

LERU STudent REseArch Mobility Programme (STREAM)  
Project proposal



**Host University:**  
Università degli studi di Milano

**Field:**  
Chemistry

**Specified field, subject:**  
Pharmacology

**Research project title:**  
Amino acids, Peptidomimetics, Peptides and their exploitation for different applications

Possible starting month(s):

Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
x										x	x

Possible duration in months:

1	2	3	4	5	6
			x	x	x

**Suitable for students in:** 2<sup>nd</sup> cycle (Master students)

**Prerequisites:** English: B2 level

**Restrictions:** none

**Description:**

Synergic activity of molecular modeling, synthesis and characterization allows us to develop new molecules able to interact with different target as well as to be used for the preparation of nanomaterials.

Non-natural amino acids. Unusual amino acids provide defined 3D-structural platforms, giving access to complex molecular architecture and finding applications in different fields. We are focused on the preparation of non-natural amino acids using asymmetric synthesis and biocatalysis.

Peptidomimetics. Restricting the local mobility of an oligopeptide is an important goal for the obtainment of bioactive peptidomimetics. The insertion of unusual amino acids and of covalently constrained scaffolds decreases the available conformational space allowing the modulation of the molecular flexibility. New architectures using our scaffolds are designed and synthesized.

Peptide synthesis. Stepwise microwave assisted solid phase synthesis is an efficient technique especially for the preparation of difficult and long peptide sequences. By applying MW-SPPS protocols, we prepare small protein domains and peptide libraries.

The involvement of the student in the different projects can be at different levels: i) molecular modelling, ii) amino acids synthesis, iii) solid and /or solution phase synthesis of peptides/peptidomimetics.



During the training, analytical and spectroscopic techniques (IR, NMR, CD, HPLC) will be acquired by the student.

For further information, visit <http://Users.unimi.it/apisgroup/>

**Faculty or Department** Department of Pharmaceutical Sciences - Università degli Studi di Milano

**Contact person:** International relations office, University of Milan

**Contact email:** international.programmes@unimi.it.