

UE Bio-targeted chemistry 1



Niveau d'étude
Bac +5



ECTS
3 crédits



Composante
UFR Chimie-
Biologie



Période de
l'année
Toute l'année

- > **Langue(s) d'enseignement:** Anglais
- > **Ouvert aux étudiants en échange:** Oui
- > **Code d'export Apogée:** YACB9U40

Présentation

Description

Course outline:

This course describes synthetic approaches and methods for: the synthesis of library of small[1]molecules, the assembly of peptide and analogs, the engineering of molecular conjugates of biomolecules, and the applications of that family of molecules in therapeutics, diagnostics and nanotechnologies (i.e. biosensors).

Details:

1/ Peptides and protein engineering

I.Structural aspects

II.Synthetic strategies (SPPS, fragment synthesis, native ligation)

III.Applications in vectorization (Monoclonal antibodies, cell-penetrating peptides, peptide ligands, nanoparticles)

IV.Antimicrobial peptides, toxins

V.Pseudopeptides

2/ Chemical ligation

I. The different reactions

II. Multiple chemoselective ligations

III. Installing bioorthogonal functionality into target biomolecules

IV. In vivo click chemistry

3/ Combinatorial chemistry

I. Drug Discovery

II. Synthetic strategies (combinatorial vs parallel synthesis; solid vs supported synthesis)

III. Dynamic Combinatorial Chemistry / Target guided synthesis

4/ Biosensors

I. Medicinal, environment and food safety applications

II. Biomolecules for molecular recognition

III. Chemical modifications for immobilization and transduction

Heures d'enseignement

UE Bio-targeted chemistry 1 - CM

CM

20h

Pré-requis recommandés

Prerequisites: Organic chemistry, Peptide synthesis (M1 Master Program CHI703, CHI832).

Période : Semestre 9

Compétences visées

Skills:

Chemical methods for ligations of complex biomolecules (peptides, oligonucleotides and carbohydrates), applications in biosensor. Combinatorial chemistry: principles / techniques/ applications. Reactivity, synthetic methods and applications of peptides.

Infos pratiques

Contacts

Responsable pédagogique

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