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Chemosensory dysfunction in alcohol-related disorders
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Whereas taste and smell deficits serve as reliable biomarkers in numerous neurological and psychiatric states, there is a paucity of measurements of chemosensory abilities in alcohol dependence (AD) and Korsakoff Syndrome (KS), i.e., the loss of short term memory caused by long-term heavy alcohol consumption. Brion et al therefore investigated chemosensory function in AD and KS subjects and a control group by means of the ‘Sniffin Sticks’ battery and ‘Taste Stripes’ task. They found that the AD group showed impairments in odor discrimination and the KS group in odor identification and discrimination. Gustatory deficits were present in both subject groups. Thus, the data indicate a global reduction in chemosensory function in the affected subjects. The worse performance in odor identification of KS subjects relative to AD subjects suggests that the continuous severity of cognitive deficits during the progression through the disease states can be generalized with decreasing chemosensory abilities. The findings propose that the decline in chemosensory function could be a useful clinical marker for the AD-KS transition.

The insect chemoreceptor superfamily is ancient in animals
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Insect chemoreceptors fall into two families. Whereas all known arthropod genomes contain members of the gustatory receptor (GR) family, the odorant receptor genes which originated from a GR lineage are confined to insects. Robertson now reports on the presence GR-like genes in the genomes of diverse animals including the single existent Placozoan species, a sea anemone, a coral, a polychaete, a leech, several nematodes, 3 molluscs, a sea urchin, and a sea acorn. The GR-like sequences in these species match well to those of various arthropod GRs. Moreover, most of them encode seven putative membrane spanning domains with a cytoplasmic amino-terminal end as well as a conserved sequence motif shared with proven GR members. These properties validate the membership of the GR-like genes with the GR family. Whereas some of the above animals contain multiple GR-like lineages, they are entirely absent from other animal lineages such as vertebrates. The absence of GR-like genes in a ctenophore and demosponge as well as in two choanoflagellate species makes it uncertain if the superfamily of GR genes originated before or during animal evolution.

Immunohistochemical Analysis of Human Vallate Taste Buds
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Whereas we have a comparatively good knowledge about the structural, morphological and molecular properties of murine taste buds, relatively little is known about human taste buds. Tizzano et al now present an immunohistochemical analysis of human vallate taste buds in postmortem tissue. They observed that antisera against phospholipase C-beta 2, alpha-gustducin and the common subunit of the sweet and umami receptor, T1R3, stain elongated cells consistent with Type II cells in mice. Antisera directed against three different markers for murine Type III cells do not stain human vallate taste cells or stain only very few cells. Similar immunohistochemical experiments finally revealed that human vallate papillae have a network of innervation comparable to that of rodents. Together, the data propose that human and rodent vallate taste buds have in common a number of features but deviate in certain molecular properties of Type III cells.

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