaptic scaffolding proteins. Together, I have identified a role for the actin cytoskeleton during presynaptic development and characterize a molecular pathway that links synaptic partner recognition to synapse formation. This work provides a framework for understanding how diverse sets of extracellular cues may recruit and build stereotyped intracellular synaptic machinery that is crucial for proper neurotransmission.

Host: Prof. Stephen Cohen, Research Director, IMCB

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