

References.

- Augustine, G.J., Santamaria, F., and Tanaka, K. (2003). Local calcium signalling in neurons. *Neuron* 40, 331-346.
- Ayer, R. and Carlson, J.R. (1992). Olfactory physiology in the *Drosophila* antenna and maxillary palp: *acj6* distinguishes two classes of odorant pathways. *J.Neurobiol.* 23, 965-982.
- Beck, C.D.O., Schroeder, B., and Davis, R.L. (2000). Learning performance of normal and mutant *Drosophila* after repeated conditioning trials with discrete stimuli. *J.Neurosci.* 20, 2944-2953.
- Berridge, M.J. (1998). Neuronal calcium signalling. *Neuron* 21, 13-26.
- Bowen, M.F. (1991). The sensory physiology of host-seeking behavior in mosquitoes. *Annu.Rev.Entomol.* 36, 139-158.
- Brand, A.H. and Perrimon, N. (1993). Targeted gene expression as a means of altering cell fates and generating dominant phenotypes. *Development* 118, 401-415.
- Christensen, T.A. and Hildebrand, J.G. (2002). Pheromonal and host-odor processing in the insect antennal lobe: how different? *Curr.Opin.Neurobiol.* 12, 393-399.
- Clyne, P.J., Warr, C.G., Freeman, M.R., Lessing, D., Kim, J., and Carlson, J.R. (1999). A novel family of divergent seven-transmembrane proteins: candidate odorant receptors in *Drosophila*. *Neuron* 22, 327-338.
- Clyne, P.J., Warr, C.G., and Carlson, J.R. (2000). Candidate taste receptors in *Drosophila*. *Science* 287, 1830-1834.
- Coates, E.L. and Ballam, G.O. (1990). Olfactory receptor response to CO₂ in bullfrogs. *Am.J.Physiol.* 258, R12007-R1212
- de Bruyne, M., Clyne, P.J., and Carlson, J.R. (1999). Odor coding in a model olfactory organ: the *Drosophila* maxillary palp. *J.Neurosci.* 19, 4520-4532.
- de Bruyne, M., Foster, K., and Carlson, J.R. (2001). Odor coding in the *Drosophila* antenna. *Neuron* 30, 537-552.

- Dobritsa, A., Van der Goes van Naters, W.M., Warr, C.G., Steinbrecht, R.A., and Carlson, J.R. (2003). Integrating the molecular and cellular basis of odor coding in the *Drosophila* antenna. *Neuron* 37, 827-841.
- Duchamp-Viret, P., Chaput, M.A., and Duchamp, A. (1999). Odor response properties of rat olfactory receptor neurons. *Science* 284, 2171-2174.
- Dunipace, L., Meister, S., McNealy, C., and Amrein, H. (2001). Spatially restricted expression of candidate taste receptors in the *Drosophila* gustatory system. *Curr.Biol.* 11, 822-835.
- Elmore, T., Ignell, R., Carlson, J.R., and Smith, D.P. (2003). Targeted mutation of a *Drosophila* odor receptor defines receptor requirement in a novel class of sensillum. *J.Neurosci.* 23, 9906-9912.
- Fiala, A., Diegelmann, S., Eisermann, B., Sachse, S., Devaud, J.-M., Buchner, E., and Galizia, C.G. (2 A.D.). Genetically expressed cameleon in *Drosophila melanogaster* is used to visualize olfactory information in projection neurons. *Curr.Biol.* 12, 1877-1884.
- Friedrich, R.W. and Korschning, S.I. (1998). Chemotopic, combinatorial, and noncombinatorial odorant representations in the olfactory bulb revealed using a voltage-sensitive axon tracer. *J.Neurosci.* 18, 9977-9988.
- Galizia, C.G. and Menzel, R. (2000). Odour perception in honeybees: coding information in glomerular patterns. *Curr.Opin.Neurobiol.* 10, 504-510.
- Grant, A.J., Wigton, B.E., Aghajanian, J.G., and O'Connell, R.J. (1995). Electrophysiological responses of receptor neurons in mosquito maxillary palp sensilla to carbon dioxide. *J.Comp.Physiol.A Sens.Neural Behav.Physiol.* 177, 389-396.
- Grant, A.J. and O'Connell, R.J. (1996). Electrophysiological responses from receptor neurons in mosquito maxillary palp sensilla. In *Olfaction in mosquito-host interaction*, Ciba found.symp.200. G.R. Bock and G. Cardew, eds. (Chichester: John Wiley & Sons), pp. 233-253.
- Hallem, E.A., Ho, M.G., and Carlson, J.R. (2004). The molecular basis of odor coding in the *Drosophila* antenna. *Cell* 117, 965-979.
- Hansson, B.S. (1995). Olfaction in lepidoptera. *Experientia* 51, 1003-1027.

