![Institute of Molecular and Cell Biology - A*STAR logo]

SEMINAR ANNOUNCEMENT

DATE: 28 February 2012, Tuesday
TIME / VENUE: 11:00AM @ Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis
SPEAKER: Dr. Làszlò Tora
TITLE OF SEMINAR: **Towards understanding the role of histone acetyl transferase complexes in chromatin remodeling and transcription regulation**

Dr. Làszlò Tora

Institut de Genetique et de Biologie Moleculaire et Cellulaire (IGBMC), INSERM, France

Gene expression is a tightly regulated process. Initiation of transcription by RNA polymerase II (Pol II) is believed to be the outcome of a number of sequential events beginning with the binding of specific activators to their cognate binding sites. This initial step will trigger the recruitment of coactivator complexes and general transcription factors at promoters to allow the loading of Pol II into the preinitiation complex to achieve transcription initiation. In this process, coactivators play multiple crucial roles through enzymatic as well as non-enzymatic functions. GCN5 and PCAF are mutually exclusive histone acetyl transferase (HAT) subunits of two functionally distinct, but related, multi-subunit coactivator complexes, the SAGA (Spt-Ada-Gcn5-Acetyltransferase) and the ATAC (Ada-Two-A-Containing) complexes. The human SAGA complex in addition to its HAT activity has also a histone H2Aub1 and H2Bub1 deubiquitination (DUB) activity. These coactivator complexes have been shown to differentially regulate both locus specific gene expression and global chromatin structure through their enzymatic activities (HAT, DUB). During my seminar, I will discuss how these human HAT- and DUB-containing coactivator chromatin remodelling complexes function and how they are targeted to different genomic loci. I will also show that ATAC functions at a set of enhancers that are not bound by the general HAT p300, revealing a class of enhancers not yet identified. These findings demonstrate important functional differences between distinct HAT coactivator complexes at the level of the genome and define novel roles for specific coactivator complexes in the regulation of different sets of enhancers.

Host: Dr. Ernesto Guccione