

P016 An antagonistic role for two *C. elegans* NPY-like receptors, NPR-1 and NPR-2, in the regulation of *C. elegans* locomotion.
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In an RNAi study for 60 *C. elegans* GPCRs predicted to bind small molecule ligands we identified a subset of GPCRs that have a role in locomotion or egg-laying. The majority of these belong to a family of twelve NPY-like receptors. We are characterising gene deletion mutants for all twelve receptors. This has confirmed and extended the observations with RNAi. Currently we are investigating those receptors for which the gene knockouts indicate an important functional role. One of these is an NPY-like receptor, NPR2 (T05A1.1). NPR2 is widely expressed in the nervous system, including in the ventral nerve cord. A null mutation for *npr-2* results in animals with defective locomotion and resistance to aldicarb that is rescued by expression of wild-type *npr-2*. NPR1, is the most closely related receptor to NPR-2 and is also expressed in the motornervous system. The locomotion defect and aldicarb resistance in *npr-2* knockouts is suppressed by either a loss, or reduction, of function in signalling through NPR1. This indicates that the two closely related isoforms of NPY-like receptors act antagonistically in the regulation of locomotion.

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