

## Prof. Dr. Thomas Kuner



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07.10.1965, Heilbronn

### SCIENTIFIC VITA

1988-1998 Medical School (University of Heidelberg)  
1992-1997 Thesis work with Peter Seeburg at the ZMBH  
1998-2000 Post-doctoral training with George Augustine at Duke University  
2000-2006 Group Leader at the department of Bert Sakmann, MPI for med. Res.  
2003 Habilitation (Physiology, University of Heidelberg)  
2007-now: Professor, Institute for Anatomy and Cell Biology

### COORDINATING FUNCTIONS

2002-2005 Speaker of the 'WIN-Kolleg', Heidelberg Academy of Sciences

### CURRENTLY FUNDED PROJECTS

DFG: FOR577, GK1188, FOR643, EU FP6 Integrated Project (EUSynapse), German-Israeli-Foundation (GIF)

Currently supervision of 1 diploma thesis, 7 doctoral theses

### FIELDS OF INTEREST

Structure and function of the nervous system on different levels of complexity, synapses, synaptic transmission, molecular mechanisms of neurotransmitter release, from molecules to behavior, chloride signalling in neurons, odor discrimination.

### PUBLICATIONS (10 selected publications since 2000)

Kuner, T. and Augustine, G. J. (2000). *A genetically encoded ratiometric indicator for chloride: capturing chloride transients in hippocampal neurons*. *Neuron* 27, 447-459.

Kuner, T., Beck, C., Sakmann, B., Seeburg, P. H. (2001). *Channel-lining residues of the AMPA receptor M2 segment: structural environment of the Q/R site and identification of the selectivity filter*. J. Neuroscience 21:4162-4172.

Wimmer, V. C., Nevian, T., and Kuner, T. (2004). *Targeted in vivo expression of proteins in the calyx of Held*. Pflugers Archiv/European Journal of Physiology 449, 319-333.

Abraham, N.M., Spors, H., Carleton, A., Margrie, T., Kuner, T., Schaefer, A.T. (2004). *Maintaining accuracy at the expense of speed: stimulus similarity defines odor discrimination time in mice*. Neuron 44, 865-876.

Haverkamp, S., Wässle, H., Duebel, J., Kuner, T., Augustine, G.J., Feng, G., Euler, T. (2005). *The primordial blue cone color system of the mouse retina*. J. Neurosci 25, 5438-5445.

Dübel, J., Haverkamp, S., Schleich, W., Augustine, G.J., Feng, G., Kuner, T., Euler, T. (2006). *Two-photon imaging reveals somato-dendritic chloride gradient in retinal ON-type bipolar cells expressing the biosensor Clomeleon*. Neuron 49, 81-49.

Wimmer, V.C., Horstmann, H., Groh, A., Kuner, T. (2006). *Donut-like topology of synaptic vesicles with a central cluster of mitochondria wrapped into membrane protrusions: a novel structure-function module in the adult calyx of Held*. J Neurosci 26, 109-116.

Pond, B.B., Berglund, K., Kuner, T., Feng, G., Augustine, G.J., Schwartz-Bloom, R.D. (2006). *The chloride transporter Na(+)-K(+)-Cl- cotransporter isoform-1 contributes to intracellular chloride increases after in vitro ischemia*. J Neurosci 26:1396-1406.

Tappe, A., Agarwal, N., Katona, I., Rubino, T., Swiercz, J., Mackie, K., Monyer, H., Whistler, J., Kuner, T., Kuner, R. (2007). *A molecular basis of analgesic tolerance to cannabinoids*. J Neurosci., 4165-4177.

Krieger, P., Kuner, T., Sakmann, B. (2007). *Synaptic connections between layer 5B pyramidal neurons in mouse somatosensory cortex are independent of apical dendrite bundling*. J. Neurosci., in press.