

BioOrganic Chemistry Group

<https://research.chimica.unipd.it/bioorganic-chemistry/>



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The Bio Organic Chemistry group synthesizes and studies peptides of different origin and particularly those containing C ^{α,α} -dialkyl amino acids.

The group is engaged in the following research lines:

- synthesis, conformation, mechanism of action and bioactivity (antibacterial and antitumor) of peptides and naturally-occurring peptaibiotics;
- antimicrobial photodynamic therapy;
- textiles functionalized with antibacterial peptides for biomedical applications;
- peptide nanotechnology: peptido-rotaxanes, peptide-decorated metal nanoparticles, self-assembled peptide polymers;
- synthesis and conformation of peptides with well-defined 3D-structures;
- peptide helices as rigid structural elements for spectroscopic studies and for electron transfer and photovoltaic applications.

- *Protection against proteolysis of a cell targeting peptide on gold nanostructure*, Nanoscale, **2021**, 13, 10544-10554.
- *Targeting Oncogenic Src Homology 2 Domain-Containing Phosphatase 2 (SHP2) by Inhibiting Its Protein-Protein Interactions*, J. Med. Chem., **2021**, 64, 15973-15990.
- *Photoresponsive Prion-Mimic Foldamer to Induce Controlled Protein Aggregation*, Angew. Chem. Int. Ed., **2021**, 60, 5173-5178.

- *Targeted Amino Acid Substitutions in a Trichoderma Peptaibol Confer Activity against Fungal Plant Pathogens and Protect Host Tissues from Botrytis cinerea Infection*, Int. J. Mol. Sci., **2020**, 21, art. N. 7521
- *Sustainable, Site-Specific Linkage of Antimicrobial Peptides to Cotton Textiles*, Macromol. Biosci., **2020**, 20, art. N. 2000199.