Leopoldina
Nationale Akademie
der Wissenschaften

Curriculum Vitae Professor Dr Thomas Tuschl

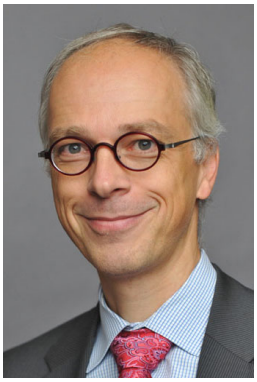

Image: Markus Scholz | Leopoldina

Name: **Thomas Tuschl**
Date of birth: **1 June 1966**

Research Priorities: functional genome analysis, RNA interference (RNAi), switching off genes, "short interfering RNA" (siRNA), microRNA (miRNA), silencing genes, hereditary diseases

Thomas Tuschl is a molecular biologist. He is researching the human genome and has developed the method of RNA interference for human cells. The method is an ideal tool for functional genome analysis and has enabled the development of new treatments for hereditary diseases.

Academic and Professional Career

2005 - 2018	Investigator, Howard Hughes Medical Institute, Chevy Chase, USA
since 2003	Professor and Laboratory Director, Rockefeller University, New York City, USA
1999 - 2002	Leader, Research Group, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany
1995 - 1999	Postdoctoral Fellow, Massachusetts Institute of Technology (MIT)/Whitehead Institute, Cambridge, USA
1995	Doctorate, Max Planck Institute for Experimental Medicine, Göttingen, Germany
1992 - 1995	PhD Student, Max Planck Institute for Experimental Medicine, Göttingen, Germany
1992	Diploma in Chemistry, University of Regensburg, Germany
1989	Degree in Chemie (Maîtrise in chemistry), Université Joseph Fourier Grenoble I (since 2016: Université Grenoble Alpes), Grenoble, France

Project Coordination, Membership in Collaborative Research Projects

2010 - 2012	Host, Research Fellowship, “Structural studies on mRNA recognition by FMRP and TDP-43, two RNA-binding proteins associated with neuronal diseases”, German Research Foundation (DFG)
2009 - 2014	Subproject, “The role of microRNA in body weight maintenance”, Clinical Research Group 218, DFG
2009 - 2012	Host, Research Fellowship, “Characterization of post-transcriptional regulation of gene expression in heart diseases”, DFG
2008 - 2011	Host, Research Fellowship, “Expression and function of ‘hnRNP K - miRNA - mRNA – complexes’ in acute myeloid and lymphatic leukaemia in childhood”, DFG

Honours and Awarded Memberships

2014	Finalist, European Inventor Award, European Patent Office
2012	NIH Director’s Transformative Research Project Award, National Institutes of Health (NIH), Bethesda, USA
since 2009	Member, German National Academy of Sciences Leopoldina, Germany
2008	Ernst Jung Prize, Jung Foundation for Science and Research, Hamburg, Germany
2007	Max Delbrück Medal, Max-Delbrück Center for Molecular Medicine, Berlin, Germany
2007	Karl Heinz Beckurts Prize, Karl Heinz Beckurts Foundation, Zeuthen, Germany
2005	Ernst Schering Prize, Ernst Schering Foundation, Berlin, Germany
2005	Meyenburg Prize, Meyenburg Foundation, Heidelberg, Germany
2005	Dr. Albert Wander Gedenk Prize, Bern, Switzerland
2006	Molecular Bioanalytics Prize, (German) Society for Biochemistry and Molecular Biology, Germany and Roche Diagnostics, Rotkreuz, Schweiz
2003	Mayor’s Award for Excellence in Science and Technology, New York City, USA
2003	Wiley Prize in Biomedical Sciences, The Wiley Foundation, Hoboken, USA
2003	Newcomb Cleveland Prize, American Association for the Advancement of Science, USA
2002	Eppendorf Award for Young European Investigators, Eppendorf SE, Hamburg, Germany
2002	Prize for Chemistry and Physics, Otto Klung Weberbank, Berlin, Germany
2002	Fellowship, Chemical Industry Fund, German Chemical Industry Association (VCI), Germany

2001	Springer Young Investigator Award, German-French Society for Cell Biology
2001	Young Investigator, European Molecular Biology Organization
1999	BioFuture Prize, Federal Ministry of Education and Research, Germany
1997 - 1998	Merck/MIT Postdoctoral Fellowship, Cambridge, USA
1995 - 1997	Fellowship, DFG, Germany

Research Priorities

Molecular biologist Thomas Tuschl is researching the human genome. He has developed the method of RNA interference for human cells. The method is an ideal tool for functional genome analysis and has been developed over the last 15 years into a new therapy for treating hereditary diseases.

Since the discovery of the genome, scientists have tried to switch off individual genes in order to understand their function better. Thomas Tuschl has achieved this with the RNA interference (RNAi) method. The phenomenon was previously known from worms and flies. Genes could be immobilised by injecting double-stranded RNA molecules into the animals. Thomas Tuschl discovered that RNA (ribonucleic acid) is firstly broken into short pieces, known as “short interfering RNA” (siRNA), and these disable the gene.

Using these siRNAs Thomas Tuschl could then also switch off human genes in cell cultures. He has thus made RNA interference useful for genome research. Researchers around the world are studying the function of genes in this way. New drugs can be developed on the basis of RNA interference. For example drugs are being clinically researched for a hereditary disease (amyloidosis), in which tiny protein threads damage the organs.

Thomas Tuschl is further researching the regulatory functions of RNA and its variant of microRNA (miRNA). MicroRNAs regulate gene expression and can silence genes. Tuschl wishes to explain the connections between the silencing of genes and hereditary diseases. With his team he is searching for microRNAs which could be linked to diseases. Depending on which messenger RNA affects the miRNA, it can promote or inhibit tumour development for example. Recently he has also been researching the functions of mRNA-binding proteins and developing methods for determining their binding sites.