- Heimbeck, G., Bugnon, V., Gendre, N., Keller, A., and Stocker, R.F. (2001). A central neural circuit for experience-independent olfactory and courtship behavior in *Drosophila melanogaster*. Proc.Natl.Acad.Sci.USA 98, 15336-15341.
- Hildebrand, J.G. and Shepherd, G.M. (1997). Mechanisms of olfactory discrimination: converging evidence for common principles across phyla. Annu.Rev.Neurosci. 20, 659-631.
- Hill, C.A., Fox, A.N., Pitts, R.J., Kent, L.B., Tan, P.L., Chrystal, M.A., Cravchik, A., Collins, F.H., Robertson, H.M., and Zwiebel, L.J. (2002). G protein-coupled receptors in *Anopheles gambiae*. Science 298, 176-178.
- Joerges, J., Küttner, A., Galizia, C.G., and Menzel, R. (1997). Representations of odours and odour mixtures visualized in the honeybee brain. Nature 387, 285-288.
- Kaissling, K.-E. (1987). R.H. Wright lectures on insect olfaction (Burnaby, Canada: Simon Fraser University).
- Kent, K.S. and Hildebrand, J.G. (1986). An accessory olfactory pathway in Lepidoptera:the labial pit organ and its central projections in *Manduca sexta* and certain other sphinx and silk moths. Cell Tissue Res. 245, 237-245.
- Korschning, S.I. (2001). Odor maps in the brain: spatial aspects of odor representation in sensory surface and olfactory bulb. Cell Mol.Life Sci. 58, 520-530.
- Lucas, P. and Shimahara, T. (2002). Voltage- and calcium-activated currents in cultured olfactory receptor neurons of male *Mamestra brassicae* (Lepidoptera). Chem.Senses 27, 599-610.
- Lyall, V., Alam, R.I., Phan, D.Q., Ereso, G.L., Phan, T.-H.T., Malik, S.A., Montrose, M.H., Chu, S., Heck, G.L., Feldman, G.M., and DeSimone, J.A. (2001). Decrease in rat taste receptor cell intracellular pH is the proximate stimulus in sour taste transduction. Am.J.Physiol.Cell Physiol. 281, C1005-C1013
- Malnic, B., Hirono, J., Sato, T., and Buck, L.B. (1999). Combinatorial receptor codes for odors. Cell 96, 713-723.

- Milsom, W.K. (2002). Phylogeny of CO₂/H⁺ chemoreception in vertebrates. *Respir.Physiol.Neurobiol.* 131, 29-41.
- Miyawaki, A., Griesbeck, O., Heim, R., and Tsien, R. (1999). Dynamic and quantitative Ca²⁺ measurements using improved cameleons. *Proc.Natl.Acad.Sci.USA* 96, 2135-2140.
- Mombaerts, P., Wang, F., Dulac, C., Chao, S.K., Nemes, A., Mendelsohn, M., Edmondson, J., and Axel, R. (1996). Visualizing an olfactory sensory map. *Cell* 87, 675-686.
- Ng, M., Roorda, R.D., Lima, S.Q., Zemelman, B.V., Morcillo, P., and Miesenböck, G. (2002). Transmission of olfactory information between three populations of neurons in the antennal lobe of the fly. *Neuron* 36, 463-474.
- Robertson, H.M., Warr, C.G., and Carlson, J.R. (2003). Molecular evolution of the insect chemoreceptor gene superfamily in *Drosophila melanogaster*. *Proc.Natl.Acad.Sci.USA* 100, 14537-14542.
- Rubin, B.D. and Katz, L.C. (1999). Optical imaging of odorant representations in the mammalian olfactory bulb. *Neuron* 23, 499-511.
- Schwaerzel, M., Monastirioti, M., Scholz, H., Friggi-Grelin, F., Birman, S., and Heisenberg, M. (2003). Dopamine and octopamine differentiate between aversive and appetitive olfactory memories in *Drosophila*. *J.Neurosci.* 23, 10495-10502.
- Scott, K., Brady, R.Jr., Cravchik, A., Morozov, P., Rzhetsky, A., Zuker, C., and Axel, R. (2001). A chemosensory gene family encoding candidate gustatory and olfactory receptors in *Drosophila*. *Cell* 104, 661-673.
- Shanbhag, S.R., Müller, B., and Steinbrecht, R.A. (1999). Atlas of olfactory organs of *Drosophila melanogaster* 1. Types, external organization, innervation and distribution of olfactory sensilla. *Int.J.Insect Morphol.Embryol.* 28, 377-397.
- Shanbhag, S.R., Müller, B., and Steinbrecht, R.A. (2000). Atlas of olfactory organs of *Drosophila melanogaster* 2. Internal organization and cellular architecture of olfactory sensilla. *Arthropod Struct.Dev.* 29, 211-229.
- Shusterman, D. (2002). Individual factors in nasal chemesthesia. *Chem.Senses* 27, 551-564.

Stange, G. (1996). Sensory and behavioural responses of terrestrial invertebrates to biogenic carbon dioxide gradients. In Advances in bioclimatology, vol 4. G. Stanhill, ed. (Berlin: Springer), pp. 223-253.

Stocker, R.F. (1994). The organization of the chemosensory system in *Drosophila melanogaster*: a review. Cell Tissue Res. 275, 3-26.

Störtkuhl, K.F. and Kettler, R. (2001). Functional analysis of an olfactory receptor in *Drosophila melanogaster*. Proc.Natl.Acad.Sci.USA 98, 9381-9385.

Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A., and Axel, R. (1999). A spatial map of the olfactory receptor expression in the *Drosophila* antenna. Cell 96, 725-736.

Vosshall, L.B., Wong, A.M., and Axel, R. (2000). An olfactory sensory map in the fly brain. Cell 102, 147-159

Wang, J.W., Wong, A.M., Flores, J., Vosshall, L.B., and Axel, R. (2003). Two-photon calcium imaging reveals an odor-evoked map of activity in the fly brain. Cell 112, 271-282.

Wetzel, C.H., Behrendt, H.-J., Gisselmannn, G., Störtkuhl, K.F., Hovemann, B.T., and Hatt, H. (2001). Functional expression and characterization of a *Drosophila* odorant receptor in a heterologous cell system. Proc.Natl.Acad.Sci.USA 98, 9377-9380.

Zufall, F. and Leinders-Zufall, T. (2000). The cellular and molecular basis of odor adaptation. Chem.Senses 25, 473-481.