



Curriculum Vitae Professor Dr Helga Rübsamen-Schaeff



Image: People Pictures

Name: Helga Rübsamen-Schaeff
Date of birth: 13 January 1949

Research Priorities: Infectious diseases, antiviral medications and antibiotics, development of therapeutic drugs, new active ingredients (e.g. against herpes, cytomegalovirus, HIV, hepatitis B, and multi-resistant bacteria), oncogenes

Helga Rübsamen-Schaeff is a chemist and a biochemist. As a manager in a multinational large pharma company she headed for 13 years the research department for infectious diseases before successfully founding a biopharmaceutical company, building it and leading it as CEO. Early on in her academic research career, she focused on viruses which carry oncogenes enabling them to transform a normal cell into a cancer cell. She is particularly interested in researching and developing antiviral medications against viruses (e.g. herpes viruses, cytomegalovirus, HIV, and hepatitis B) as well as new antibiotics against multi-resistant bacteria. Helga Rübsamen-Schaeff is an active supporter of close cooperations between academic research and industry.

Academic and Professional Career

- since 2021 Member, Supervisory Board, AiCuris Anti-infective Cures AG, Wuppertal, Germany
- 2015 - 2021 Chairperson, Scientific Advisory Board, AiCuris Anti-infective Cures, Germany
- 2006 - 2015 Founder and CEO, AiCuris Anti-infective Cures, Wuppertal, Germany
- 2001 - 2006 Senior Vice-President, Anti-infective Research, Bayer AG, Leverkusen, Germany
- 1994 - 2001 Head, Anti-viral Research, Bayer AG, Leverkusen, Germany
- since 1988 Professor of Biochemistry and Virology, Johann Wolfgang Goethe-Universität, Frankfurt am Main, Germany
- 1987 - 1993 Scientific and Managing Director, Chemotherapeutic Research Institute Georg-Speyer-Haus, Frankfurt am Main, Germany

- 1985 Visiting Scholar, Harvard University, Cambridge, USA
- 1983 Visiting Scholar, Harvard University, Cambridge, USA
- 1983 Habilitation, Johann Wolfgang Goethe-Universität, Frankfurt am Main, Germany
- 1982 - 1986 Head, Department "Immune Therapy", Chemotherapeutic Research Institute Georg-Speyer-Haus, Frankfurt am Main, Germany
- 1973 - 1979 Postdoctoral Fellow, University of Münster, Münster, Germany, Cornell University, Ithaca, USA and Justus Liebig University Giessen, Giessen, Germany
- 1973 Doctorate (pHD), University of Münster, Münster, Germany
- 1967 - 1971 Degree in Chemistry, University of Münster, Münster, Germany

Functions in Scientific Societies, Committees and Supervisory Boards

- 2015 - 2017 Member, Supervisory Board, University Hospital Bonn (UKB), Bonn, Germany
- since 2015 Member, Supervisory Board, 4SC AG, Planegg-Martinsried, Germany
- since 2014 Member, Board of Partners and Chairperson of the Research Board, E. Merck KG, Darmstadt, Germany
- since 2014 Member, Supervisory Board, Merck KGaA, Darmstadt, Germany
- 2004 - 2008 Senator, Fraunhofer-Gesellschaft, Munich, Germany
- until 2004 Member, Advisory Board, Deutsches Museum, Munich, Germany
- 2003 - 2012 Member, University Board, University of Vienna, Vienna, Austria
- 2002 - 2012 Member, Jury "German Future Prize, German Federal President's Prize for Technology and Innovation", Germany
- 2002 - 2003 Member, Board of Directors, German Chemical Society (GDCh), Germany
- 2001 - 2007 Member, European Research Advisory Board (EURAB)
- 2000 - 2001 Vice-President, GDCh, Germany
- 1998 - 2000 Member, Board of Directors, Deutsche AIDS-Gesellschaft, Germany
- Member, Scientific Panel on Health, Horizon 2020 Programme, European Union (EU)

Honours and Awarded Memberships

- since 2022 Member, acatech – National Academy of Science and Engineering, Germany
- 2020 Loeffler Frosch Medal, German Society for Virology GfV, Germany
- 2019 Innovation Award, State of North-Rhine Westphalia, Düsseldorf, Germany

