Graduate Schools
Infection Immunity and Cancer, UniGe & UniL: CUS
Biology & Medicine, CMU

Seminar in Microbiology

Monday, February 2, 2015

Salle de séminaire 7172, CMU

11:30 – 12:30

Juan Mata

Biochemistry Department
University of Cambridge, UK

A genome-wide view of translation

The laboratory of **Juan Mata** in Cambridge uses the fission yeast *Schizosaccharomyces pombe* to study RNA binding proteins. During their analysis they found in a sample of 31 proteins 38% that co-purified with mRNAs, despite that they were not RNA binding proteins, indicating that they associate with nascent proteins on ribosomes and promote cotranslational folding.

By analyzing several strains deleted for RNA-binding proteins, they identified 25 strains (e.g., deleted genes) that influence the RNA stability of several RNAs, ranging from 4 to 104, depending on the gene deleted. Using ribosome profiling during developmental process, they identified several non-coding RNAs and detected 1735 translated upstream open reading frames! This shows once more how important translational regulation and protein interactions are for gene expression and that a model system, such as *S. pombe*, is a valuable tool to study fundamental biological processes.

http://www.bioc.cam.ac.uk/people/uto/mata

References:

Hasan A, Cotobal C, Duncan C and Mata J (2014) Systematic analysis of the role of RNA-binding proteins in the regulation of RNA stability. PLoS Genet 10 (11): e1004684

Duncan C and Mata J (2014) The translational landscape of fission yeast meiosis and sporulation. Nat Mol Struct Biol doi:10.1038/nsmb.2843

Duncan C and Mata J (2014) Cotranslational protein-RNA associations predict protein-protein interactions. BMC Genomics 15: 298

Mata J (2013) Genome-wide mapping of polyadenylation sites in fission yeast reveals widespread alternative polyadenylation. RNA Biology 10 (8) 1-8

Duncan C and Mata J (2011) Widespread cotranslational assembly of protein complexes. PLoS Genet 7 (12): e1002398.

Contact: P. Linder & P. Viollier
Sandwiches will be offered after the seminar