Targeting olfaction

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Chemoreception in the mouse olfactory system occurs primarily at two chemosensory epithelia: the main olfactory epithelium and the vomeronasal epithelium. Their sensory neurons are olfactory sensory neurons and vomeronasal sensory neurons, respectively. In the main olfactory epithelium, the interaction with odorous ligands (smells) is mediated by the largest gene family in the mouse genome: 1100 odorant receptor genes. Each mature olfactory sensory neuron is thought to express just one odorant receptor gene. Axons of olfactory sensory neurons that express the same odorant receptor coalesce into the same structures in the olfactory bulb called glomeruli. We are interested in the mechanisms that enable the expression of one odorant receptor per olfactory sensory neuron, and that govern the coalescence of axons into glomeruli.