BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Liedtke, Wolfgang Bernhard, M.D., Ph.D.	**Assistant Professor of Medicine/Neurology**
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

A. Positions and Honors

Positions and Employment

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

Honors

1985-89 Scholarship of the German National Merit Foundation, Bonn, Germany, during Medical School Education (supporting <0.25% of the German student population)
1990 Ph.D. thesis "Immune response to rotavirus infection" awarded degree magna cum laude
1994-1997 Scholarship of the Alexander von Humboldt-Foundation, Bonn, Germany, Feodor Lynen Program for German Research Fellows abroad, supporting the Neuropathology Fellowship
since 1998 Member of the Alexander von Humboldt - Association of America, Washington, DC
March 1998 Henry L. Moses Award of Yeshiva University, New York, First Prize in the Basic Science Category
2002-2006 Mentored Clinical Scientist Development Award (K08) of the National Institutes of Mental Health ("Molecular Studies of Osmotic Neural Sensing")
2004 Klingenstein Fellowship in the Neurosciences, Robert H. Ebert Clinical Scholar, The Esther A. & Joseph Klingenstein Fund, New York, NY, USA

B. Selected Peer-Reviewed Publications (in chronological order)

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-1ß 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; 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, Bunnett 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; 293:L923-932.
22. 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; 2:e827.
23. Gevaert T, Vriens J, Segal A, Everaerts W, Roskams T, Talavera K, Owsianik G**, Liedtke W**, Daelemans D, Dewachter I, Van Leuven F, Voets T, De Ridder D, Nilius B. Deletion of the transient receptor potential cation channel TRPV4 impairs murine bladder voiding. J Clin Invest 2007; 117:3453-3462.

24. Jian MY, King JA, Al-Mehdi AB, **Liedtke W**, Townsley MI. High vascular pressure-induced lung injury requires P450 epoxygenase-dependent activation of TRPV4. Am J Respir Cell Mol Biol 2008; 38:386-392
25. Brierley SM, Page AJ, Hughes PA, Adam B, Liebregts T, Cooper NJ, Holtmann G, **Liedtke W**, Blackshaw LA. TRPV4 ion channels mediate visceral pain. Gastroenterology 2008; 134, 2059-2069
26. Sipe WE, Brierley SM, Martin CM, Phillis BD, Cruz FB, Grady EF, **Liedtke W**, Cohen DM, Vanner S, Blackshaw LA, Bunnett NW. Transient receptor potential vanilloid 4 mediates protease activated receptor 2-induced sensitization of colonic afferent nerves and visceral hyperalgesia. Am J Physiol Gastrointest Liver Physiol. 2008 May;294(5):G1288-98.
27. Yin J, Hoffmann J, Kaestle SM, Neye N, Wang L, Baeurle J, **Liedtke W**, Wu S, Kuppe H, Pries AR, Kuebler WM. Negative-feedback loop attenuates hydrostatic lung edema via a cGMP-dependent regulation of transient receptor potential vanilloid 4. Circ Res. 2008 Apr 25;102(8):966-74. Epub 2008 Mar 6.
28. Simon SA, **Liedtke W**. How irritating: The role of TRPA1 in sensing cigarette smoke and aerogenic oxidants in the airways. J Clin Invest 2008, 118, 2383-2386
29. Cenac N, Altier C, Chapman K, **Liedtke W**, Zamponi G, Vergnolle N. Transient receptor potential vanilloid-4: a major role in visceral hypersensitivity symptoms. Gastroenterology 2008, e-pub
30. **Liedtke W.** Molecular Mechanism of TRPV4-mediated neural signaling. Ann NY Acad Sci 2008, 1144, 42-52
31. Lorenzo IM, **Liedtke W**, Sanderson MJ, Valverde MA. TRPV4 channel participates in receptor-operated calcium entry and ciliary beat frequency regulation in mouse airways epithelial cells. PNAS 2008, 105:12611-12616
32. Li J, Ghio AJ, Cho SH, Brinckerhoff CE, Simon SA, **Liedtke W**. Organic compounds from diesel-exhaust particles activate the matrix-metalloproteinase-1 gene in human bronchial epithelia: mechanism of action and human susceptibility factors. Environmental Health Perspectives 2009, 117, 400-410
33. Wu S, Jian MY, Xu YC, Zhou C, Al-Mehdi AB, **Liedtke W,** Shin HS, Townsley MI. Ca^{2+} Entry via α-1G and TRPV4 Channels Differentially Regulates Surface Expression of P-selectin and Barrier Integrity in Pulmonary Capillary Endothelium. Am J Physiol Lung Cell Mol Physiol. 2009 Jul 17. [Epub]
34. Earley S, Pauyo T, Drapp R, Tavares MJ, **Liedtke W**, Brayden JE. TRPV4-Dependent Dilation of Peripheral Resistance Arteries Influences Arterial Pressure. Am J Physiol Heart Circ Physiol. 2009 Jul 17. [Epub]
35. Guilak F, Cohen DM, Estes BT, Gimble JM, **Liedtke W**, Chen CS. Control of stem cell fate by physical interactions with the extracellular matrix. Cell Stem Cell. 2009 Jul 2;5(1):17-26
36. Pham M, Leddy H, Votta B, Kumar S, Levy D, Lipshutz D, Lee S, **Liedtke W**, Guilak F. Functional characterization of TRPV4 as an osmotically sensitive ion channel in articular chondrocytes. Arthritis & Rheumatism 2009, accepted for publication
37. Yeo M, Berglund K, Augustine GJ, **Liedtke W**. Repression by REST-RE-1 regulates Kcc2 transcription critical for chloride-shift and GABA-switch in cortical neurons. Journal of Neuroscience 2009, submitted

Books/Book Chapters

TRP Ion Channels in Transduction of Sensory Stimuli and Cellular Signaling Cascades. Editor-in-chief: W Liedtke. Also contributed chapter titled "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: V Flockerzi & B Nilius. Chapter titled "TRPV channels' role in osmotransduction and mechanotransduction". Springer Verlag, Berlin – Heidelberg, Germany, 2007. Handbuch fuer Experimentelle Pharmakologie, Vol. 179, 622 pages.

Sensing with Ion Channels. Editor: B Martinac. Chapter 5 titled "TRPV ion channels and sensory transduction of osmotic and mechanical stimuli in mammals". Springer Verlag, Berlin - Heidelberg, Germany, 2007. Springer Series in Biophysics 11, pp 85-100.