

Fiche de renseignement AMETYS – UE

Nom de l'UE : Therapeutic Peptides and Peptidomimetics

Onglet « Présentation »

Description* :

Besides their central role in all physiopathological processes, Peptides represent an ever growing class of therapeutic molecules, combining some of the best features of large biologics such as proteins, and small organic molecules. Far beyond the fallen dogma that a peptide is not stable enough in vivo to become a drug, this lecture will explore the full potential of synthetic bioactive peptides as drugs, targeting elements, probes to explore biological systems through examples of marketed and still under development drugs.

The strategies to design them from scratch or to isolate them from natural sources as well as the subsequent methods of stabilization and ADME optimization will be disclosed. Cyclic, dimers, backbone modified peptides, pseudopeptides and peptidomimetics will be explored. At last, the use of protein as drugs will be discussed and the type of production of such large biologics will be details, highlighting the pros and cons of recombinant system vs fully synthetic ones. The chemical synthesis of protein with native ligation methods and their modification by chemoselective reactions , will also be assessed.

Mots-clés :

Peptides drugs, Peptidomimetics, synthesis, pseudopeptides, peptide delivery, conjugates

Objectifs* :

The teaching is meant to Be able to design and synthesize and optimize series of peptides and analogues, to be used in research projects at the interface of biology and chemistry.

Volumes horaires* :

CM : 15 H

TD : 5 H

TP :

Terrain :

Pré-requis nécessaires* :

Organic Chemistry level Master 1

Pré-requis recommandés* :

Knowledge in the synthesis and function of major biomolecules

Syllabus :

Lectures will be given by reserachers invovled in the field of therapetuic peptides and proteins including

- Muriel Amblard
- Oleg Melnyk
- Vincent Aucagne

Cours : 15H

détail

TD : 5H

The concepts presented in a lecture style format will be reinforced through classroom discussion of articles from scholarly journals, presented and discussed by students.

Responsable :

Gilles Subra