

Curriculum vitae: Jürgen J. Heinisch (15.05.1958)

Current address:

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Education

1976-1982 Studies of biology at the TH Darmstadt
(with 3 month research fellowship at the University of East Anglia Norwich,
England)
1982-1985 Ph.D. (Dr. rer. nat.), TH Darmstadt (with Prof. Dr. F.K. Zimmermann)

Scientific career

1985-1986 Research assistant at the TH Darmstadt (in the Department of Genetics; with
Prof. F.K. Zimmermann)
1986-1988 Postdoctoral fellow at the University of Alberta, Dept. of Genetics
(Edmonton/Canada) with Prof. Dr. R.C. von Borstel
1988-1993 Research assistant at the Institute of Microbiology at the Heinrich-Heine-
University Düsseldorf (laboratory of Prof. C.P. Hollenberg)
1993 Habilitation in Microbiology
1993-2000 Privatdozent at the Institute of Microbiology at the Heinrich-Heine-University
Düsseldorf (laboratory of Prof. C.P. Hollenberg)
1996-1997 Substituting Professorship (C3) for Molecular Yeast Physiology at the Institute
of Microbiology at the Heinrich-Heine-Universität Düsseldorf
2000-2002 Professorship (C3) for ***Fermentation Technology*** at the University of
Hohenheim
since 2003 Professorship (C4; "catedratico") for ***Genetics*** at the University of Osnabrück,

Fellowships and Awards

1986-1988 Research Fellowship of the Alberta Heritage Foundation for Medical Research

Research interests

Mechanisms and components of signal transduction ensuring yeast cell integrity. Investigation of regulatory networks, especially in relation to cytokinesis. Basic and applied research in yeast genetics and physiology, including several non-*Saccharomyces* yeasts. Genetic characterization of the wine yeast *Hanseniaspora uvarum*.

Selected recent publications (peer reviewed, research papers only)

- Kock, C., Arlt, H., Ungermann, C., Heinisch, J.J. (2016) Yeast cell wall integrity sensors form specific plasma membrane microdomains important for signalling. *Cell. Microbiol.* **18**: 1251-1267.
- Rippert, D., Heinisch, J.J. (2016) Investigation of the role of four mitotic septins and chitin synthase 2 for cytokinesis in *Kluyveromyces lactis*. *Fungal Genet. Biol.* **94**: 69-78.
- Schmitz, H.P., Jendretzki, A., Jendretzki, J., Wiechert, J., Heinisch, J.J. (2015) Identification of the Dck1/Lmo1 complex as a regulator of the small GTPase Rho5 in *Saccharomyces cerevisiae*. *Mol. Microbiol.* **96**, 306-324.
- Rippert, D., Heppeler, N., Albermann, S., Schmitz, H.P., Heinisch, J.J. (2014) Regulation of cytokinesis in the milk yeast *Kluyveromyces lactis*. *Biochim. Biophys. Acta - Mol. Cell Res.* **1843**: 2685-2697.
- Backhaus, K., Rippert, D., Heilmann, C.J., Sorgo, A.G., de Koster, C.G., Klis, F.M., Rodicio, R., Heinisch J.J. (2013) Mutations in the SNF1 complex genes affect yeast cell wall strength. *Eur. J. Cell Biol.* **92**: 383-395.
- Alsteens D., Dupres V., Yunus S., Latgé J.P., Heinisch J.J., Dufrêne Y.F. (2012) High-resolution imaging of chemical and biological sites on living cells using peak force tapping atomic force microscopy. *Langmuir* **49**: 16738-16744.
- Dupres, V., Dufrêne, Y. and Heinisch, J.J. (2010) Measuring cell wall thickness in living yeast cells using single molecular rulers. *ACS Nano* **4**: 5498-5504.
- Heinisch, J.J., Dupres, V., Wilk, S., Jendretzki, A., and Dufrêne, Y.F. (2010): Single-molecule atomic force microscopy reveals clustering of the yeast plasma-membrane sensor Wsc1. *PlosOne* **5**: e11104.
- Dupres, V., Alsteens, D., Wilk, S., Hansen, B., Heinisch, J. J., and Dufrene, Y. F. (2009). The yeast Wsc1 cell surface sensor behaves like a nanospring *in vivo*. *Nat Chem Biol* **5**: 857-862.
- Jendretzki, A., Ciklic, I., Rodicio, R., Schmitz, H. P., and Heinisch, J. J. (2009). Cyk3 acts in actomyosin ring independent cytokinesis by recruiting Inn1 to the yeast bud neck. *Mol Genet Genomics* **282**: 437-451.
- Rodicio, R., Buchwald, U., Schmitz, H.-P. and Heinisch, J.J. (2008): Dissecting sensor functions in cell wall integrity signalling in *Kluyveromyces lactis*. *Fung. Genet. Biol.* **45**: 422-435.

