

**ODOR PROCESSING IN THE
HONEYBEE
ANTENNAL LOBE**

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This dissertation is based on the following manuscripts:

- I. Role of inhibition for temporal and spatial odor representation in olfactory output neurons: a calcium imaging study
by S. Sachse & C.G. Galizia (2002):
Journal of Neurophysiology: 87, 1106-1117.
- II. Histamine acts as an inhibitory transmitter in the honeybee antennal lobe
by S. Sachse, P. Peele, A.F. Silbering, M. Weidert & C.G. Galizia:
Submitted to *The Journal of Comparative Neurology*.
- III. Representation of binary odor mixtures in the output neurons of the honeybee antennal lobe reveals odor-specific interglomerular computation
by S. Sachse & C.G. Galizia:
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- IV. Intensity-invariance of odor quality is optimized by the antennal lobe network of the honeybee
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The contributions of the different authors were as follows:

- I. I wrote the manuscript, performed all experimental studies and data analyses and discussed it with C.G. Galizia.
- II. I wrote the manuscript and produced all graphs. Calcium measurements of the compound signals were done by P. Peele and A.F. Silbering, measurements of the projection neurons were performed by M. Weidert and me. Data analyses were done by P. Peele and me.
- III. I wrote the manuscript, performed all experimental studies and data analyses and discussed it with C.G. Galizia.
- IV. I wrote the manuscript, performed all experimental studies and data analyses and discussed it with C.G. Galizia.

Additional contributions by persons other than the authors are described in the Acknowledgments section of each chapter.

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