
BIOGRAPHICAL SKETCH

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NAME Wolfgang Bernhard Liedtke	POSITION TITLE Assistant Professor and Head of Laboratory
eRA COMMONS USER NAME LIEDT001	

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Cologne, Germany	M.D.	1989	Medicine
University of Bochum, Germany	Ph.D.	1990	Medical Virology
University Medical Center, Tuebingen, Germany		1989-1991	Neurology (Residency)
University Medical Center, Essen, Germany		1991-1994	Neurology, Psychiatry
Albert Einstein College of Medicine, Yeshiva University, The Bronx, NY		1994-1997	Neuropathology (Fellow)
The Rockefeller University, New York, NY		1997-2004	Molecular Genetics

Employment History:

1989-1991 Neurology Department of the University of Tuebingen, Germany (Resident)
1991-1993 Neurology Department of the University of Essen, Germany (Resident & Senior Res.)
1993-1994 Psychiatry Department of the University of Essen, Germany (Resident & Senior Res.)
1994 -1997 Department of Pathology, Division of Neuropathology,
Albert Einstein College of Medicine, Bronx, NY (Neuropathology Fellow with Dr. Cedric S. Raine)
1997 - 2004 Laboratory of Molecular Genetics, The Rockefeller University, New York, NY
(Research Associate, then Assistant Professor in Dr. Jeffrey M. Friedman's lab)
March 2004 - : Duke University Medical Center, Center for Translational Neuroscience, Durham, NC
Assistant Professor (tenure-track) and Head of Laboratory; Attending Physician, Duke Pain Clinics

Honors:

- **Scholarship of the German National Merit Foundation**, Bonn, Germany, during Medical School Education (supporting <0.25% of the German student population).
- Ph.D. thesis "Immune response to rotavirus infection" awarded degree **magna cum laude** (1990);
- **Scholarship of the Alexander von Humboldt-Foundation**, Bonn, Germany, Feodor Lynen Program for German Research Fellows abroad, supporting the Neuropathology Fellowship.
- **Member of the Alexander von Humboldt - Association of America**, Washington, DC.
- **Henry L. Moses Award of Yeshiva University, New York, First Prize in the Basic Science Category**, March 1998
- **Mentored Clinical Scientist Development Award (K08)** of the National Institutes of Mental Health ("Molecular Studies of Osmotic Neural Sensing"), 1/2002 – 12/2006
- **Klingenstein Fellowship in the Neurosciences, Robert H. Ebert Clinical Scholar**, The Esther A. & Joseph Klingenstein Fund, Inc., New York, NY, USA; 2004

Publications (selection):

1. **Liedtke W**, Edelmann W, Bierri PL, Chiu FC, Cowan N, Kucherlapati R, Raine CS. GFAP is necessary for the integrity of CNS white matter architecture and the long-term maintenance of myelination. *Neuron*, 1996, 17, 607-615
2. **Liedtke W**, Edelmann W, Chiu FC, Kucherlapati R, Raine CS. Experimental autoimmune encephalomyelitis in mice lacking glial fibrillary acidic protein is characterized by a more severe clinical course and an infiltrative central nervous system lesion. *Am J Pathol* 1998, 152, 251-259
3. **Liedtke W**, Cannella B, Mazzaccaro RJ, Clements JM, Miller KM, Wucherpfennig KW, Gearing AJH, Raine CS. Effective treatment of models of multiple sclerosis by matrix metalloproteinase inhibitors. *Ann Neurol* 1998, 44, 35-46

