NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

BIOLOGY COLLOQUIUM

Friday, 13 March 2015 | 4pm | DBS Conference Room 1

Hosted by A/P Ge Ruowen

Molecular regulation
of insulin secretion and diabetes

About the Speaker

Han Weiping received his PhD from Cornell University and did postdoctoral work at the University Of Pittsburgh and HHMI/UT Southwestern Medical Center in Dallas. In 2003, he was appointed Research Assistant Professor at UT Southwestern Medical Center. In 2005, he moved to Singapore to set up a research program at Singapore Bioimaging Consortium (SBIC). Currently he is Head of Laboratory of Metabolic Medicine (LMM) and Deputy Director of SBIC.

By **Han Weiping**

Head of Laboratory of Metabolic Medicine (LMM) and Deputy Director of Singapore Bioimaging Consortium (SIBC)

Neurotransmitters, neuropeptides and hormones are released through regulated exocytosis of synaptic vesicles (SVs) and large dense core vesicles (LDCVs), a process that is controlled by Ca2+. Synaptotagmins are a family of membrane proteins that share a common domain structure. Most synaptotagmins are expressed in brain and endocrine cells, and some of these synaptotagmins bind to phospholipids and Ca2+ at the levels that trigger regulated exocytosis of SVs and LDCVs. The cellular process of insulin secretion is well established, and numerous molecular players involved in insulin granule biogenesis, trafficking and exocytosis have been documented and analyzed. Although it is well known that incretins, such as GLP-1 can potentiate insulin secretion, its underlying molecular mechanisms are poorly defined. Here I will describe our research studies investigating the effects of depleting synaptotagmins on insulin secretion, and whether synaptotagmins are involved in the incretin potentiation of insulin secretion.

Artwork by Ann Nee, DBS, NUS