



Curriculum Vitae Prof. Dr. Barbara Rehermann



Image: Markus Scholz | Leopoldina

Name: Barbara Rehermann

Research Priorities: Liver diseases, hepatitis viruses, innate and adaptive immune responses, human microbiome

Barbara Rehermann is a German-American gastroenterologist and immunologist whose work focuses on liver diseases. She has a particular interest in hepatitis B, C and D virus infections, the interaction between liver cells and the immune system, and how the gut microbiome affects the immune response to viral infections of the liver.

Academic and Professional Career

- since 2004 Chief and Senior Investigator, Immunology Section, Liver Diseases Branch, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health (NIH), Bethesda, USA
- 1999 Habilitation, Independent Lecturer in Immunology, Hanover Medical School (MHH), Hanover, Germany
- 1998 - 2004 Head and Tenure-Track Investigator, Immunology Section, Liver Diseases Branch, NIDDK, NIH, Bethesda, USA
- 1995 - 1998 Clinical Fellowship and Research, Department of Gastroenterology, Hepatology and Endocrinology, MHH, Hanover, Germany
- 1993 - 1995 Postdoctoral Fellow, The Scripps Research Institute, La Jolla, USA
- 1991 - 1993 Medical Internship and Residency, Department of Gastroenterology, Hepatology and Endocrinology, MHH, Hanover, Germany
- 1991 MD Molecular Pharmacology, MHH, Hanover, Germany
- 1984 - 1991 Degree in Medicine, MHH, Hanover, Germany

Functions in Scientific Societies and Committees

- 2006 - 2010 Member, Editorial Board, Journal of Immunology
Member, Editorial Board, Journal of Gastroenterology
Member, Editorial Board, Journal of Infectious Diseases
Member, Editorial Board, Journal of Hepatology

Honours and Awarded Memberships

- since 2021 Member, German National Academy of Sciences Leopoldina, Germany
since 2014 Member, Association of American Physicians (AAP), USA
2005 Loeffler Frosch Prize, Society of Virology, Erlangen, Germany
since 2004 Member, American Society for Clinical Investigation (ASCI), USA
2004 NIH Bench-to-Bedside Award, NIH, Bethesda, USA
1997 Pettenkofer Research Award, Pettenkofer Foundation, Munich, Germany
Fellow, American Association for the Study of Liver Diseases (AASLD), USA
Member, American Association of Immunologists (AAI), USA
Member, American Society for Microbiology (ASM), USA
Member, German Society for Immunology (DGfI), Germany

Research Priorities

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Chronic viral infections of the liver caused by the hepatitis B (HBV), hepatitis C (HCV) and hepatitis D (HDV) viruses are among the most frequent causes of death worldwide. A preventative vaccination is available for the hepatitis B virus, but none have been developed for the other two viruses. Although effective treatments for a hepatitis C infection exist, they are highly complex and very expensive.

Rehermann and her team are researching ways of inducing a protective immune response against hepatitis C. To this end, the team analyses the blood of successfully treated patients in order to gain an understanding of the innate and adaptive immune responses and the interactions between them. They then compare these responses with the parameters of newly infected patients who are still awaiting treatment. While the virus-specific adaptive immune response has already been

investigated in detail, scientists do not yet have sufficient knowledge of how innate immunity affects the activity and progression of chronic HCV infections. Rehermann has helped to shed considerable light on the role played by natural killer cells here. A greater understanding of the virus, including the innate immune response, is essential for developing a preventative vaccination against it.

Rehermann is also currently conducting research into an immunomodulatory treatment for chronic hepatitis B infections and developing immunological biomarkers. For an acute infection to be overcome, the host needs to elicit a pronounced immune response to the hepatitis B infection.

Due to its location and physiological function, the liver is constantly exposed to metabolites from the gut bacteria. Rehermann therefore also takes a keen scientific interest in the role of the gut microbiome. She has been able to demonstrate how gut bacteria play a key part in the initiation, maturation and functioning of the innate immune response as well as in the systemic inflammation of the liver. To gain a better understanding of how the microbiome affects the immune system, Rehermann has established mouse models as part of her preclinical research, one of the aims of which is to support drug development.