Call: 6th transnational call for the JPIAMR within the ERA-NET JPI-EC-AMR:
Innovations against antibiotic-resistant bacteria: New targets, compounds and tools

Title: Development of novel ribosome-targeting antibiotics

Acronym: RIBOTARGET

Consortium composition

Type	Name	Institute	Country
Coordinator	Daniel Wilson	University of Hamburg	Germany
Partner	C. Axel Innis	Institut Européen de Chimie et Biologie	France
Partner	Erik Böttger	University of Zurich	Switzerland
Partner	Vasili Hauryliuk	Umeå University	Sweden
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Abstract
The ribosome is one of the major targets for antibiotics. Multi-drug resistant pathogens are making our current arsenal of ribosome-targeting antibiotics obsolete, highlighting the need for development of new antimicrobial compounds. Here we focus on discovering novel ribosome-targeting antibiotics with improved activity and selectivity, with chemical scaffolds that target novel sites on the ribosome and different steps of the translation cycle. Specifically, we propose to (WP1) develop novel aminoglycoside antibiotics with potent antibacterial activity and improved target selectivity to overcome the toxicity that is associated with this clinically important class of antibiotics; (WP2) develop proline-rich antimicrobial peptides as novel antimicrobial agents by taking advantage of available high resolution ribosome structures and their ease of synthesis and modification; (WP3-4) utilise high-throughput screening to discover compounds with novel chemical scaffolds that have activity against new cellular targets, such as the (WP3) ribosome rescue systems, and (WP4) stringent response pathways in bacteria. The consortium aims to characterise the mechanism of action of novel antimicrobial agents as well as their *in vivo* and *in vitro* efficacy, in particular against Priority 1 pathogens and *Mycobacterium tuberculosis*.