

Press Release

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DGHM AWARD FOR BRAUNSCHWEIG INFECTION RESEARCHER PETRA DERSCH HONORED FOR HER WORK ON INTESTINAL INFECTIOUS PATHOGENS

On 22 September, HZI researcher Prof Petra Dersch was this year's recipient of the top award given by the DGHM, the German Society for Hygiene and Microbiology.



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Petra Dersch, Head of the Department
Molecular Infection Biology

The 5000 Euro award is given to scientists who are actively engaged in exceptional and typically long-term research in a current and promising area of hygiene and microbiology. Dersch received the award in recognition of her work in the area of the function and regulation of bacterial virulence factors of intestinal infectious pathogens. The prize was given to Dersch during the DGHM's 65th Annual Conference, which began on 22 September in Rostock.

Gastrointestinal infections are counted among the most common infectious diseases. In Germany, the main culprits behind these diseases are in many cases bacteria like salmonella, shigatoxin producing *Escherichia coli*, and *Yersinia*, all of which are transmitted from animal to human, mainly through contaminated foods. Petra Dersch and her colleagues in the Department of Molecular Infection Biology at the Helmholtz Centre for Infection Research (HZI) are studying *Yersinia* in an effort to improve our understanding of the underlying mechanisms of bacterial intestinal infections.

To colonize the intestine, bacteria first have to attach to the surface of the intestinal mucosa. Many pathogens are able to cross this barrier, penetrate into the deeper lying tissues, and ultimately make their way to the internal body organs. It isn't enough, however, to colonize the host's tissues; the bacteria also have to win the fight against the host's immune system. "In order to better understand how this works, we're looking at the regulatory mechanisms that are activated whenever a pathogen invades a host," says the award recipient.

A role played by certain regulatory bacterial proteins and sensory RNA molecules are capable of changing shape when they heat up from 30 degrees C in the environment to 37 degrees C inside the intestine. Their new shape allows them to change their function, which may result in those genes that are needed for the infectious process to get transcribed and translated.

Dersch's research has contributed majorly towards gaining a better understanding of when, where, and which regulatory mechanisms microorganisms use to set up an infection. Dersch sees the award as both recognition and motivation: "It's really nice to have the research done by my team be recognized by an audience of experts in this field and it also documents to us that we're on the right track here. Of course, that's a strong motivating factor."

The DGHM is a scientific society whose mission it is to bring together all of the scientists who are working in the area of microbiology and hygiene. This year's annual conference is the 65th of its kind and has as its goal to promote exchange of the different areas of microbiology, infection immunology, as well as hygiene and health care.

Since 2008, Petra Dersch is head of the HZI's Department of Molecular Infection Biology. Dersch studied biology at the universities of Ulm and Constance and earned her Ph.D. at the Max Planck Institute for Terrestrial Microbiology in Marburg. Prior to her work at the TU Braunschweig and the HZI, she headed a junior research group at the Robert Koch Institute in Berlin.

The Helmholtz Centre for Infection Research:

At the Helmholtz Centre for Infection Research (HZI) in Braunschweig, scientists are studying microbial virulence factors, host-pathogen interactions and immunity. The goal is to develop strategies for the diagnosis, prevention and therapy of human infectious diseases.

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