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CURRICULUM VITAE

Professional positions:

1969-1972: PhD Candidate with O. Hoffmann-Ostenhof, Dept. of General Biochemistry, University of Vienna
1972-1974: Postdoctoral fellow with K. Gersonde, University of Kiel and Technical University of Aachen (RWTH), Germany
1979/1980: Guest scientist with Shmuel Shaltiel, The Weizman Institute, Rehovot, Israel
1972-1986: Assistant Professor of Biochemistry, Department of General Biochemistry (Chairman: Prof. O. Hoffmann-Ostenhof and later Prof. H. Ruis) of Vienna University
1986-1991: Associate Professor of Genetics, Department of Microbiology and Genetics (Chairman: Prof. R.J. Schweyen), Vienna University
1988: Tenure at Vienna University
1991 - 2012: Full Professor of Molecular Genetics, University of Salzburg
2012 - : Professor Emeritus, University of Salzburg

Honors and Awards received:

1982: Habilitation in Biochemistry, University of Vienna
1991: Habilitation in Genetics, University of Vienna
1982: Award of a Max Kade Fellowship to perform postdoctoral studies with Ben Hall (Seattle) and with Kelly Tatchell (Philadelphia)
2011: Election to the rank of AAAS fellow

Service and Recognition:

Associate Editor: Frontiers in Oncology, Section Molecular and Cellular Oncology (since December, 2015)
Managing editor: Frontiers in Bioscience (since May, 2014)
Member of the editorial board: International Archives of Allergy and Immunology (past), Applied and Environmental Microbiology (past), FEMS Yeast Research (ongoing), Experimental Gerontology (ongoing), Mechanisms of Aging and Development (ongoing), Microbial Cell (ongoing), Fermentation (since 2014), biomolecules (since 2015).
Meetings organized: I have organized 8 International Meetings and Congresses, the last ones were the Third International Meeting on Yeast Apoptosis (IMYA) in Salzburg (2004), and the International Aging Research Symposium, Salzburg (2012).
Many invited seminars at Universities and at International Congresses, the latest ones at the 9th IMYA, Rome, Italy, 2012, at the International Meeting of Yeast Genetics and Molecular Biology, Frankfurt, 2013 and Prague (2017), at the University of Cambridge (England) and at the University of Kent in Canterbury (England) (2013).

Peer-reviewed research publications: more than 200.

Patents: Co-inventor of 8 key patents in molecular allergology and yeast biotechnology.

Current research interests and expertise in biogerontology:

The major present activity (starting around 1997) is yeast mother cell-specific **aging** in relation to oxidative stress, mitochondrial functions and oxygen toxicity.

Funding for this research project has been supplied through three projects granted by the FWF, Austria between 1997 and present and two large collaborative projects which started at 1st January, 2005. These are

„Proliferation, Differentiation and Cell Death during Cellular Aging“ (granted by FWF for a period of 5 +1 years, coordinator: Pidder Jansen-Dürr, Institute of Biomedical Aging Research, Austrian Academy of Sciences, Innsbruck), and

„Role of Mitochondria in Conserved Mechanisms of Ageing (MIMAGE)“ (IP granted by the EU for a period of 5 years, coordinator: Heinz Osiewacz, University of Frankfurt).

We have shown that old yeast mother cells undergo apoptosis triggered by reactive oxygen species originating from the mitochondria. This finding has far-reaching implications and is being further investigated.

Genome wide transcript analysis on DNAmicroarrays identified about 600 yeast genes which are differentially expressed in senescent cells. This gene list shows a large overlap with lists obtained from apoptotic yeast cells. Systematic phenotypic analysis of these genes revealed a number of genes which on deletion lead to resistance of the cells to oxidative stress and also to a substantial increase in lifespan. One of those genes codes for a mitochondrial ribosomal protein. Our results clearly show that it must have a second function in growth and aging regulation.

The other genes, which are now under active investigation, code for TCTP (translationally controlled tumor protein), a highly conserved eukaryotic gene, and for a newly discovered yeast NADPH oxidase (YNO1, systematic name YGL160w). TCTP (yeast name: MMI1, systematic name YKL056c) under conditions of heat stress translocates to the mitochondria and to the nucleus where it associates with the proteasome and regulates (inhibits) its activity under stress conditions.

Superoxide produced by the Yno1 NADPH oxidase may be a second messenger for growth control regulating remodeling of the actin cytoskeleton. This is the first and only NADPH oxidase of *S. cerevisiae*. Overexpression of this gene causes apoptosis. An in depth study of YNO1 in relation to the actin cytoskeleton and pseudohyphal growth is the main topic of the ongoing research project granted by FWF starting in April, 2014.

„Expression and Function of Yno1, a yeast NADPH oxidase“ (grant number P26713-B20).

This research is done in collaboration with Ian Dawes (Sydney), William Burhans (Buffalo), Campbell Gourlay (Kent) and Jiri Hasek (Prague).