**Abstract**

Cell surface Ig superfamily proteins (IgSF) have been known to be involved in several aspects of neuron development and function. Here the focus is on Rig-3, an IgSF protein that regulates the [Acetylcholine receptor] ACR16 levels in the post synaptic neuron by interacting with Cam-1 via Wnt signaling pathway. Glr-1 (Glutamate Receptor-1) is highly expressed in head neurons and the signaling pathway affects locomotion, and response to stimulus in C.elegans. As Rig-3 functions via the Wnt signaling pathway, I intend to analyse various Wnt mutants in C.elegans and look for any difference in their phenotypes to find out the wnt which regulates the AChR levels on the post synaptic cell. As Rig-3 and Glr-1 are both present in the head neurons and are implicated in the regulation of synaptic plasticity, this work is focused to see if they may in some way interact to give more fine-tuned regulation levels. My objective of study is to work out their hierarchy of interaction if such interaction does exist by studying double mutants for rig-3 and glr-1, and by studying the over expression of Glr-1 in the background of rig-3 mutation.