Aula Seminari Ore 15:00, 2 e 4 Maggio 2022:

Due lezioni del Prof. Michele Saviano sul tema:

The word of peptide: use of conformational analysis to define new molecular tools for de novo design of biological systems

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The specificity of the mechanisms of molecular recognition, which is the basis of either the biological activity in many systems such as enzyme-substrate or antigene-antibody complexes or the interaction between a receptor and a substrate, is related to the conformation assumed by one or both the interacting systems.

The most used approach in the study of peptides and proteins for the definition of the relationships between amino acid sequence, conformation, biological activity and selectivity is the de novo design and the synthesis of analogues characterized by a definite three dimensional structure. The de novo design in peptide systems is facilitated nowadays because of the use of particular molecular "tools", which are able to stabilize locally a specific conformation, when opportunely inserted in the peptide sequence. Over the years several, new molecular tools were characterized, using x-ray diffraction techniques, for their geometrical and structural preferences develop with the aim to define new compounds which, when inserted in the sequence of a bioactive peptide, are able to freeze the peptide in a rigid, predetermined conformation.