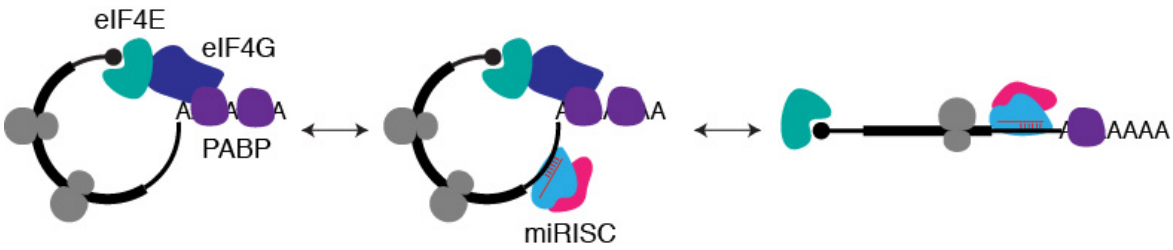
GUEST SPEAKER SEMINAR

Molecular Genetics
UNIVERSITY OF TORONTO

mRNP reorganization during microRNA-mediated repression



Although microRNAs are thought to impact nearly every mammalian biological process, their molecular mechanism remains controversial. Since all mRNAs are dressed with proteins to form mRNA-protein complexes (mRNPs), we reasoned that microRNAs might act by reorganizing target mRNPs. To test this hypothesis, we analyzed, on a transcriptome-wide scale, how the binding of core mRNP components (eIF4E, eIF4G and PABP) was affected by mammalian microRNA-mediated repression. Despite the transient nature of the repression intermediates, we found that microRNAs stimulated the reorganization of target mRNPs. Furthermore, although poly(A)-tail length has long been considered to be critical in post-transcriptional regulation, it was the binding of these core mRNP components, rather than poly(A)-tail length itself, that correlated with translational efficiency and mRNA stability. These results suggest that modulation of core mRNP components represents a key node in posttranscriptional gene regulation.

Dr. Olivia Rissland

The Hospital for Sick Children
Candidate for Faculty Appointment

Host: Dr. Barbara Funnell

Date: Friday October 10th, 2014
Time: 1PM
Place: Medical Sciences Building, Room 4279