Title:	Probing the role of CREB homolog, CRH-1, in innate and learned behaviours in C. elegans
Authors:	Rose, Saloni (/jspui/browse?type=author&value=Rose%2C+Saloni)
Keywords:	Chemotaxis in C. elegans Behavioural assays Associative learning paradigm Localisation of AMPA
Issue Date:	7-Sep-2018
Publisher:	IISERM
Abstract:	Animals display innate behaviours that are genetically hardwired and can be performed in response to a cue. Although they are stereotypic, some innate be- haviours can be modified through experience. One such behaviour is chemotaxis towards an attractant isoamyl alcohol (IAA) in Caenorhabditis elegans. C. ele- gans is a soil dwelling nematode that lives on microbes for its food source. They move forward in a sinusoidal wave pattern and their forward movement is punc- tuated by frequent stops and events of backward movement called reversals. The main strategy is to reduce the frequency of reversals when the environment be- comes more favourable. crh-1 (homolog of mammalian CREB1) null mutants have severely compromised ability to change the reversal frequency in response to the gradient of attractant IAA. This defect is also manifested as a learning de- fect in crh-1 null worms. Our experiments employ a learning paradigm where the IAA was paired to heat and show that CRH-1c and CRH-1e (2 out of 6 CRH-1 isoforms) are required for innate behaviours as well as learned. Consistent with the behavioural data, the spatial localisation of ionotropic glutamate receptor sub- unit GLR-1 was found to be defective in CRH-1c and CRH-1e deletion lines. These experiments provide important insight into mechanistic understanding of CREB1/CRH-1 transcription factor in mediating innate and learned behaviours.
URI:	http://hdl.handle.net/123456789/1024 (http://hdl.handle.net/123456789/1024)
Appears in Collections:	MS-13 (/jspui/handle/123456789/914)

Files in This Item:

File	Description	Size	Format

MS13019.pdf (/jspui/bitstream/123456789/1024/3/MS13019.pdf)	2.69 MB	Adobe PDF	View/Open (/jspui/bitstream/123456789/1024/3/

Show full item record (/jspui/handle/123456789/1024?mode=full)

(/jspui/handle/123456789/1024/statistics)