

# Invitation

Guest lecture at the Microbiology Seminar of the Institute of Microbiology:

## **The role of proteases in the internalization process of *S. aureus* into non-professional phagocytes**

### **PD Dr. Silke Niemann**

Group Leader – Cellular Microbiology at the Universitätsklinikum Münster (UKM),  
Deutschland

**Wednesday 12<sup>th</sup> February 2025, 12:00 pm c.t.**

**Lecture Hall M, Building HA at University of Veterinary Medicine Vienna**

*Staphylococcus aureus* has traditionally been considered an extracellular pathogen. However, since antimicrobial therapy is often unsuccessful and the pathogen can cause recurrent disease, the concept of internalization of *S. aureus* into non-professional phagocytes, such as human osteoblasts or endothelial cells, has been developed. There is also evidence that *S. aureus* invades bovine mammary epithelial cells. In the current model of host cell internalization, bacteria first bind to an integrin on the side of the host cell via a fibronectin bridge, which eventually leads to phagocytosis of *S. aureus* by the host cells. Dr. Silke Niemann, who has worked in *S. aureus* research for more than 15 years, has shown that the supramolecular structure of fibronectin is a crucial factor in bacterial uptake. Additionally, recent data indicate that proteases play a significant role in the internalization process. More detailed knowledge in this regard could be useful in the development of new therapeutic approaches for *S. aureus* infections in humans and animals.

**Freier Eintritt!**

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