Title:	Understanding synaptic function and RNA splicing using C. elegans as a model system
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Abstract:	Caenorhabditis elegans, a small nematode with its genome being sequenced, well- defined nervous system and pre determined cell fate has been serving the scientific community to study various cellular and biological processes. More the 60% of C. elegans genes have human counterparts, which makes it an excellent model system to study diverse biological processes such as neurobiology, aging, apoptosis, gene regulation and developmental biology. In my work I have used C. elegans to understand two different phenomena; synaptic functioning and RNA splicing. In first part of my talk, I will discuss characterization of the function of a claudin- like protein, HPO-30, and its role in maintaining the levamisole sensitive nicotinic acetylcholine receptors (LAChRs) at the neuromuscular junction (NMJ). Using pharmacological and electrophysiological approaches we establish that in hpo-30 mutants, the LAChR levels are compromised at the NMJ. HPO-30 localizes at the NMJ and shows genetic and physical interaction with the LAChRs. Finally, we show that HPO-30 functions through another cell adhesion molecule neuroligin (NLG-1) to maintain the postsynaptic receptor levels. The second part of my talk involves understanding the function of a ubiquitin like protein, Hub1 in C. elegans. In this work, we identify the interaction of CeHub1 with splicosomal protein CeSNU66. Further, using microarray analysis we assay for splicing specific function of Hub1 in C. elegans and establish that Hub1 function is quite conserved across species and plays an important role in mRNA splicing in C.elegans.
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