

Biozentrum Lectures

Molecular chaperones in protein folding and proteostasis control

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Hörsaal 1, Pharmazentrum
Klingelbergstrasse 50/70, Basel

Molecular
Life Sciences.

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Protein folding is a fundamental process in biology, as it is the final step in the realization of genetic information at the level of functional molecules. The past two decades have witnessed a paradigm shift in our understanding of protein folding in the cell. While the three-dimensional structures of functional proteins are determined by their amino acid sequences, it has become clear that in the crowded cellular environment many proteins depend on molecular chaperones to fold efficiently and at a biologically relevant time scale.

Assistance in protein folding is provided by different types of chaperones which act to prevent misfolding and aggregation. Errors in folding can result in the accumulation of misfolded and aggregated proteins which cause neurodegenerative diseases such as Parkinson's and Huntington's disease. The Biozentrum Lecture will focus on the cellular machinery of molecular chaperones and the mechanisms cells use to protect themselves against toxic protein aggregation.



F. Ulrich Hartl is Professor of Biochemistry and one of the Directors at the Max Planck Institute of Biochemistry in Martinsried, Germany. Prof. Hartl studies the process of protein folding in the cytosol of bacteria and eukaryotic cells. He initiated research that resulted in the demonstration of the basic role of molecular chaperones in protein folding and has received numerous prestigious awards for his groundbreaking discoveries, including the Wiley Prize (2007), the Rosenstiel Award (2008), the Horwitz Prize (2009), the Order of Merit of the Federal Republic of Germany (2010), the Lasker Award (2011) and the Shaw Prize (2012).

Prof. Hartl studied medicine and received his doctoral degree in Biochemistry from the University of Heidelberg, Germany. Following postdoctoral research at the Institute of Physiological Chemistry, University of Munich, and the University of California at Los Angeles (UCLA), he was promoted first to Associate Professor and then Full Professor at Cornell University, New York. He also became an Associate Investigator of the Howard Hughes Medical Institute. In 1997 he returned to Germany to head the Department of Cellular Biochemistry at the Max Planck Institute of Biochemistry. Furthermore, Prof. Hartl was Vice President and President of the German Society for Biochemistry and Molecular Biology and is a member of several scientific societies.

The Biozentrum Lectures are organized by the Biozentrum, University of Basel. The lectures present speakers who have made outstanding contributions in the field of Life Sciences. The goal of the series is to highlight the work of these individuals in an event that brings together researchers from the entire community in Basel and its surroundings.

Past speakers in the Biozentrum Lectures series:

Elizabeth Blackburn

Nobel Prize Laureate
Professor, University of California, San Francisco

Andrej Sali

Vice Chair, Department of Bioengineering and Therapeutic Sciences
Professor, University of California, San Francisco

James E. Rothman

Chairman, Department of Cell Biology
Professor, Department of Chemistry, Yale University

Thomas Walz

Investigator, Howard Hughes Medical Institute
Professor, Department of Cell Biology, Harvard Medical School

Austin Smith

Director, Wellcome Trust Centre for Stem Cell Research,
University of Cambridge

Tim Hunt

Cancer Research UK,
Clare Hall Laboratories, South Mimms, Hertfordshire

Laurent Keller

Department of Ecology and Evolution,
University of Lausanne

Peter Carmeliet

Director of the VIB – Vesalius Research Center,
University of Leuven, Belgium