Dr.rer.nat. Holger Lorenz

Zentrum für Molekulare Biologie der Universität Heidelberg (ZMBH)

CURRICULUM VITAE

PROFESSIONAL & RESEARCH EXPERIENCE

November 2008 - now	University of Heidelberg: Head of Imaging Facility at the ZMBH. Teaching: Courses and lectures for Master and Graduate students and postdocs on basic and advanced microscopy and imaging analysis.
2007 - 2008	Carl Zeiss Germany: Application specialist and trainer for advanced microscopy and laser microdissection, worldwide.
2002 - 2006	Post-Doctoral Fellowship: Cell Biology and Metabolism Branch of the National Institutes of Child Health and Human Development (CBMB), National Institutes of Health (NIH), USA. Mentor: Dr. Jennifer Lippincott-Schwartz
1998 - 2002	Graduate Student: Zentrum für Neuropathologie und Prionforschung, LMU München. Mentor: Prof. Dr. Hans A. Kretzschmar

EDUCATION

February 2002	Doktor der Biologie (equivalent to Ph.D. in Biology), Ludwig-Maximilians-Universität (LMU) München, Germany
December 1997	Diplom in Biologie (equivalent to M.S. in Biology), Georg-August-Universität Göttingen, Germany

FIELDS OF INTEREST

Light microscopy:	Fixed and live cell imaging, brightfield and fluorescence, widefield and confocal microscopy, TIRF, FRAP, FLIP, FRET, 4/5D, FPP, FCS, RICS, deconvolution, photoactivation, superresolution microscopy (3D STED, Tau-STED, 3D dSTORM/PALM), FLIM
Image analysis/processing:	Courses and lectures on quantitative and qualitative image analysis, scripts and macro development and ethics in bioimaging
Research interest:	Protein quality control and ER-associated degradation in mammalian cells. Imaging of cellular processes using advanced light microscopy and lifetime applications. Software tool development (Cellulyzer, Map3-2D). Imaging method development for improved spatial resolution (e.g. swelling)

SELECTED PUBLICATIONS

1. Jaiswal A, Hoerth CH, Zuniga Pereira AM, Lorenz H. (2019) Improved spatial resolution by induced live cell and organelle swelling in hypotonic solutions. Scientific Reports. doi: 10.1038/s41598-019-49408-2.
2. Baerenz, F. et al. Ccdc61 controls centrosomal localization of Cep170 and is required for spindle assembly and symmetry. (2018) Mol Biol Cell. doi: 10.1091/mbc.E18-02-0115
3. Jafarpour, A. & Lorenz, H. (2017) Cellulyzer - Automated analysis and interactive visualization/simulation of select cellular processes. arXiv:1703.02611 [physics.bio-ph]
4. Sendra, G.H., Hoerth, C.H., Wunder, C. and Lorenz, H. (2015) 2D map projections for visualization and quantitative analysis of 3D fluorescence micrographs. Scientific Reports 5, 12457, doi:10.1038/srep12457.
5. Meissner, C., Lorenz, H., Hehn, B. and Lemberg, M.K. (2015) Intramembrane protease PARL defines a negative regulator of PINK1- and PARK2/Parkin-dependent mitophagy. Autophagy. doi: 10.1080/15548627.2015.1063763 (Epub ahead of print).
6. Bärenz, F., Inoue, D., Yokoyama, H., Tegha-Dunghu, J., Freiss, S., Draeger, S., Mayilo, D., Cado, I., Merker, S., Klinger, M., Hoeckendorf, B., Pilz, S., Hupfeld, K., Steinbeisser, H., Lorenz, H., Ruppert, T., Wittbrodt, J. and Gruss O.J. The centriolar satellite protein SSX2IP promotes centrosome maturation. (2013) Journal of Cell Biology 8, 81-95. doi: 10.1083/jcb.201302122.
7. Werner, A., Disanza, A., Reifenberger, N., Habeck, G., Becker, J., Calabrese, M., Urlaub, H., Lorenz, H., Schulman, B., Scita, G. and Melchior, F. (2013) SCF(Fbxw5) mediates transient degradation of actin remodeler Eps8 to allow proper mitotic progression. Nature Cell Biology 15(2), 179-188. doi: 10.1038/ncb2661.
8. Vilardi, F., Lorenz, H. and Dobberstein, B. (2011) WRB is the receptor for TRC40/Asna1-mediated insertion of tail-anchored proteins into the ER membrane. Journal of Cell Science 124, 1301-1307.
9. Meissner, C., Lorenz, H., Weihofen, A., Selkoe, D.J. and Lemberg, M.K. (2011) The mitochondrial intramembrane protease PARL cleaves human Pink1 to regulate Pink1 trafficking. Journal of Neurochemistry 117, 856-867.
10. Wunder, C., Lippincott-Schwartz, J. and Lorenz, H. (2010) Determining membrane protein topologies in single cells and high-throughput screening applications. Current Protocols in Cell Biology; Chapter 5:Unit 5.7.
11. Khmelinskii, A., Keller, P.J., Lorenz, H., Schiebel, E. and Knop, M. (2010) Segregation of yeast nuclear pores. Nature 466, pE1.
12. Lorenz, H., Hailey, D.W. and Lippincott-Schwartz, J. (2008). Adressing membrane topology using the fluorescence protease protection (FPP) assay. Methods in Molecular Biology 440, 227-233.
13. Lorenz, H., Hailey, D.W., Wunder, C. and Lippincott-Schwartz, J. (2006). The fluorescence protease protection (FPP) assay to determine protein localization and membrane topology. Nature Protocols 1, 276-279.
14. Frescas, D., Mavrakis, M., Lorenz, H., DeLotto, R. and Lippincott-Schwartz, J. (2006). The secretory membrane system in the Drosophila syncytial blastoderm embryo exists as functionally compartmentalized units around individual nuclei. Journal of Cell Biology 173 (2), 219-230.
15. Lorenz, H., Hailey, D.W. and Lippincott-Schwartz, J. (2006) Fluorescence protease protection of GFP chimeras to reveal protein toplogy and subcellular localization. Nature Methods 3, 205-210.