



Curriculum Vitae Professor Dr Franz-Ulrich Hartl



Name: Franz-Ulrich Hartl

Date of birth: 10 March 1957

Image: Susanne Vondenbusch-Teetz | Max Planck Institute of Biochemistry, Germany

Research Priorities: Proteins, protein folding, chaperones, heat shock proteins, causes of neurological diseases such as Parkinson's, dementia, Chorea Huntington

Franz-Ulrich Hartl is a biochemist. His research is focused on proteins, particularly protein folding. He was able to show that the folding is facilitated by certain “helper molecules”, called chaperones. As incorrectly folded proteins can also cause neurological diseases, the results of Hartl's research are of great significance for an improved understanding of the genesis of neurodegenerative as well as geriatric diseases and could pave the way to new therapy approaches.

Academic and Professional Career

- since 2002 Managing Director, Max Planck Institute of Biochemistry, Martinsried, Germany
- since 1997 Director, Max Planck Institute of Biochemistry, Martinsried, Germany
- 1994 - 1997 Professor, Howard Hughes Medical Institute, Chevy Chase, USA
- 1993 - 1997 Professor of Cell Biology and Genetics, Weill Cornell Graduate School of Medical Sciences and Member, Programme in Cellular Biochemistry and Biophysics, Memorial Sloan Kettering Cancer Center (MSKCC), Cornell University, New York City, USA
- 1991 - 1992 Associate Professor of Cell Biology and Genetics, Weill Cornell Graduate School of Medical Sciences, Cornell University, New York City, USA
- 1990 - 1991 Assistant Professor, Department of Physiological Chemistry, Ludwig-Maximilians-Universität München (LMU), Munich, Germany
- 1990 Habilitation, LMU München, Munich, Germany
- 1989 - 1990 Postdoctoral Fellow, University of California, Los Angeles, USA

- 1987 - 1989 Head of Working Group, Department of Physiological Chemistry, LMU München, Munich, Germany
- 1985 - 1986 Postdoctoral Fellow, Department of Physiological Chemistry, LMU München, Munich, Germany
- 1985 Doctorate, University of Heidelberg, Heidelberg, Germany
- 1982 State Examination for Medicine, University of Heidelberg, Heidelberg, Germany

Functions in Scientific Societies and Committees

- 2003 - 2005 President, (German) Society for Biochemistry and Molecular Biology (GBM), Frankfurt am Main, Germany
- 2001 - 2003 Vice President, GBM, Frankfurt am Main, Germany
- 1991 - 1992 Member, Programme in Cellular Biochemistry and Biophysics, MSKCC, Cornell University, New York City, USA

Project Coordination, Membership in Collaborative Research Projects

- since 2022 Head, Advanced Grant “INSITUFOLD – In situ analysis of chaperone mediated protein folding and stability”, European Research Council (ERC)
- since 2019 Participating Scientist, Munich Cluster for Systems Neurology (SyNergy), Clusters of Excellence (ExStra), German Research Foundation (DFG), Germany
- since 2016 Head, Subproject “Mechanism of chaperonin-mediated protein folding and assembly”, Collaborative Research Centre (SFB) 1035, DFG, Germany
- 2008 - 2018 Applicant, Project “Integrated in vivo, in vitro and in silico studies of protein misfolding diseases”, DFG, Germany
- 2008 - 2014 Head, Subproject “Chaperone interactions with ribosome-bound nascent chains: Role in protein folding”, Research Unit (FOR) 967, DFG, Germany
- 2003 - 2008 Applicant, Project “Heat shock protein-mediated antigen presentation”, DFG, Germany
- 2001 - 2012 Head, Subproject “Chaperonin-mediated protein folding”, SFB 594, DFG, Germany
- 2001 - 2012 Head, Subproject “Mechanisms of proteotoxicity in neurodegenerative diseases”, SFB 596, DFG, Germany
- 2001 - 2009 Head, Subproject “Toxicity mechanisms of SCA3 and its modulation by molecular chaperones”, FOR 427, DFG, Germany

2001 - 2007 Head, Subproject "Chaperone-mediated folding of cytoskeletal proteins", SFB 413, DFG, Germany

Honours and Awarded Memberships

2023 Schleiden Medal, German National Academy of Sciences Leopoldina

2022 Nakasone Prize, Human Frontier Science Program, Strasbourg, France

2021 Bavarian Maximilian Order for Science and Art, Free State of Bavaria, Germany

2019 Paul Ehrlich and Ludwig Darmstaedter Prize, Association of Research-Based Pharmaceutical Companies, Berlin and Federal Ministry of Health, Germany

2016 Ernst Schering Prize, Schering Foundation, Berlin, Germany

2016 Albany Medical Center Prize, Albany Medical Center, University at Albany and State University of New York (UAlbany SUNY), Albany, USA

