Leopoldina
Nationale Akademie
der Wissenschaften

Curriculum Vitae Professor Dr Rudolf Jaenisch

Name: **Rudolf Jaenisch**
Born: **22 April 1942**

Research Priorities: Molecular biology, stem cell research, cancer research, genetics, therapeutic cloning

Rudolf Jaenisch is a German molecular biologist and geneticist. He developed the first transgenic mouse and is considered a pioneer of transgenic research. His mouse model enabled researchers to study the causes of several diseases. It also enabled them to conduct fundamental research about the role of DNA-modifications, imprinting, and the inactivation of the X-Chromosome.

Academic and Professional Career

since 1984	Founding Member, Whitehead Institute for Biomedical Research and Professor of Biology, Massachusetts Institute of Technology (MIT), Cambridge, USA
1977 - 1984	Director, Section Tumor Virology, Heinrich Pette Institute, Hamburg, Germany
1976 - 1977	Associate Research Professor, Salk Institute for Biological Studies, La Jolla, USA
1973 - 1976	Assistant Research Professor, Salk Institute for Biological Studies, La Jolla, USA
1972	Research Stay, Institute for Cancer Research, Philadelphia, USA
1970 - 1972	Postdoc, Princeton University, Princeton, USA
1968 - 1970	Postdoc, Max Planck Institute for Biochemistry, Munich, Germany
Until 1967	Studies in Medicine, Ludwig-Maximilians-Universität (LMU) Munich, Germany

Functions in Scientific Societies and Committees

2014 - 2015	President, International Society for Stem Cell Research (ISSCR)

Project Coordination, Membership in Collaborative Research Projects

2018 - 2022	Host, Project “The Role of Microglia in Alzheimers Disease”, German Research Council (DFG), Germany
2004	Participating Researcher, Project “Characterisation of the Reprogrammability of neural precursor cells” („Charakterisierung der Reprogrammierungsfähigkeit neuraler Vorläuferzellen“), DFG, Germany

Honours and Awarded Memberships

2015	March of Dimes Prize in Developmental Biology, March of Dimes, Arlington, USA
2014	Otto Warburg Medal, Gesellschaft für Biochemie und Molekularbiologie (GBM), Frankfurt/Main, Germany
2013	Benjamin Franklin Medal, The Franklin Institute, Philadelphia, USA
2013	Academy Medal for Distinguished Contributions in Biomedical Science, New York Academy Medicine, New York City, USA
2013	Passano Award, Passano Foundation, Baltimore, USA
2011	Wolf-Preis in Medicine, Wolf Foundation, Herzlia Pituach, Israel
2011	Warren Triennial Prize, Massachusetts General Hospital, Boston, USA
2010	National Medal of Science, USA
2010	Great Cross with Star, Order of Merit, Federal Republic of Germany
2009	Ernst Schering Prize, Schering Foundation, Berlin, Germany
2009	Cozzarelli Prize, Proceedings, National Academy of Sciences, USA
2008	Massry Prize, Meira and Shaul Massry Foundation, Los Angeles, USA
2007	Vilcek Prize in Biomedical Science, Vilcek Foundation, New York City, USA
2006	Max Delbrück Medal, Max Delbrück Center for Molecular Medicine, Helmholtz-Association, Berlin, Germany
since 2004	Member, German National Academy of Science Leopoldina, Germany
since 2003	Member, National Academy of Sciences, USA
2003	Charles Rodolphe Brupbacher Prize for Cancer Research, Charles Rodolphe Brupbacher Foundation, Vaduz, Fürstentum Liechtenstein
2002	Robert Koch Award, Federal Ministry of Health (BMG), Federal Republic of Germany
2001	Gruber Prizes in Genetics, The Gruber Foundation, New Haven, USA

1996	Boehringer Mannheim Prize for Molecular Bioanalytics, Boehringer Mannheim, Mannheim, Germany
since 1992	Member, American Academy of Art and Sciences, USA
since 1985	Member, European Molecular Biology Organization (EMBO)

Research Priorities

Rudolf Jaenisch is a German molecular biologist and geneticist. He developed the first transgenic mouse and is considered a pioneer of transgenic research. His mouse model enabled researchers to study the causes of several diseases. It also enabled them to conduct fundamental research about the role of DNA-modifications, imprinting, and the inactivation of the X-Chromosome.

With his research, Rudolf Jaenisch was able to show that external DNA can be integrated into the germ line of a mouse embryos. With this insertion mutagenesis, he was the first to identify the genes central to embryo development. He earned his biggest merits with his research on epigenetic mechanisms of gene regulation that are vital for embryonal development and that - if misdirected - can lead to the development of diseases. This research is of especial importance as it pertains to embryonal stem cell research and therapeutic cloning. Here, Rudolf Jaenisch predominately studies the processes that exceed the purely genetic information contained in the genetic material, called DNA. To Science, these are known as “epigenetic mechanisms”. They encompass, for example, the processes of a developing embryo, where embryonal stem cells can potentially differentiate themselves into any desired cell of the body.

The research’s goal is the isolation of suitable embryonal stem cells for the therapy of diseases that so far cannot be treated or can only be treated unsatisfactorily. With his research, he significantly progressed the understanding of diseases like cancer, Alzheimer’s disease, or ALS (amyotrophic lateral sclerosis) und delivered impulses for the development of new therapeutical strategies.

Moreover, his mouse model enabled fundamental research to study the role of DNA-modifications, imprinting, and the inactivation of the X-chromosome.