Fiche de renseignement AMETYS – UE

Nom de l'UE : Immunotargeting

Onglet « Présentation »

Description :

Support en anglais
Antibodies outstanding tools for therapeutic and diagnosis purposes. Besides their extensive use as recognition elements for diagnostic systems, antibodies have established themselves as major tools to treat cancer but also other chronic and metabolic diseases. The highly specific recognition properties, the potential the inhibitory effect of the antibody for its target and the subsequent recruitment of immune system, give to immunotherapies outstanding successes compared to small molecule drugs.
In this context the engineering of antibodies is a path to go event further an alleviate such large biomolecules limitations. AB can be modified thanks to a range of bioorthogonal chemical reactions to get ADC (antibody drug conjugates) or conjugates with polymers or probes to improve their stability or to give them imaging properties for theranostic applications. Alternatives to classical IgG will be also presented such as chimeras, nanobodies, and on going research on aptamers and artificial antibodies such molecularly imprinted polymers.

Key words :
ADC, immunotargeting, immunotherapy, nanobodies, protein engineering,

Objectives :
General knowledge of scope of use, bioproduction of antibodies for therapeutic and diagnosis purposes. Selecting appropriate chemical tools to modify, immobilize and conjugate antibodies for therapeutic and/ or diagnosis systems. Method of characterization. The course will focus on organic chemistry and post-functionalization of biomolecules applied to peptides, proteins and nucleic acids (DNA and RNA) with applications in gene therapy, biosensing and design of probes for biological studies.

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 :

Cours : 15H

The courses will be given by chemists of biomolecules, biologist and immunologists as well. Researchers will be involved , notably with the participation of Labex MabImprove (Montpellier-Tours) and IRCM.

- Pierre Martineau

1. Fundamentals

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.

Responsables :

Laurence Guglielmi
Marie-Alix Poul