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Potential way to design new antibiotics

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Two Swiss research teams from the University of Bern and the ETH Zurich have developed a new method to shed light onto a mostly unknown process of bacterial protein production. Their results could be used for the design of new antibiotics.

Ribosomes are the factories of the cell and, as such, are responsible for the fabrication of proteins. Widespread stalling is fatal for the cell, and that is why it is efficiently targeted by antibiotics.

Ribosome stalling is a promising starting point for this kind of research, as the functional role of the ribosomal exit tunnel to polypeptide synthesis and protein folding is only beginning to be understood in molecular terms. The research groups examined the stalling process induced by erythromycin and other macrolide antibiotics which inhibit the protein synthesis of bacteria.

The research is not only interesting for the pharmaceutical implications, but also because it highlights the potential of interdisciplinary approaches to complex molecular biology problems.