

Scientific CV

Univ.- Prof. Dr. med. **Elena E. Pohl**
Professor of Physiology and Biophysics



Education

2008	<i>Venia docendi</i> in Biophysics, Charité - Universitätsmedizin Berlin, Germany
2004	Licence to practise human medicine
1995	Medical doctorate (MD), Martin-Luther-University, Halle (Saale), Germany
1991-1995	Study of Medicine, Martin-Luther-University, Halle (Saale), Germany
1989	Diploma in Biophysics
1983-1989	Study of Medical Biophysics, State Medical University, Moscow, Russia

Scientific Carrier

Since 2009	Full Professor, Head of Unit "Physiology and Biophysics", University of Veterinary Medicine, Austria
2004-2009	Assistant Professor (C1) at the Institute of Cell Biology and Neurobiology, Charité - Universitätsmedizin Berlin, Germany
2002 - 2004	Project Leader and Head of the Two-Photon Microscopy Facility, Neuroscience Research Centre, Charité - Universitätsmedizin Berlin, Germany
2001 - 2002	Project Leader, Institute of Physiology, Otto-von-Guericke-University, Magdeburg, Germany
1997 - 2000	Research Award by the Minister of Education and Cultural Affairs of Saxony-Anhalt, Germany
1989 – 1997	Research Scientist, Institute of Applied Biophysics, Martin-Luther-University, Halle (Saale), Germany

Grant history (most important grants in last 10 years)

2004-2007	Principal investigator, DFG Po 524/2-2
2004-2006	Principal investigator from Germany, DFG 436 TSE 113/44/0-1
2007-2012	Principal investigator, DFG Po 524/3-1
2007-2012	Principal investigator, DFG Po 524/5-1
2012-2014	Principal investigator from Austria, OeAD, PL-14/2012
2012-2015	Principal investigator, FWF P 25123-B20
2013-2016	Principal investigator, FWF P 25357-B20

Research interests

Membrane transport, mitochondrial uncoupling proteins, protein-lipid interactions, mitochondrial metabolism, stem cell differentiation, cell metabolism (cancer, fat, neuronal and immunological cells), oxidative stress, reactive aldehydes and their involvement in neuroimmunological diseases and obesity, neuroinflammation

Publications 2010-2015 (@ - corresponding author)

1. Klotzsch E., Smorodchenko A., Löffler L., Moldzio R., Parkinson E., Schütz G.J., Pohl, E.E.® (2015). Superresolution microscopy reveals spatial separation of UCP4 and F₀F₁-ATP synthase in neuronal mitochondria. **PNAS**, 112 (1): 130-135. (IF 5Y 9.8).
2. Awad, WA; Smorodchenko, A; Hess, C; Aschenbach, JR; Molnár, A; Dublec, K; Khayal, B; Pohl, EE; Hess, M. (2015): Increased intracellular calcium level and impaired nutrient absorption are important pathogenicity traits in the chicken intestinal epithelium during *Campylobacter jejuni* colonization. **Appl Microbiol Biotechnol**. 2015; [Article in Press] . (IF 2013, 3.8)
3. Marxen, S; Stark, TD; Frenzel, E; Rüttschle, A; Lücking, G; Pürstinger, G; Pohl, EE; Scherer, S; Ehling-Schulz, M; Hofmann, T.® (2015): Chemodiversity of cereulide, the emetic toxin of *Bacillus cereus*. **Anal Bioanal Chem.**, 407(9):2439-2453 (IF 2013, 3.6)
4. Andrukhova, O., Slavic, S., Smorodchenko, A., Zeitz, U., Shalhoub, V., Lanske, B., Pohl, E. E., Erben, R. G.® (2014). FGF23 regulates renal sodium handling and blood pressure. **EMBO Mol. Med.** 6(6):744-59. (IF 5Y 9.4)
5. Rupprecht, A., Sittner, D., Smorodchenko, A., Hilse, K.E., Goyn, J., Moldzio R., Seiler, A. E. M., Bräuer, A.U., Pohl, E.E.® (2014) Uncoupling protein 2 and 4 expression pattern during stem cell differentiation provides new insight into their putative function. **PLOS ONE** 9 (2): e88474 (IF 5Y 4.2).
6. Andrukhova, O., Smorodchenko, A., Egerbacher, M., Streicher, C., Zeitz, U., Goetz, R., Shalhoub, V., Mohammadi M., Pohl, E. E., Lanske, B., Erben, R. G.® (2014) The phosphaturic hormone FGF23 promotes renal calcium reabsorption through the TRPV5 calcium channel. **EMBO**, 33(3):229-46 (IF 5Y 9.6).
7. Zhu, R., Rupprecht, A., Ebner, A., Haselgruebler, T., Gruber, H.J., Hinterdorfer, P., Pohl, E.E.® (2013) Mapping the nucleotide binding site of UCP1 using atomic force microscopy. **JACS** 135, 3640-3646 (IF 5Y 10.2).
8. Yu, W.M, Liu, X., Shen, J.H., Jovanovic, O., Pohl, E.E., Gerson, S.L., Finkel, T., Broxmeyer, H.E., Qu, C.K.® (2013) A differentiation checkpoint in hematopoietic stem cells activated by bioenergetic stress. **Cell Stem Cell** 12, 62–74. (IF 5Y 27.4).
9. Malingriaux*, E.A., Rupprecht*, A., Gille, L., Jovanovic, O., Jezek P., Jaburek, M., Pohl, E.E.® (2013) Fatty acids are key in 4-hydroxy-2-nonenal-mediated activation of uncoupling proteins 1 and 2. **PLOS ONE** 8(10): e77786 (IF 5Y 4.2).
10. Rupprecht, A., Bräuer, A.U., Smorodchenko, A., Goyn, J., Hilse K.E., Shabalina I.G., Infante-Duarte, C., Pohl, E.E.® (2012) Quantification of Uncoupling protein 2 reveals its main

