SFB1565 Seminar

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## ASOs for microbes: Programmable antisense oligomers for selective targeting of bacteria, hosts and phages

RNA-centric antisense technologies have the potential to form a foundation for the development of a new generation of antiinfectives. Upon delivery into the bacterial cell, short antisense oligonucleotides (ASOs) or mimics thereof can directly modulate bacterial gene expression at the RNA level. The programmable nature of such asobiotics, which is based on simple base-pairing rules, allows rational and specific drug design. This opens myriad applications including the rapid development of ASOs that can kill emerging pathogens, sensitize drug-resistant strains, or block expression of key virulence factors—all while sparing the native microbiome. They might also offer fresh solutions in synthetic biology and industrial applications by modulating gene expression in non-model bacteria. This talk will discuss the challenges of progressing asobiotics from a promising area of research to an applied technology capable of addressing the growing antimicrobial resistance crisis and providing solutions for the analysis of genetically intractable microbes. In addition, I will discuss how we have achieved to establish asobiotics as a versatile tool for functional genomics of phages.

Thursday, July 09, 2026, 01:00 pm
Large Lecture Hall, Humboldallee 23, Department of Cellular Biochemistry, Göttingen

Hosted by Prof. Dr. Hauke Hillen

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