NUS National University of Singapore

Department of Biological Sciences
Faculty of Science

SEMINAR

Lunchtime Seminar and Journal Club

Fri, 20 Sept 2013 | 12.30pm | DBS Conference Room 1

Hosted by Dr Ganesh Anand



Professor Frank Sobott
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Protein complexes take flight

- from chaperones to ion channels

After a brief introduction into the field of native mass spectrometry and ion mobility analysis of protein complexes, we discuss how high-mass modified instrumentation can give powerful insights into the stoichiometry, subunit composition, size and shape of biomolecular particles.

We will show recent data on HFQ complexes which act as an RNA chaperone and are involved in the regulation of gene expression through facilitating post-transcriptional interactions between non-coding sRNAs and mRNA. The example of SMC proteins, which are crucial for Structural Maintenance of Chromosomes, illustrates the ability of ion mobility approaches to link information on complex assembly with the topology of the functional unit in heterogeneous systems.

Recently, we have also been studying ion channels in detergent micelles and have been able to show the gradual opening of the Mechanosensitive Channel of Large Conductance in response to the binding of a charged drug molecule inside the channel which mimics the pressure on the bulk membrane.

Artwork by Ann Nee, DBS, NUS