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Title:	ROLE OF EXP-1 IN Caenorhabditis elegans EXPLORATORY BEHAVIOR
Authors:	Verma, Vandana (/jspui/browse?type=author&value=Verma%2C+Vandana)
Keywords:	Biology Caenorhabditis elegans Nervous system Thermal cycler- Worm lysis GABA receptor
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Abstract:	EXP-1 is an excitatory cation selective GABA (γ-aminobutyric acid) receptor. GABA receptors are members of the ligand-gated ion channel that mediate fast inhibitory neurotransmission in both vertebrates and invertebrates. When GABA, the neurotransmitter binds the receptor, it opens the anion selective channel (Cl- channel) which leads to hyperpolarisation and thereby inhibitory action on the postsynaptic cell. In adult vertebrate brain, GABA is majorly inhibitory. But there are reports where GABA functions an excitatory neurotransmitter. Although excitatory GABA receptor was not identified at molecular level until 2003 when exp-1 has identified through genetic screens for expulsion defective mutants in C.elegans and characterized as an excitatory cation selective receptor (Jorgensen et al., 2005). EXP-1 shares 21% identity with a human β2 subunit of the GABA receptor. Alignments with GABA receptors indicate residues that line the GABA binding pocket are conserved. In this work, we studied the locomotory behavior of exp-1 mutant worms. The locomotion of C.elegans consists of forward creep punctuated by spontaneous reversals. Reversals can be in response to an acute stimulus (like touch) or spontaneous. Spontaneous reversals can occur as a result of the integration of various factors related to the environment as well as the internal state of the worm. Therefore it can be a sensitive measure of behavioral state.
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