



UNIVERSITÀ DEGLI STUDI DI NAPOLI "FEDERICO II"

Dipartimento di Scienze Chimiche

Dottorato in Scienze Chimiche - XXXVI

***Ph.D. in Chemical Sciences
Cycle XXXVI***

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Research project title:

Investigation of the mechanism of action of antimicrobial peptides

Keywords:

Antimicrobial Peptides
Mechanism of Action
Functional Proteomics
Mass Spectrometry
Spectroscopic Techniques

Research project abstract:

The increasing onset of multi-resistant bacteria addressed microbiology research towards antimicrobial peptides (AMPs) as new possible antibiotics from natural sources. AMPs are short peptides endowed with a broad range of activity against both Gram-positive and Gram-negative bacteria and are less prone to trigger resistance. However, the possible exploitation of AMPs as new antibacterial drugs is strictly dependent on a clear description of their mechanism of action at the molecular level. This PhD project focuses on the investigation of the mechanism of action of different natural and modified AMPs. Functional proteomics approaches will be exploited to identify intracellular protein targets. The interaction between the peptides and the identified putative protein interactors will be validated *in silico*, *in vitro* and *in vivo* by different methodologies. Specific protein interactors will be expressed in *E.coli*, purified and structurally and functionally characterised.