

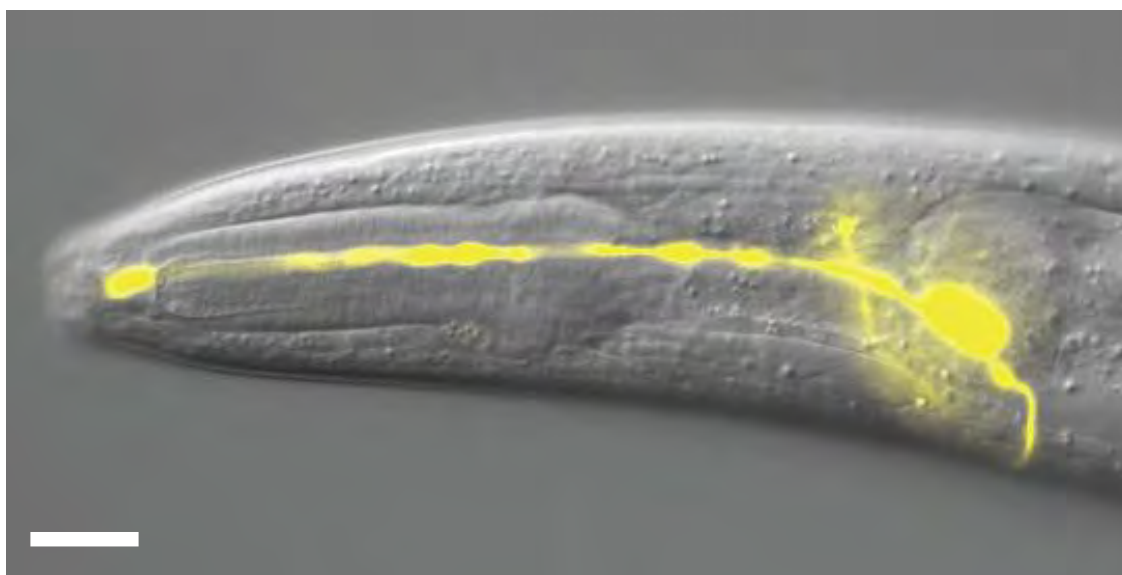
[FEATURED]

Yes, that's the taste! - Neural mechanisms of taste memory of the soil nematode -

26 July 2013

The group led by the research director Yuichi Iino, professor at the University of Tokyo has found that the soil nematode *Caenorhabditis elegans* memorizes the environmental salt concentration during cultivation and exhibits a strong behavioral preference for this concentration. Input to a single taste neuron was required and sufficient for regulating the whole behavior. The information of cultivation salt-concentration was transmitted to the postsynaptic interneurons only in the salt concentration range lower than the cultivation concentration to drive migration to higher salt concentrations.

The paper was published in the online version of [Nature Communications on July 26, 2013](#). This is a major advance in understanding a mechanism for adjusting the orientation behavior based on the memory of sensory stimulus using a simple neural circuit.



*Related Photo: Gustatory nerve on the head of soil nematode (yellow) . A neurite extends from the soma (right side, an oval shape) to the mouth (left side). Bar: 10 μ m

[Journal Information]

Hirofumi Kunitomo, Hirofumi Sato, Ryo Iwata, Yohsuke Satoh, Hayao Ohno, Koji Yamada & Yuichi Iino, "Concentration memory-dependent synaptic plasticity of a taste circuit regulates salt concentration chemotaxis in *Caenorhabditis elegans*", Nature Communications, 2013

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Prof. IINO leads the CREST project titled as "Elucidation of operating characteristics of the neural circuit based on observational data of the whole nervous system" (Project duration: 1 Oct, 2012 - 31 Mar 2018).