



# Criblage



## En bref

- **Date de début des cours:** 1 sept. 2021
- **Langue(s) d'enseignement:** Anglais
- **Méthode d'enseignement:** En présence
- **Organisation de l'enseignement:** Formation initiale
- **Ouvert aux étudiants en échange:** Non

## Présentation

### Description

Understanding of screening techniques for bioactive molecules, and more generally in vitro tests used to measure a biological event in the perspective of drug discovery or diagnosis.

1) Pharmacological and biophysical fundamentals describing a biological event, target of biological tests:

2) Biological tests for the development of medicines or diagnostics

3) Applications, case studies, critical analyses.

### Volumes horaires\* :

CM : 15 H

TD : 5 H

### Objectifs

Be able to choose the biological screening and testing techniques suitable for the evaluation and optimisation of bioactive molecules.

Understand from a molecular point of view the technologies associated with diagnostic and screening tools and be able to design new chemical tools for this purpose.

### Pré-requis nécessaires

Notions de base de biologie et de biochimie

### Contrôle des connaissances

Examen écrit terminal de 2h :

- \* Documents autorisés : oui
- \* Calculatrice non graphique autorisée : oui
- \* Internet autorisé : oui (mais sans communication interpersonnelle possible)



## Syllabus

*Cours* : Inductive pedagogy (problems based on real cases of development of active molecules. Inverted classroom. Votes and quizzes during sessions, case studies. Support(s) available on ENT (Moodle): Course documents, reference publications, examination records.

### 1) Fundamentals (3H)

- receptors, enzymes
- binding, basics of receptors pharmacology
- biological activity measurement

### 2) Principle of Bioassays for drug development and diagnosis (6H)

- high throughput vs high content
- Biological model : biomolecules isolated, cell-based assays, animal models including transgenic models
- luminescence (fluorescence, FRET, radioluminescence, SPA), radioactivity, UV
- viability, proliferation and adhesion assays (for medical devices).

### 3) Systems and devices :

- robots HTS and library management
- enzyme based reagents and assays
- surface interaction measurement (QCM/SPR)
- lateral flow and chromatographic assays

3) Applications, cases study and critical evaluation.

*TD* (5 H) : Individual work, presentation of techniques and publications to be prepared before and presented during the session.

Case studies based on drug development, diagnosis tools and medical devices.

## Informations complémentaires

### Contact(s) administratif(s) :

Secrétariat Master Chimie

<https://master-chimie.edu.umontpellier.fr/>

## Infos pratiques

### Contacts

#### Responsable pédagogique

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## Lieu(x)

➤ Montpellier - Triolet