expression in immune cells and selective up-regulation during T-cell proliferation. **PLOS ONE** 7(8): e41406. (IF 5Y 4.2)

11. Visan, A., Hayess, K., Sittner, D., Pohl, E.E., Riebeling, C., Slawik, B., Gulich, K., Oelgeschläger, M., Luch, A., Seiler, A.E.[@] (2012) Neural differentiation of mouse embryonic stem cells as a tool to assess developmental neurotoxicity in vitro. **Neurotoxicology** 33 (5): 1135-46. (IF 5Y 3.3)

12. Streicher, C., Zeitze, U., Andrukhova, O., Rupprecht, A., Pohl, E., Larsson T. E., Windisch W., Lanske, B., Erben, R. G.[@] (2012). Long-term Fgf23 deficiency does not influence aging, glucose homeostasis or fat metabolism in mice with a nonfunctioning vitamin D receptor. **Endocrinology** 151(4). (IF 5Y 4.8)

13. Smorodchenko, A., Rupprecht, A., Fuchs, J., Gross, J., Pohl, E.E.[@] (2011). Role of mitochondrial uncoupling protein 4 in rat inner ear. **Mol. Cell. Neurosci.** 47(4), 244-53. (IF 3Y 3.9).

14. Wildling, L., Unterauer, B., Zhu, R., Rupprecht, A., Haselgruebler, T., Rankl, C., Ebner, A., Vater, D., Pollheimer, P., Pohl, E.E., Hinterdorfer, P., Gruber, H. J.[@] (2011). Linking of sensor molecules with amino groups to amino-functionalized AFM tips. **Bioconjugate Chem.** 22, 1239–1248 (IF 5Y 5.0).

15. Rupprecht, A., Sokolenko, E. A., Beck, V., Ninnemann, O., Jaburek, M., Trimbuch, T., Klishin, S. S., Jezek, P., Skulachev, V. P., Pohl, E.E.[@] (2010). Role of the transmembrane potential in the membrane proton leak. **Biophys. J.** 98, 1503-1511 (IF 5Y 4.0).

16. Gross, J.[@], Stute, K., Moller, R., Fuchs, J., Amarjargal, N., Pohl, E.E., Angerstein, M., Smorodchenko, A., and Mazurek, B. (2010). Expression of prestin and Gata-3, -2, -1 mRNA in the rat organ of Corti during the postnatal period and in culture. **Hear. Res.** 261, 9-21 (IF 5Y 2.7).

5 most important publications

1. Klotzsch E., Smorodchenko A., Löffler L., Moldzio R., Parkinson E., Schütz G.J., Pohl, E.E.[@] (2015). Superresolution microscopy reveals spatial separation of UCP4 and F0F1-ATP synthase in neuronal mitochondria. **PNAS**, 112 (1): 130-135. (IF 9.8).

2. Zhu, R., Rupprecht, A., Ebner, A., Haselgruebler, T., Gruber, H.J., Hinterdorfer, P., Pohl, E.E.[@] (2013) Mapping the nucleotide binding site of UCP1 using atomic force microscopy. **JACS** 135, 3640-3646 (IF 10.2).

3. Yu, W.M, Liu, X., Shen, J.H., Jovanovic, O., Pohl, E.E., Gerson, S.L., Finkel, T., Broxmeyer, H.E., Qu, C.K.[@] (2013) A differentiation checkpoint in hematopoietic stem cells activated by bioenergetic stress. **Cell Stem Cell** 12, 62–74. (IF 27.4).

4. Rupprecht, A., Sokolenko, E. A., Beck, V., Ninnemann, O., Jaburek, M., Trimbuch, T., Klishin, S. S., Jezek, P., Skulachev, V. P., and Pohl, E.E.[@] (2010) Role of the transmembrane potential in the membrane proton leak. **Biophys. J.** 98, 1503-1511 (IF 4.2).

5. Beck, V., Jaburek, M., Demina, T., Rupprecht, A., Porter R. K., Jezek, P., Pohl, E.E.[@] (2007). Polyunsaturated fatty acids activate human uncoupling proteins 1 and 2 in planar lipid bilayers. **FASEB J.**, 21(4):1137-44 (IF 7.1).