Heinz BECK, MD

Laboratory of Experimental Epileptology and Cognition Research
Department of Epileptology, Life & Brain Center
University Hospital Bonn
Sigmund-Freud-Str. 25
D-53127 Bonn
Phone: +49 (0)228-6885-270 E-mail: heinz.beck@ukbonn.de

Current position

W3 Professor of Experimental Epileptology,
Laboratory of Experimental Epileptology and Cognition Research

Research expertise

My group has an overarching research interest in neuronal integration and the function of neuronal networks in the intact brain. We also have a strong track record investigating basic mechanisms of epilepsy in animal models and tissue obtained from epilepsy surgery. To achieve insights into the network motifs govering normal and aberrant behavior, we are employing in-vivo electrophysiology and imaging together with opto- and chemogenetic approaches in awake rodents.

Academic qualifications

2001	Habilitation, University of Bonn, Neurophysiology
1994	Doctorate: Dr. med., University of Cologne, Germany
1987 - 1994	Medicine, University of Cologne, Medical School, Germany

Postgraduate professional career

2011 - pres.	Full Professor (W3) of Experimental Epileptology, University of Bonn, Germany
2005 - pres.	Parallel appointment, Head, NeuroPlasticity Translational Research Unit, Life & Brain
2004 - 2011	C3 Professor of Experimental Epileptology, University of Bonn, Germany
2001 - 2004	Heisenberg-Fellow of the DFG
1995 - 2001	Research associate, Department of Epileptology, University of Bonn, Germany
1994 - 1995	Postdoctoral fellow, Department of Epileptology, University of Bonn, Germany

Honors and awards

2015	Cure Distinguished Lecturer, Boston, USA
2001	Heisenberg-Stipend of the German Research Foundation (DFG)
2001	Bennigsen-Foerder Prize of the Ministry of Education, NRW
2000	Alfred-Hauptmann Prize for Epilepsy Research
1999	International Michael Prize
1996	Young Investigator Award of the International League against Epilepsy

Memberships and professional functions

2015 - pres.	Vice Chair, International Max Planck Research School IMPRS ‘Brain and Behavior’, Bonn, Germany and Jupiter, Florida.
2013 - pres.	Speaker of the Collaborative Research Center SFB 1089 ‘Synaptic Micronetworks in Health and Disease’
2012 - pres.	Associate Editor, Journal of Neuroscience, Editor, Epilepsia
2013- 2015	President, German Epilepsy Society
2012- 2016	Chair, Bonn International Graduate School ‘BIGS Neuroscience’, University of Bonn, Germany
2012- 2013	Vice-President, German Epilepsy Society
2010- 2013	Founder and Chair, SciMed Doctoral College for Medical Students, University of Bonn, Germany

Most important funding since 2012

2016 - 2018	ERA-NET Neuron “DeCipher”
2013 - 2017	DFG SFB 1089 “Synaptic Micronetworks in Health and Disease”
2013 - 2016	German-French Collaborative Projects of ANR/DFG “ebGLUNet”
2013 - 2016	Industry funding (BIAL)
2012 - 2014	Industry funding (UCB)

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Publications

1. Pabst, M., Braganza, O., Dannenberg, H., Hu, W., Pothmann, L., Rosen, J., Mody, I., van Loo, K., Deisseroth, K., Becker, A.J., Schoch, S., and **Beck, H.** (2016). Astrocyte Intermediaries of Septal Cholinergic Modulation in the Hippocampus. ***Neuron*** 90, 853-865.
2. Pitkanen, A., Loscher, W., Vezzani, A., Becker, A.J., Simonato, M., Lukasiuk, K., Grohn, O., Bankstahl, J.P., Friedman, A., Aronica, E., Gorter, J.A., Ravizza, T., Sisodiya, S.M., Kokaia, M., and **Beck, H.** (2016). Advances in the development of biomarkers for epilepsy. ***Lancet Neurol*** 15, 843-856.
3. Dannenberg, H., Pabst, M., Braganza, O., Schoch, S., Niediek, J., Bayraktar, M., Mormann, F., and **Beck, H.** (2015). Synergy of direct and indirect cholinergic septo-hippocampal pathways coordinates firing in hippocampal networks. ***J Neurosci*** 35, 8394-8410.
4. Doeser, A., Dickhof, G., Reitze, M., Uebachs, M., Schaub, C., Pires, N.M., Bonifacio, M.J., Soares-da-Silva, P., and **Beck, H.** (2015). Targeting pharmacoresistant epilepsy and epileptogenesis with a dual-purpose antiepileptic drug. ***Brain*** 138, 371-387.
5. Kabanova, A., Pabst, M., Lorkowski, M., Braganza, O., Boehlen, A., Nikbakht, N., Pothmann, L., Vaswani, A.R., Musgrove, R., Di Monte, D.A., Sauvage, M., **Beck, H.**, and Blaess, S. (2015). Function and developmental origin of a mesocortical inhibitory circuit. ***Nat Neurosci*** 18, 872-882.
6. Lennarz, S., Alich, T.C., Kelly, T., Blind, M., **Beck, H.**, and Mayer, G. (2015). Selective aptamer-based control of intraneuronal signaling. ***Angew Chem Int Ed Engl*** 54, 5369-5373.
7. Royeck, M., Kelly, T., Opitz, T., Otte, D.M., Rennhack, A., Woitecki, A., Pitsch, J., Becker, A., Schoch, S., Kaupp, U.B., Yaari, Y., Zimmer, A., and **Beck, H.** (2015). Downregulation of Spermine Augments Dendritic Persistent Sodium Currents and Synaptic Integration after Status Epilepticus. ***J Neurosci*** 35, 15240-15253.
8. Pothmann, L., Muller, C., Averkin, R.G., Bellistri, E., Miklitz, C., Uebachs, M., Remy, S., Menendez de la Prida, L., and **Beck, H.** (2014). Function of inhibitory micronetworks is spared by Na+ channel-acting anticonvulsant drugs. ***J Neurosci*** 34, 9720-9735.
9. Klatte, K., Kirschstein, T., Otte, D., Pothmann, L., Muller, L., Tokay, T., Kober, M., Uebachs, M., Zimmer, A., and **Beck, H.** (2013). Impaired D-serine-mediated cotransmission mediates cognitive dysfunction in epilepsy. ***J Neurosci*** 33, 13066-13080.
10. Krueppel, R., Remy, S., and **Beck, H.** (2011). Dendritic integration in hippocampal dentate granule cells. ***Neuron*** 71, 512-528.