List of PhD-projects (last 10 years)

Finished

- Markus Emili (2006) Effekt der Überproduktion von Enzymen des Glucosestoffwechsels auf das Wachstum und die Alkoholbildung in der Hefe *Saccharomyces cerevisiae*; Universität Hohenheim.
- Ivan Ciklic (2007): Studies on the essential *YNL152w* open reading frame in *Saccharomyces cerevisiae*. Universität Osnabrück.
- Arne Jendretzki (2010): Characterization of the essential role of *Ynl152/Inn1* in cell division in *Saccharomyces cerevisiae*. Universität Osnabrück.
- Frauke Bink (2010): Genetische und physiologische Untersuchungen der natürlichen Weinhefe *Kloeckera apiculata (Hanseniaspora uvarum)*. Universität Osnabrück.
- Ulf Buchwald (2010): Untersuchungen zur Bedeutung homologer und heterologer Arf-Proteine und ihrer Effektoren in *Saccharomyces cerevisiae*. Universität Osnabrück.
- Sabrina Wilk (2010): Untersuchungen zur Bedeutung der Zellwandsensoren in der Regulation der Zellintegrität von *Saccharomyces cerevisiae*. Universität Osnabrück.
- Nele Heppeler (2011): Comparative analyses of cell wall integrity signaling and cytokinesis regulation in the yeasts *Saccharomyces cerevisiae* and *Kluyveromyces lactis*; Universität Osnabrück.
- Janina Wittland (2012): Charakterisierung der physiologischen Bedeutung und der Wechselwirkungen der Sensoren des Zellintegritätswegs der Hefe *Saccharomyces cerevisiae*; Universität Osnabrück.
- Katja Backhaus (2013): Crosstalk between glucose and cell integrity signaling pathways in *Saccharomyces cerevisiae*; Universität Osnabrück/Universidad de Oviedo.
- Sascha Meyer (2014): Microcompartmentalization of cell wall integrity signaling in *Kluyveromyces lactis*; Universität Osnabrück/Universidad de Oviedo.
- Christian Kock (2016): Microcompartmentation of cell wall integrity sensors in *Saccharomyces cerevisiae*; Universität Osnabrück.
- Dorthe Rippert (2016): Crosstalk of signaling pathways for cell wall integrity, cytokinesis and glucose metabolism in the milk yeast *Kluyveromyces lactis*; Universität Osnabrück.
- Anne-Kathrin Langenberg (2016): Genetische und physiologische Charakterisierung von *Hanseniaspora uvarum*; Universität Osnabrück.

In progress

- Melanie Wieschebrock (2016): Der Einfluss alternativer Hefen auf die Aromabildung in Weizenteigen; Universität Osnabrück (defense scheduled for October/November 2016).
- Severin Schweisthal (2017): Comparative analyses of eisosome function in cell surface properties of the yeasts *Saccharomyces cerevisiae* and *Kluyveromyces lactis*. Universität Osnabrück (defense scheduled for September 2017).
- Carolin Sterk (2018): The role of the *Dck1/Lmo1/Rho5* complex in oxidative stress signaling in *Saccharomyces cerevisiae*. Universität Osnabrück (defense expected in spring 2018).

External funding of the last 5 years

- 2010-2014 Funding of 2 PhD students from the Forschungsring des Deutschen Weinbaus (FDW)
- 2010-2013 Project leader within the graduate school "Membranes and cellular communication".
- 2010-2013 Coordinator of the IPID ("International Promovieren in Deutschland") program between the Universities of Oviedo (Spain) and Osnabrück; financed by the DAAD
- 2011-2014 Project leader in the SFB 944 "Physiology and Dynamics of Cellular Microcompartments"