4. **Liedtke W**, Choe Y, Marti-Renom MA, Bell AM, Denis CS, Sali A, Hudspeth AJ, Friedman JM, Heller S. Vanilloid receptor-related osmotically activated channel (VR-OAC), a candidate vertebrate osmoreceptor. *Cell* 2000, 103, 525-535
 5. **Liedtke W**, Leman EE, Fyffe REW, Raine CS, Schubart UK. Stathmin-deficient mice develop an age-dependent axonopathy of the central and peripheral nervous systems. *Am J Pathol* 2002, 160, 469-480
 6. Cohen P, Miyazaki M, Socci ND, Hagge-Greenberg A, **Liedtke W**, Soukas AA, Sharma R, Ludgins LC, Ntambi JM, Friedman JM. Role for stearyl-CoA desaturase in leptin-mediated weight loss. *Science* 2002, 297, 240-244
 7. **Liedtke W**, Friedman JM. Abnormal osmotic regulation in *trpv4^{-/-}* mice. *PNAS* 2003, 100, 13698-13703
 8. **Liedtke W**, Tobin DM, Bargmann CI, Friedman JM. Mammalian TRPV4 (VR-OAC) directs behavioral responses to osmotic and mechanical stimuli in *C. elegans*. *PNAS* 2003, 100, 14531-14536
 9. **Liedtke W**, Simon SA. A possible role for TRPV4 receptors in asthma. *Am J Physiol Lung* 2004, 287, L269-271
 10. **Liedtke W**. TRPV4 as osmosensor: a transgenic approach. *Pfluegers Archiv - Eur J Physiol* 2005, 451, 176-180
 11. **Liedtke W**. TRPV4 plays an evolutionary conserved role in the transduction of osmotic and mechanical stimuli in live animals. *J Physiol* 2005, 576, 53-58
 12. Alessandri-Haber N, Joseph E, Olayinka AD, **Liedtke W**, Levine JD. TRPV4 mediates pain-related behavior induced by mild hypertonic stimuli in the presence of inflammatory mediator. *Pain* 2005, 118, 70-79
 13. **Liedtke W**, Kim C. Functionality of the TRPV subfamily of TRP ion channels: add mechano-TRP and osmo-TRP to the lexicon ! *Cell Mol Life Sci* 2005, 62 2985-3001
 14. Liu L, Yang TM, **Liedtke W**, Simon SA. Chronic IL-1 β signaling potentiates voltage-dependent sodium currents in trigeminal nociceptive neurons. *J Neurophys* 2006, 95, 1478-1490
 15. Liu X, Bandyopadhyay BB, Makamoto T, Singh BB, **Liedtke W**, Melvin JE, Ambudkar IS. A role for AQP5 in activation of TRPV4 by hypotonicity: concerted involvement of AQP5 and TRPV4 in regulation of volume recovery. *J Biol Chem* 2006, 281, 15485-15495
 16. **Liedtke W**. TRPV channels functioning in transduction of osmotic stimuli. *J Endocrinol* 2006, 2006, 191, 515-523
 17. Alvarez DF, King JA, Weber D, Addison E, **Liedtke W**, Townsley MI. Transient Receptor Potential Vanilloid 4-Mediated Disruption of the Alveolar Septal Barrier. *Circ Res* 2006, 99, 988-995
 18. Grant AD, Cottrell GS, Amadesi S, Trevisani M, Nicoletti P, Materazzi S, Altier C, Cenac N, Zamponi GW, Bautista-Cruz F, Barajjas Lopez C, Joseph E, Levine JD, **Liedtke W**, Vanner S, Vergnolle N, Geppetti P, Bunnnett NW. Protease-activated receptor 2 sensitizes the transient receptor potential vanilloid 4 ion channel to cause mechanical hyperalgesia. *J Phys* 2007, 578, 715-733
 19. Liu L, Chen L, **Liedtke W**, Simon SA. Changes in osmolality sensitize the response to capsaicin in trigeminal sensory neurons. *J Neurophys* 2007, 97, 2001-2015
 20. **Liedtke W**. TRPV ion channel' role in sensory transduction of osmotic stimuli in mammals. *Exp Physiol* 2007, 92, 507-512
 21. Hamanaka K, Jian, MY, Weber DS, Alvarez DF, Townsley MI, Al-Mehdi AB, King JA, **Liedtke W**, Parker JC. TRPV4 initiates the acute calcium-dependent permeability increase during ventilator-induced lung injury in isolated mouse lungs. *Am J Phys* 2007, *e-pub (LCMP-00221-2007 Revised)*
 21. Hartmannsgruber V, Heyken W-T, Rana A, Grgic I, Harteneck C, **Liedtke W**, Hoyer J, Koehler R. Arterial response to shear stress critically depends on endothelial TRPV4 expression. *PLoS ONE* 2007, *e-pub*
 22. Brierley SM, Page AJ, Hughes PA, Adam B, Liebrechts T, Cooper NJ, Holtmann G, **Liedtke W**, Blackshaw LA.
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TRPV4 ion channels mediate visceral pain. PNAS 2007, *submitted*

24. Yeo M, **Liedtke W**. Molecular mechanisms of transcriptional regulation of KCC2. 2007, *manuscript in preparation*

Books:

• **TRP ion channels in Transduction of Sensory Stimuli and Cellular Signaling Cascades**

Editor-in-chief: Wolfgang Liedtke

also contributed one chapter “TRPV channels’ function in osmo- and mechanotransduction”

CRC Press/ Taylor & Francis, Boca Raton, FL; 2006

31 chapters, international consortium of authors; 467 pages

• **Transient Receptor Potential (TRP) Channels**

Editors: Veit Flockerzi & Bernd Nilius

Handbuch fuer Experimentelle Pharmakologie, Vol. 179, 622 pages

Springer Verlag, Berlin – Heidelberg, Germany, 2007

Chapter: TRPV channels’ role in osmotransduction and mechanotransduction

• **Sensing with ion channels**

Editor: Boris Martinac

Springer Verlag, Berlin - Heidelberg, Germany, 2007

Chapter 5: TRPV ion channels and sensory transduction of osmotic and mechanical stimuli in mammals
