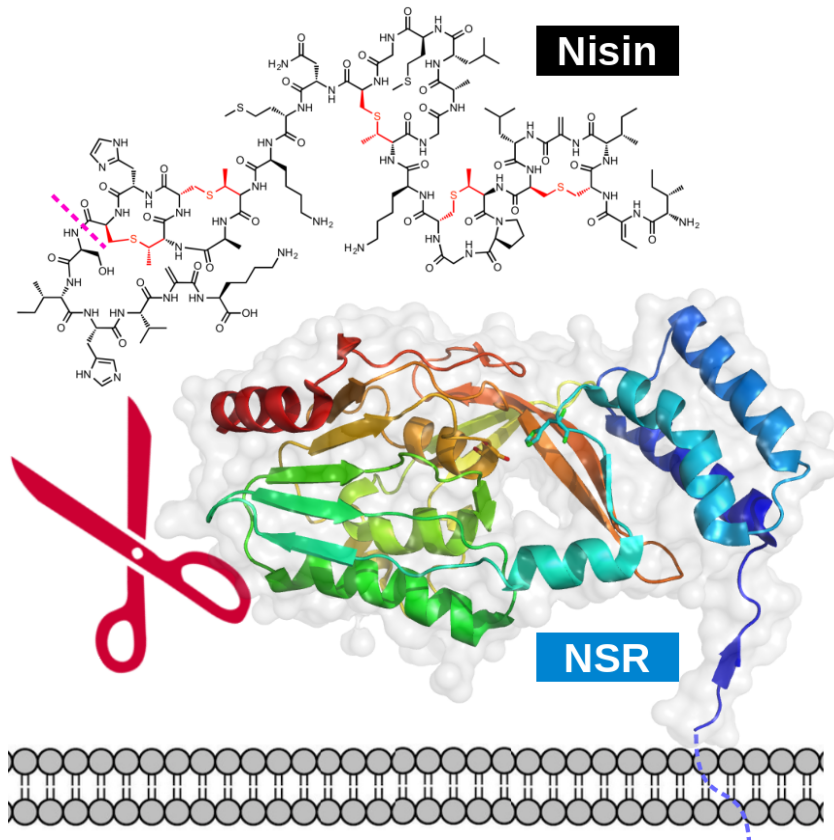


Overcoming Lantibiotics resistance in bacterial pathogens: Nisin as a model system



Lantibiotics are broad-range antimicrobial peptides produced by Gram-positive bacteria. Due to their high activity and stability, they have become attractive candidates as anti-infective drugs and food preservatives. However, in several human pathogenic strains, lantibiotics are not effective because of the occurrence of resistance. In particular, a natural immunity to nisin, the most prominent lantibiotic, has been mainly attributed to the Nisin Resistance Protein (NSR). The aim of this project is to understand the mechanisms of lantibiotics resistance at an atomistic level taking advantage of computational methods (e.g. molecular simulations and modeling). Furthermore, the identification of small-molecule inhibitors able to interfere with NSR function, as well as that of other key proteins, could be helpful in making the therapy with nisin most effective.

Nicola Porta is working in the Institute of Pharmaceutical and Medical Chemistry (RG H. Gohlke).