

# Fiche de renseignement AMETYS – UE

**Nom de l'UE** : Targeted therapies

## Onglet « Présentation »

### **Description\*** :

Support en anglais

To enhance efficiency and minimize side effects, tailoring the selectivity and specificity of an active molecule for its target is of uttermost importance.

In an ideal word, to avoid adverse effects, a drug should be able to circulate in the blood stream without interacting off target, reaching the right place at the right time with the right concentration.

It should be able to target a given tissue, a chosen cell type and ultimately reach the precise cell compartment, to exert its effect. Besides state of the art structure optimization to enhance selectivity, different strategies can be deployed to achieve this goal including activable pro-drugs, conjugaison or encapsulation with carriers, addition of adressing moieties and cell-targetting or cell penetrating elements. Original triggerable release systems (pH, enzymes,...) can be implemented to ensure the drug delivery with a temporal an spatial control.

Besides, and in particular for the treatment of specific cancers, the selection of a relevant molecular target repsonbile fo the disease, is a key to imrove treatment and milit side effects for a selected group of patient.

**Key words** : Molecular target, Prodrugs, cellular uptake, drug selectivity, adverse effects, vectors, cell-penetrating and cell targeting moieties

### **Objectives** :

Based on literature analysis, identifying relevant target in diseases.

Starting from a defined biological target, be able to set up strategies (i) to design a selective drug (ii) to adress the drug to this target to minimize adverse effects.

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

**Responsible** :

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