

Curriculum Vitae

Prof. Dr. Katja Becker

President of the Deutsche Forschungsgemeinschaft

Born 7 March 1965 in Heidelberg

Career History (Selection)

- Since 2000 Full (C4/W3) Professor of Biochemistry and Molecular Biology, University of Giessen
- 2005 - 2006 6-month research visit to Scripps Research Institute, La Jolla, CA, Proteomic Mass Spectrometry Lab, Prof. John Yates III
- 1999 - 2000 Junior Group Leader at the Research Center for Infectious Diseases, University of Würzburg
- 1998 Medical specialisation in Biochemistry
- 1996 Habilitation in Biochemistry, Heidelberg University
- 1994 6-month research visit to Institute of Pathology, Prof. N. H. Hunt, University of Sydney, Australia
- 1993 Licence to practise medicine
- 1993 - 1999 Research associate at Heidelberg University Biochemistry Center
- 1992 - 1993 Medical assistant at Heidelberg University Children's Hospital.
3 months of clinical and research work in Nigeria
- 1990 - 1991 Practical year at University Hospital Basel (internal medicine), Heidelberg University Hospital (surgery) and John Radcliffe Hospital Oxford (paediatrics)
- 1988 - 1989 Research visit to Institute of Pathology, University of Sydney;
clinical work with the Royal Flying Doctor Service, Katherine, NT, Australia
- 1986 - 1988 Dissertation with Prof. Heiner Schirmer at Institute of Biochemistry II, Heidelberg University; title: "Glutathione reductase and its apoenzyme: contributions to the chemotherapy of malaria and the diagnosis of FAD deficiencies" (*summa cum laude*)
- 1984 - 1991 Studies in human medicine, Heidelberg University

Offices and Roles in the Research System

- Since 2020 President of the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation)
- 2021 - 2023 Chair of the Governing Board of the Global Research Council (GRC)
- 2014 - 2019 Vice President of the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation)
- 2009 - 2012 Vice President for Research and Early Career Support, University of Giessen
- 2007 - 2014 Spokesperson for the Bioresources and Biotechnology Section, Giessen Graduate Center for the Life Sciences
- 2004 - 2005 Spokesperson for the interdisciplinary Research Centre for BioSystems, Land Use and Nutrition (IFZ), University of Giessen
- 2018 - 2019 Spokesperson for LOEWE centre DRUID (Novel Drug Targets against Poverty-related and Neglected Tropical Infectious Diseases), part of an initiative by the state of Hesse to promote scientific and economic excellence
- 2014 - 2019 Spokesperson for DFG Priority Programme 1710 "Dynamics of Thiol-based Redox Switches in Cellular Physiology"

Review and Advisory Activities

- 2021 Involvement in the statement "The Need for a One Health Approach to Zoonotic Diseases and Antimicrobial Resistance" for the G7 summit 2022
- 2020 Involvement in the statement "Coronavirus Pandemic – Measures Relevant to Health", Leopoldina (April 2020)
- 2020 Involvement in the statement „Coronavirus Pandemic in Germany: Challenges and Options for Intervention“, Leopoldina (March 2020)
- 2020 - 2023 Chair (ex officio) of the DFG's Interdisciplinary Commission for Pandemic Research
- 2017 - 2018 Member of the German government round table on Internationalisation of Education, Science and Research
- 2016 - 2017 Involvement in the statement on Improving Global Health for the G20 summit 2017
- 2015 - 2017 German representative on the Scientific Committee of the EU COST programme
- 2016 - 2020 Member of the Scientific Advisory Board of the Research Center for Infectious Diseases, University of Würzburg
- 2014 - 2015 Involvement in the statement on Neglected Tropical Diseases for the G7 summit 2015

- 2013 - 2019 Member of the Scientific Advisory Board of the Kerckhoff Heart Research Institute, Bad Nauheim
- 2007 - 2010 Member of the Scientific Advisory Board of the Center for International Development and Environmental Research

