Bio-Organic Chemistry

www.chimica.unipd.it/bocgroup
+39 049 827 5277 (FF)

Fernando Formaggio (fernando.formaggio@unipd.it); Barbara Biondi (barbara.biondi@unipd.it); Marco Crisma (marco.crisma@unipd.it); Marta De Zotti (marta.dezotti@unipd.it); Marina Gobbo (marina.gobbo@unipd.it); Alessandro Moretto (alessandro.moretto.1@unipd.it); Cristina Peggion (cristina.peggion@unipd.it)

The research activity of the Bio-Organic Chemistry group is focused on the exploitation of peptides and conformationally constrained peptides for applications in organic, physical, biophysical and supramolecular chemistry. The group is currently engaged in the following research lines:

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

- *Spectroscopic Insights into Carbon Dot Systems*, J. Phys. Chem. Lett., **2017**, 8, 2236–2242.
- *Enhanced EGFR Targeting Activity of Plasmonic Nanostructures with Engineered GE11 Peptide,* Adv. Healthcare Mater., **2017**, 6, 2192-2201.
- *A terminally protected dipeptide: from crystal structure and self-assembly, through co-assembly with carbon-based materials, to a ternary catalyst for reduction chemistry in water*, Soft Matter, **2016**, 12, 238-245.
- *The peculiar N- and C-termini of trichogin GA IV are needed for membrane interaction and human cell death induction at doses lacking antibiotic activity*, BBA Biomembranes, **2015**, 1848, 134-144.
- *Cotton functionalized with peptides: characterization and synthetic methods*, J. Pept. Sci., **2014**, 20, 547-553.