- 2018 German Future Prize, German Federal President's Prize for Technology and Innovation
- since 2018 Member, German National Academy of Sciences Leopoldina, Germany
- since 2017 Honorary Member, GDCh, Frankfurt am Main, Germany
- 2015 Distinguished Woman in Chemistry and Chemical Engineering, International Union of Pure and Applied Chemistry (IUPAC)
- 2004 Female Manager of the Year (Mestemacher Prize), Mestemacher Management GmbH, Gütersloh, Germany
- 1995 Cross of Merit 1st Class, Federal Republic of Germany
- 1983 Karl-Winnacker Grant, Hoechst Foundation, Frankfurt am Main, Germany
- 1979 - 1982 Habilitation Fellowship, German Research Society (DFG)
- Member, American Association for the Advancement of Science (AAAS), USA
- Member, German Society for Virology GfV, Germany

Research Priorities

Helga Rübsamen-Schaeff is a chemist and a biochemist. She managed for 13 years the department of infectious disease research in a multinational large pharma company before successfully founding biopharmaceutical company and leading it as CEO. She is particularly interested in researching and developing antiviral medications (e.g. against herpes viruses, cytomegalovirus, HIV, and hepatitis B) as well as new antibiotics against multi-resistant pathogens. In her academic career she investigated genes by which viruses transform normal cells into cancer cells (oncogenes). Helga Rübsamen-Schaeff is an active supporter of a close cooperation between academic research and industry.

Initially, Helga Rübsamen-Schaeff was interested in oncology. She studied biochemical mechanisms of malignant transformation of oncogenic viruses and described several human genes which control cell growth.

Subsequently, Helga Rübsamen Schaeff was the first to isolate HIV strains from patients in Germany and, by doing so, described the virus' variation ability. As part of a global collaboration effort with the World Health Organization (WHO), she worked on the systematic classification of HIV variants. She developed HIV tests and strategies for inhibiting the virus by drugs. On the basis of joint research, two pharmaceutical companies developed drug candidates against HIV.

In subsequent years, she researched therapeutic drugs against the viral hepatitis pathogens B and C, against herpes simplex virus and cytomegalovirus and multiresistant bacteria. In 2006, Helga Rübsamen-Schaeff founded the biopharmaceutical company AiCuris Anti-infective Cures. The

company's main areas of priority are new antiviral and antibacterial agents against life-threatening infectious diseases. A drug against cytomegalovirus reached the market in 2017.

Almost all active ingredients from Helga Rübsamen-Schaeff's research have novel mechanisms of action and inhibit diseases with new chemical molecules. For example, an active ingredient against herpes simplex directly attacks an enzyme of the pathogen which the virus requires in order to multiply. In clinical trials, this drug shows an effect superior to existing medications. Rübsamen-Schaeff also described a new mechanism of action for the inhibition of the hepatitis B virus (the inhibition of the core antigen), which has since become the subject of intensive pharmaceutical research in many companies and academic institutions worldwide.

One of the medications stemming from her research has already been approved and introduced on the market (see above). For this innovation, Helga Rübsamen-Schaeff and her team were awarded the German Future Prize by the Federal President. The medication is an inhibitor of the cytomegalovirus. Human cytomegalovirus (HCMV) is widespread throughout the population and can become very dangerous in all situations in which the immune system is weakened. For people requiring organ transplants, it can cause severe and life-threatening illnesses. The medication allows patients to be treated prophylactically directly following a stem cell transplant, thus protecting them from the dangerous virus. The decisive clinical study was able to demonstrate a survival advantage for those receiving this treatment. A study testing the drug for kidney recipients was successful as well. International studies for treatment of other conditions of immune incompetency including the HIV-infection are under way.

The discovery of new antibiotics is a significant challenge. There is a growing number of infections due to multi-resistant bacteria for which the number of effective antibiotics is shrinking. Thus, an effort was also directed at the discovery of resistance breaking novel antibiotics – again looking for novel modes of action and novel chemical matter.