2012 Shaw Prize in Life Science and Medicine, Shaw Prize Foundation Limited, Hong Kong, China

since 2012 Fellow, American Academy of Microbiology, USA

2011 Heinrich Wieland Prize, Boehringer Ingelheim Foundation, Mainz, Germany

2011 Massry Prize, Shaul Massry Foundation, Los Angeles, USA

2011 Lasker Award for Basic Medical Research, Lasker Foundation, New York City, USA

since 2011 Foreign Member, National Academy of Sciences, USA

2011 Cross of Merit of the Order of Merit, Federal Republic of Germany

2010 Dr H.P. Heineken Prize for Biochemistry and Biophysics, Royal Netherlands Academy of Arts and Sciences, The Netherlands

2010 Cynthia Ann Chan Memorial Lecture, University of California (UC) Berkeley, Berkeley, USA

2010 van Gysel Prize for Biomedical Research, Académie royale de Médecine de Belgique, Belgium

since 2010 Member, American Association for the Advancement of Science (AAAS), USA

2009 Otto Warburg Medal, GBM, Frankfurt am Main, Germany

since 2008 Honorary Member, Japanese Biochemical Society (JBS), Japan

2008 Louisa Gross Horwitz Prize, Columbia University, New York City, USA

2008 Lewis S. Rosenstiel Award, Brandeis University, Waltham, USA

2007 Wiley Prize in Biomedical Sciences, Wiley Foundation, New York City, USA

- 2006 Körber European Science Prize, Körber Foundation, Hamburg, Germany
- 2006 Stein and Moore Award, Protein Society, Canyon Country, USA
- 2005 Ernst Jung Prize for Medicine, Jung Foundation for Science and Research, Hamburg, Germany
- 2004 Gairdner Foundation International Award, Toronto, Canada
- since 2004 Member, Bavarian Academy of Sciences, Munich, Germany
- 2003 Feldberg Prize, Foundation for Anglo-German Scientific Exchange, London, UK
- since 2002 Member, German National Academy of Sciences Leopoldina
- 2002 Gottfried Wilhelm Leibniz Award, DFG, Germany
- since 2000 Foreign Honorary Member, American Academy of Arts and Sciences, USA
- 2000 Wilhelm Vaillant Research Prize, Wilhelm Vaillant Stiftung, Munich, Germany
- 1999 Academy Award, Berlin-Brandenburg Academy of Sciences and Humanities, Germany
- since 1998 Member, European Molecular Biology Organization (EMBO)
- 1989 - 1990 Fellowship, DFG
- 1997 Foreign Member, North Rhine-Westphalian Academy of Sciences, Humanities and the Arts, Düsseldorf, Germany
- 1997 Honorary Professor, LMU München, Munich, Germany
- 1997 Lipmann Award, American Society of Biochemistry and Molecular Biology, USA
- 1996 Vinci Award, Moët Hennessy-Louis Vuitton (LVMH) Science for Art competition, Paris, France
- 1995 Appointment to William E. Snee Chair, MSKCC, New York City, USA
- 1994 Howard Hughes Appointment, Howard Hughes Medical Institute, Chevy Chase, USA

Research Priorities

Franz-Ulrich Hartl is a biochemist. His research is focused on proteins, particularly protein folding. He was able to show that the folding is facilitated by certain “helper molecules”, called chaperones. As incorrectly folded proteins can also cause neurological diseases, the results of Hartl’s research are of great significance for an improved understanding of the genesis of neurodegenerative as well as geriatric diseases and could pave the way to new therapy approaches.

Proteins have many functions within the cell. However, they can only fulfil these functions once they have folded themselves into a complex three-dimensional structure. If mistakes occur during the folding, this can lead to neurological diseases such as Parkinson’s or dementia. Franz-Ulrich

Hartl discovered that a given cell employs “helper molecules” supposed to prevent misfolding. These chaperones interact with proteins and support correct folding. The exact mechanism has yet to be understood.

Chaperones are also called heat shock proteins, because they are more readily formed under stress and during fevers – conditions that lead more often to misfolding of proteins. Together with his team, Franz-Ulrich Hartl was able to explain the function and structure of heat shock proteins (Hsp70, Hsp60), that are vital to virtually all cells. One such protein occurs in the eye lens and belongs to the chaperons. It ensures that the protein mixture in the lens remains clear and translucent. If the mechanism fails, the lens becomes cloudy, and cataracts develop. Misfolding generally plays a key role in ageing and the onset of geriatric diseases. Franz Ulrich Hartl aims to find out why chaperone activity decreases in old age and how it can be increased again.

Franz-Ulrich Hartl and his team also investigate the role of chaperones in relation to the nervous disorder Chorea Huntington or Parkinson’s disease. The results of his research provide insights into underlying causes of diseases, offer opportunities for new therapies, and are important for the biotechnological manufacture of proteins.