

P010 Metabotropic Glutamate Receptors in *Caenorhabditis elegans*,
Models for Studying the Organization of Receptor Function.
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Metabotropic glutamate receptors (mGluRs) are G protein-coupled receptors. The *C.elegans* genome predicts three genes that encode mGluRs, these are *mgl-1*, *mgl-2* and Y4C6A.2a. In mammals mGluRs perform neuromodulatory roles underlying complex behaviours. However, little is known about the function of this class of receptor in *C.elegans*. We have cloned MGL-1 and sequence analysis reveals it is evolutionarily very similar to Group III mGluRs. It is selectively expressed in the *C.elegans* nervous system, in the pharynx, nerve ring and tail. The pharyngeal nervous system controls *C.elegans* feeding behaviour and we have identified that in the presence of different mGluR agonists pharyngeal pumping is inhibited. This effect is reduced in the *mgl-1* mutant, suggesting the mode of agonism is through MGL-1. The intracellular C-terminal of mGluRs is known to direct protein-protein interactions important for receptor function. In keeping with this we have identified three proteins that interact with the C-terminal of MGL-1 in the LexA yeast-two-hybrid system. One of these is the multi-PDZ domain protein MPZ-1, which is co-expressed with *mgl-1* in neurons of the nerve ring and pharynx. Subsequently we intend to utilise available *mpz-1* mutant strains to assess the functional relevance of the interaction between MPZ-1 and MGL-1.