

## Prof. Dr. Hilmar Bading



03/11/1958, Berlin

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## CURRICULUM VITAE

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| 2001      | Professor (C4) of Neurobiology, Director Neurobiology Institute, Interdisciplinary Center for Neurosciences (IZN), University of Heidelberg      |
| 1993-2001 | Group Leader at the MRC Laboratory of Molecular Biology, Cambridge, England  |
| 1989-1992 | Harvard Medical School, Boston, USA, post-doctoral research in the Department of Microbiology and Molecular Genetics, Prof. Michael E. Greenberg |
| 1985-1989 | Max Planck Institut für molekulare Genetik, Berlin, post-doctoral research with Prof. Karin Mölling  |
| 1984      | MD (Dr. med.)  |
| 1981-1984 | Max Planck Institut für medizinische Forschung, Heidelberg (Prof. Wilhelm Hasselbach)  |
| 1978-1984 | University of Heidelberg (Humanmedizin)  |

## HONORS

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| 2001 | Wolfgang-Paul-Prize 2001 of the Alexander von Humboldt-Foundation |
| 2000 | Member of the <i>Faculty of 1000</i>                              |

## FIELDS OF INTEREST

Neuronal signaling, nuclear calcium, gene regulation, neuronal plasticity, activity-dependent survival.

## CURRENTLY FUNDED PROJECTS

DFG-funded project (Ba 1007/2-1); EU-funded Network of Excellence; EU-funded project GRIPANNT; SFB 488, project D07; SFB 636; Alexander von Humboldt-Foundation (Wolfgang Paul-Prize).

## **PUBLICATIONS (10 most important papers):**

Zhang, S.-J., Steijaert, M.N., Lau, D., Schütz, G., Delucinge-Vivier, C., Descombes, P., and Bading, H. (2007) Decoding NMDA receptor signaling: identification of genomic programs specifying neuronal survival and death. **Neuron** 53, 549-562.

Arnold, F., Hofmann, F., Bengtson, P., Wittmann, M., Vanhoutte, P., and Bading, H. (2005) Microelectrode array recordings of cultured hippocampal networks reveal a simple model for transcription and protein synthesis-dependent plasticity. **J Physiol.** 564 (Pt 1), 3-19.

Hardingham, G.E, Fukunaga, Y., and Bading, H. (2002) Extrasynaptic NMDARs oppose synaptic NMDARs by triggering CREB shut-off and death pathways. **Nature Neuroscience** 5, 405-415.

Hardingham, G.E, Arnold, F.J.L., and Bading, H. (2001) Nuclear calcium signaling controls CREB-mediated gene expression triggered by synaptic activity. **Nature Neuroscience** 4, 261-267.

Hardingham, G.E, Arnold, F.J.L., and Bading, H. (2001) A calcium microdomain near NMDA receptors: on-switch for ERK-dependent synapse-to-nucleus communication. **Nature Neuroscience** 4, 565-566.

Hardingham, G.E, Chawla, S., Cruzalegui, F.H., and Bading, H. (1999). Control of recruitment and transcription-activating function of CBP determines gene regulation by NMDA receptors and L-type calcium channels. **Neuron** 22, 789-798.

Chawla, S., Hardingham, G.E, Quinn, D.R., and Bading, H. (1998). CBP: a signal-regulated transcriptional coactivator controlled by nuclear calcium and CaM kinase IV. **Science** 281, 1505-1509.

Hardingham, G.E., Chawla, S., Johnson, C.M., and Bading, H. (1997). Distinct functions of nuclear and cytoplasmic calcium in the control of gene expression. **Nature** 385, 260-265.

Bading, H., Ginty, D.D., and Greenberg, M.E. (1993). Regulation of gene expression in hippocampal neurons by distinct calcium signaling pathways. **Science** 260, 181-186.

Bading, H. and Greenberg, M.E. (1991). Stimulation of protein tyrosine phosphorylation by NMDA receptor activation. **Science** 253, 912-914.

## EXPERIENCE IN THE SUPERVISION OF DOCTORAL CANDIDATES

Since 2006: Member of the M.D. / Ph.D. Committee at the faculties of Biosciences and Medicine at the University of Heidelberg.

Since 1998: Supervision of a total 14 completed doctoral theses.

Ongoing supervision: 8 doctoral theses, 2 habilitation theses.

## SUPERVISED DISSERTATIONS (last 5 years)

Nidhi Gakhar, PhD (2006) Regulation of neuronal differentiation by activity-induced calcium influx in striatal neural precursors. University of Heidelberg

Current occupation: Postdoc, Germany

Jing Chen, PhD (2006) Cerebellar granule cell-specific deletion of the AMPA receptor GluR-D gene. University of Heidelberg

Current occupation: Medical Doctor, China

Malte Wittmann, PhD (2006) Synaptic and extrasynaptic NMDA receptors in hippocampal neurons: regulation of nuclear shape and cell fate. University of Heidelberg

Current occupation: Postdoc, Sweden

Bettina Hartmann, PhD (2006) Molekulare Mechanismen synaptischer Plastizität an nozizeptiven Neuronen des Rückenmarks unter spezieller Berücksichtigung von AMPA-Rezeptoren. University of Heidelberg

Current occupation: unknown

Shengjia Zhang, PhD (2006) Decoding neuronal activity-dependent survival and plasticity through the whole-genome expression profiling. University of Heidelberg

Current occupation: Postdoc, Germany

Ayla Arslan, PhD (2006) Specifying determinants of the subcellular targeting of synaptic and extrasynaptic GABA(A) receptors. University of Heidelberg

Current occupation: University Lecturer, Turkey

Julia Bucher, PhD (2006) Early development of topographically organized activity patterns and GABAergic interneurons in zebrafish olfactory bulb. University of Heidelberg

Current occupation: Postdoc, Germany

Fiona J.L. Arnold, PhD (2006) Mechanisms controlling gene expression following synaptic activity in hippocampal neurons. Cambridge University, UK

Current occupation: Postdoc, United Kingdom

Jens Dübel, PhD (2005) Untersuchung intrazellulärer Chlorid-Konzentrationen in Clomeleon-exprimierenden ON-Bipolarzellen der Mausretina mit Hilfe der Zwei-Photonen-Mikroskopie. University of Heidelberg

Current occupation: Postdoc, Germany

Ioana Monica Inta, PhD (2005) TWEAK and NF- $\kappa$ B in Cerebral Ischemia. University of Heidelberg

Current occupation: Medical Doctor, Germany