

Prof. Achim Hörauf, MD

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Research Expertise

Prof. Hörauf is Full Professor of Microbiology and Parasitology and Director of the Institute of Microbiology and Parasitology at Bonn University Medical Center. The Institute is the central Infectious Diseases lab of the Med. Center, processing more than 120,000 samples per year. Professor Hörauf is internationally renowned for his work in Tropical Medicine, specifically, for pioneering a new drug treatment for filariasis (a group of neglected tropical diseases). The new treatment exploits an endosymbiosis between the worms and bacterial endosymbionts called Wolbachia, which are susceptible to some classes of antibiotic. The feasibility of delivering a safe macrofil drug has sparked the development of macrofil research programmes by the Gates Foundation and DNDI. Prof. Hörauf's group was the first to characterize a TLR2 ligand from Wolbachia, and established that blindness brought about by filarial antigens as the worm larvae migrate into the eye in onchocerciasis (or "river blindness") is dependent on Wolbachia, and again mediated by the innate immune system. Prof. Hörauf's second focus is in the field of infection immunity, where his group were the first to detect regulatory T cells in humans in an infection.

He has been collaborating with key African scientists on filariasis since more than 15 years, being a PI on numerous clinical trials, funded by the BMBF, EU, the Volkswagen Foundation, and several grants from the Gates Foundation.

Education / Training

Institution and Location	Major	Degree, Year
University of Erlangen, Germany	Clinical Immunology	MD, 1989
University of Erlangen, Germany, Duke University, USA and Galway University, Ireland	Clinical Immunology	MD, with clinical rotations, 1989

Appointments / Positions Held

Year	Position	Institution
2003 - present	Full Professor and Director, Institute for Medical Microbiology, Immunology and Parasitology	University Clinic of Bonn, Germany
2001 - 2003	Head, Department of Helminthology	Bernard Nocht Institute for Tropical Medicine, Germany
1995 - 2001	Independent Laboratory Head	Bernard Nocht Institute for Tropical Medicine, Germany
1990 - 1994	Fellow, Institute for Clinical Microbiology, Immunology and Hygiene	University of Erlangen, Germany

Honors / Awards

2015	Memento Prize for Neglected Diseases
2015	The Innovation Award 2015 by BioRegionen
2012	President of the Paul Ehrlich Society for Chemotherapy e.V.

2010	Coordinator for the partner BonnCologne, Dt. Zentrum für Infektionsforschung (DZIF) – German Center for Infectious Disease.
2002	Main annual award, German Society for Hygiene and Microbiology (DGHM)
2001	Martini-Prize (bi-annual) for best clinical research of the University Clinic Eppendorf/Hamburg
1999	Main bi-annual award, German Society for Tropical Medicine (DTG)
1984 - 1989	Recipient of the “Bavarian Gifted Scholarship”

10 most relevant publications by Prof. Achim Hörauf in the last years

1. Gondorf F, Berbudi A, Buerfent BC, Ajendra J, Bloemker D, Specht S, Schmidt D, Neumann AL, Layland LE, **Hoerauf A**, Hübner MP. 2015 Chronic filarial infection provides protection against bacterial sepsis by functionally reprogramming macrophages. *PLoS Pathog.* 2015 Jan 22;11(1)
2. Mand S, Debrah AY, Klarmann U, Batsa L, Marfo-Debrekyei Y, Kwarteng A, Specht S, Belda-Domene A, Fimmers R, Taylor M, Adjei O, **Hoerauf A**. 2012. Doxycycline improves filarial lymphedema independent of active filarial infection: a randomized controlled trial. *Clin Infect Dis.* 55:621-30.
3. Specht S, Frank JK, Alferink J, Dubben B, Layland LE, Denece G, Bain O, Förster I, Kirschning CJ, Martin C, Hoerauf A. 2011. CCL17 controls mast cells for the defense against filarial larval entry. *J Immunol* 186:4845-52
4. Taylor M, Hoerauf A, Bockarie M. 2010. Lymphatic filariasis and onchocerciasis. *Lancet* 376: 1175-85
5. Hoerauf A. 2009. *Mansonella perstans*--the importance of an endosymbiont. *N Engl J Med* 361: 1502-4
6. Specht S, Hoerauf A. 2007. Does helminth elimination promote or prevent malaria? *Lancet* 369: 446-7
7. Taylor MJ, Makunde WH, McGarry HF, Turner JD, Mand S, Hoerauf A. 2005. Macrolaricidal activity after doxycycline treatment of *Wuchereria bancrofti*: a double-blind, randomised placebo-controlled trial. *Lancet* 365: 2116-21
8. Saint Andre A, Blackwell NM, Hall LR, Hoerauf A, Brattig NW, Volkmann L, Taylor MJ, Ford L, Hise AG, Lass JH, Diaconu E, Pearlman E. 2002. The role of endosymbiotic *Wolbachia* bacteria in the pathogenesis of river blindness. *Science* 295: 1892-5
9. Hoerauf A, Mand S, Adjei O, Fleischer B, Buttner DW. 2001. Depletion of *wolbachia* endobacteria in *Onchocerca volvulus* by doxycycline and microfilaridermia after ivermectin treatment. *Lancet* 357: 1415-6
10. Hoerauf A, Volkmann L, Hamelmann C, Adjei O, Autenrieth IB, Fleischer B, Buttner DW. 2000. Endosymbiotic bacteria in worms as targets for a novel chemotherapy in filariasis. *Lancet* 355: 1242-3