

Evolutionary context of feeding strategies and underlying nervous structures of two invertebrate phyla

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Earlier it was characterized in detail stomatogastric ganglia that project to three jaws of medicinal leech that is representative of invertebrate phylum Annelida [1]. New morphological and physiological features of modulatory neurons were also described. Neuronal basis of feeding behavior of representatives of other invertebrate phylum Mollusca have been the subject of neuroscientific studies for a long time.

The aim of the current study was to use comparative approach for understanding similarities and differences between neuronal organization underlying feeding behavior in the representatives of these two separate phyla. Two model animals with different feeding strategies of phylum Mollusca one of them herbivorous *Lymanea stagnalis* and another carnivorous *Clione limacina* were chosen. There are difference between structures of nervous system that control feeding behavior of Medicinal leech and representatives of phylum Mollusca. At the same time it was found big similarity in morphology and neurotransmitter content of modulatory neurons that control feeding activity. Resemblance of modulatory neurons of feeding neuronal centers of the representatives of two separate phyla points to the conservation of neuromodulatory systems in evolution.

Literature:

[1] Mesce KA, Alania MA, et al., 2018, J of Exp Biol (2018) 221, jeb17568