

ACME Seminar

Speaker

Prof. Petra Dersch

Title

Mutual reprogramming of Yersinia and host responses during infection

When

23.07.2026, 13:00

Where

Lecture Hall Q

Host

Prof. Dirk Schlüter

Oral infections with *Yersinia pseudotuberculosis* lead to bacterial invasion of the gut-associated lymphoid tissues and deeper organs. During transcytosis, (i) the number of bacteria entering from the gut into the underlying lymphoid tissues is drastically reduced. However, even a small number of bacteria can efficiently replicate and (ii) trigger a strong recruitment of innate immune cells, primarily neutrophils, to the various sites of infection. This results in severe inflammation and extensive tissue damage.

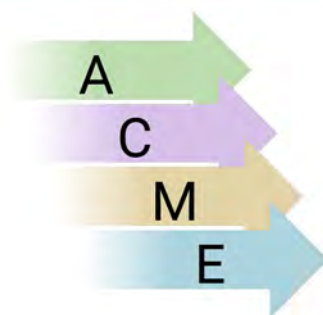
To understand the progression of the infection and the resulting disease outcome, we investigated the mutual reprogramming of bacteria and neutrophils both in vitro and in vivo throughout the infection process. We observed a complex spatiotemporal remodeling of neutrophils, particularly in the spleen and liver, which evolves over the course of the infection due to the secretion of toxins and the active injection of bacterial effector proteins into the neutrophils.

About Petra Dersch's Research:

- Virulence Regulation: When, where and how are bacterial virulence factors induced or repressed during the infection process?
- Virulence Functions: Which pathogenicity factors are responsible for certain virulence-relevant processes and how can they be exploited for therapeutic strategies (e.g. drug delivery)
- Host-Pathogen Interaction: How do pathogenic bacteria adhere and invade into host cells and how do they disseminate into deeper tissues?
- Immune Defense: How does the host react to the invading pathogen and how do the bacteria prevent or evade the attacks?



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***Activation of Cellular
anti-Microbial***