NeuroCure
Towards a better outcome of neurological disorders

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(* 1968)

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Curriculum vitae

since 2005	W3 Professorship for Cellular and Molecular Neurobiology at the Charité – Universitätsmedizin Berlin
2002 - 2005	W1 Assistant Professor for Neurobiology at the Charité
1999 - 2002	Postdoctoral fellow at University of California, San Francisco (Advisor: Prof. R. Nicoll)
1997 - 1999	Postdoctoral fellow at the Department of Neurophysiology, Charité (Advisor: Prof. U. Heinemann)
1992 - 1997	PhD thesis, Department of Neurophysiology at the University of Cologne and the Charité
1994 - 1997	Studies in medicine, Charité
1990 - 1994	Studies in medicine, University of Cologne

Research fields

Our group is active in the field of cellular and molecular neurobiology with the following major areas:

- Cellular and molecular mechanisms of synaptic plasticity
- Mechanisms and function of short-term and long-term plasticity at the hippocampal mossy fiber synapse
- Modulation and development of synaptic transmission, plasticity and neuronal networks
- Homeostatic plasticity, hyperexcitability, epilepsy
- ‘Synaptopathy’ in neurological-psychiatric disorders such as epilepsy, Alzheimer’s disease, mental retardation, autism

Activities in the scientific community, honors, awards

2005	Bernard Katz Award (Eilat, Israel), Bert Sakmann and Alexander von Humboldt Foundation
2005	Schilling Award, German Neuroscience Society
2004	Primo loco position for a Professorship in Neuroscience at the International University Bremen (IUB), declined
2004	Appointed to the Otto Loewi Center for Cellular and Molecular Neurobiology, Israel
2004	Appointed to the Young Academy (Junge Akademie), the Berlin-Brandenburg Academy of Sciences and Humanities (Berlin-Brandenburgische Akademie der Wissenschaften - BBAW) and the German Academy of Natural Scientists Leopoldina
2003/2004	Teaching Award, Graduate Program Medical Neurosciences, Charité
2002	Junior Research Group (Emmy Noether Program)
1999	Research Fellowship (DFG)
1998	Humboldt Award for Best Thesis, Humboldt-Universität zu Berlin

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Selected publications

Plath N, Ohana O, Dammermann B, Errington ML, Schmitz D, Gross C, Mao X, Engelsberg A, Mahlke C, Welzl H, Kobalz U, Stawrakakis A, Fernandez E, Waltereit R, Bick-Sander A, Therstappen E, Cooke SF, Blanquet V, Wurst W, Salmen B, Bosl MR, Lipp HP, Grant SG, Bliss TV, Wolfer DP, Kuhl D (2006) Arc/Arg3.1 is essential for the consolidation of synaptic plasticity and memories. Neuron 52(3):437-44

Schuchmann S*, Schmitz D*, Rivera C, Vanhatalo S, Salmen B, Mackie K, Sipila ST, Voipio J, Kaila K (2006) Experimental febrile seizures are precipitated by a hyperthermia-induced respiratory alkalosis. Nat Med 12(7):817-23 *equal contribution

Nicoll RA, Schmitz D (2005) Synaptic plasticity at hippocampal mossy fibre synapses. Nat Rev Neurosci 6(11):863-76

Breustedt J, Vogt KE, Miller RJ, Schmitz D (2003) α1E-containing Ca2+-channels are involved in synaptic plasticity. Proc Natl Acad Sci USA 100(21):12450-5

Schmitz D, Mellor J, Breustedt J, Nicoll RA (2003) Presynaptic kainate receptors impart an associative property to hippocampal mossy fiber long-term potentiation. Nat Neurosci 6:1058-66

Mellor J, Nicoll RA, Schmitz D (2002) Presynaptic Ih channels mediate hippocampal mossy fiber long term potentiation. Science 295:143-7

Schmitz D, Schuchmann S, Fisahn A, Draguhn A, Buhl EH, Petrasch-Parwez R, Dermietzel R, Heinemann U, Traub RD (2002) Axo-axonal coupling: a novel mechanism for ultrafast neuronal communication. Neuron 31:831-40

Schmitz D, Mellor J, Nicoll RA (2001) Presynaptic kainate receptor mediation of frequency facilitation at hippocampal mossy fiber synapses. Science 291:1972-6

Schmitz D, Frerking M, Nicoll RA (2000) Synaptic activation of presynaptic kainate receptors on hippocampal mossy fiber synapses. Neuron 27:327-38

Draguhn A, Traub RD, Schmitz D, Jefferys JGR (1998) Electrical coupling underlies high-frequency oscillations in the hippocampus in vitro. Nature 394:189-92