Molecular Mechanisms Underlying Odorant Perception

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Abstract

The detection of chemicals in the external environment so called “chemosensation” is essential for the survival in many animals. Odorants — volatile ‘smellable’ chemicals — and pheromones — species and gender specific chemicals — are two major olfactory cues by which information about food and suitable mating partners is transmitted. Olfactory receptors (ORs), which comprise the largest G protein coupled receptor family, play a pivotal role in recognizing a variety of odorants and pheromones in the olfactory system.

Activation of ORs by an odorant results in formation of a receptor code for the odorant at the level of the peripheral olfactory neurons, and leads to formation of odor representation in the brain.

Key words: odorant, olfactory receptor, olfactory neurons, pheromone.