Honours and Awards

- 2010 Rudolf Leuckart Medal of the German Society for Parasitology
- Since 2009 Member of the Leopoldina, Germany's National Academy of Sciences
- 2003 / 2004 Carus Medal of the Deutsche Akademie für Naturforscher Leopoldina / Carus Prize of the city of Schweinfurt
- 2000 - 2005 Member of the Junge Akademie of the Berlin-Brandenburg Academy of Sciences and Humanities and the Deutsche Akademie der Naturforscher Leopoldina
- 2003 Support for the congress "Redox Metabolism in Malaria: From Genes to Drugs", Bellagio, Italy, from the Rockefeller Foundation (together with Prof. Hagai Ginsburg, Hebrew University)
- 1989 First Ludolf Krehl Prize (dissertation prize) of the Southwest German Society for Internal Medicine
- 1984 - 1986 Funding from the Studienstiftung des Deutschen Volkes

Memberships of Learned Societies

- German National Academy of Sciences Leopoldina
- German Society for Parasitology
- German Society for Tropical Medicine and Global Health
- German Society for Biochemistry and Molecular Biology
- International Society for Free Radical Research

Publications (Selection From More Than 300 Publications)

- 1) **Becker K**, Savvides S, Keese M, Schirmer RH, Karplus PA (1998). Enzyme inactivation through sulfhydryl oxidation by physiologic NO-carriers. **Nature Struct Biol** 5: 267-271.
- 2) Kanzok S, Fechner A, Bauer H, Ulschmid JK, Müller HM, Botella-Munez J, Schneuwly S, Schirmer RH, **Becker K** (2001). Substitution of the thioredoxin system for glutathione reductase in *Drosophila melanogaster*. **Science** 291: 643-646.
- 3) Fritz-Wolf K, Becker A, Rahlfs S, Harwaldt P, Schirmer RH, Kabsch W, **Becker K** (2003). X-ray structure of glutathione S-transferase from the malarial parasite *Plasmodium falciparum*. **Proc Natl Acad Sci USA** 100: 13821-13826.

- 4) Urig S, Fritz-Wolf K, Réau R, Herold-Mende C, Tóth K, Davioud-Charvet E, **Becker K** (2006) Undressing of phosphine gold(I) therapeutic agents as irreversible inhibitors of human disulfide reductases. **Angew Chem Int Ed Engl** 45: 1881-1886.
- 5) Perez-Jimenez R, Li J, Kosuri P, Sanchez-Romero I, Wiita AP, Rodriguez-Larrea D, Chueca A, Holmgren A, Miranda-Vizuete A, **Becker K**, Cho SH, Beckwith J, Gelhaye E, Jacquot JP, Gaucher E, Sanchez-Ruiz JM, Berne B, Fernandez JM (2009). Diversity of chemical mechanisms in thioredoxin catalysis. **Nature Struct Mol Biol** 16: 890-896.
- 6) Koncarevic S, Rohrbach P, Deponte M, Prieto H, Yates J, Rahlfs S, **Becker K** (2009) *Plasmodium falciparum* imports the human protein peroxiredoxin 2 for peroxide detoxification. **Proc Natl Acad Sci USA** 106: 13323-13328.
- 7) Fritz-Wolf K, Kehr S, Stumpf M, Rahlfs S, **Becker K** (2011). Crystal structure of the human thioredoxin reductase - thioredoxin complex. **Nature Commun.** 2: 383.
- 8) Wang L, Delahunty C, Fritz-Wolf K, Rahlfs S, Prieto JH, Yates III JR, **Becker K** (2015). Characterization of the 26S proteasome network in *P. falciparum*. **Sci Rep** 5: 17818.
- 9) Krieg R, Jortzik E, Goetz A-A, Blandin S, Wittlin S, Elhabiri M, Rahbari M, Nuryyeva S, Voigt K, Dahse HM, Brakhage A, Beckmann S, Quack T, Grevelding CG, Pinkerton AB, Schönecker B, Burrows J, Davioud-Charvet E, Rahlfs S, **Becker K** (2017) Arylmethylamino steroids as antiparasitic agents. **Nature Commun.** 8: 14478.
- 10) Felber J, Poczka L, Scholzen K, Zeisel L, Maier MS, Busker S, Theisen U, Brandstädter C, **Becker K**, Arnér ESJ, Thorn-Seshold J, Thorn-Seshold O (2022) Cyclic 5-membered disulfides are not selective substrates of thioredoxin reductase, but are opened nonspecifically by thiols. **Nature Commun.** 13: 1754.