

# Metabolomics

 **ECTS**  
3 crédits **Etablissement(s)**  
UFR Chimie,  
UFR des  
Sciences  
fondamentales  
et biomédicales **Volume horaire**  
20h **Période de  
l'année**  
Semestre 3

## En bref

- **Langue(s) d'enseignement:** English
- **Forme d'enseignement :** Cours magistral, Travaux dirigés & Travaux pratiques
- **Ouvert aux étudiants en échange:** Non

## Présentation

### DESCRIPTION

This lecture will introduce metabolomics, define its concepts, as well as the methods targeting metabolite analysis. We will notably introduce the basis of sample collection, data acquisition, processing and interpretation to address targeted and untargeted studies. We will describe the multidisciplinary features of metabolomics workflows, which combine analytical chemistry, biochemistry and bioinformatics. Applications to case studies notably in the field of Health Sciences will be described, involving Mass Spectrometry and/or Nuclear Magnetic Resonance techniques.

#### Content:

Introduction: metabolomics analysis workflow 2h

Basics of NMR (physical principle + equipment) 3h

Basics of mass spectrometry (physical principle + equipment) 4h

Data processing (tools, post-processing) 1h

Basics of Statistical analysis 2h

Basics of biochemistry for metabolomics: metabolism, lipidomics, glycolization (presentation of KEGG-type online tools), fluxomics 4h

**Pour en savoir plus, rendez-vous sur > [u-paris.fr/choisir-sa-formation](https://u-paris.fr/choisir-sa-formation)**

Practical work: NMR and MS analysis of a biofluid (preparation, data acquisition and analysis, metabolic profiling (MS + NMR), metabolomic analysis, data interpretation and validation). 4h

## HEURES D'ENSEIGNEMENT

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|              |                   |     |
|--------------|-------------------|-----|
| Metabolomics | Cours Magistral   | 12h |
| Metabolomics | Travaux Dirigés   | 4h  |
| Metabolomics | Travaux Pratiques | 4h  |

## PRÉ-REQUIS OBLIGATOIRES

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Basics of NMR and Mass Spectrometry – Basics of Chemometrics

## En bref

## CONTACTS

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### Responsable pédagogique

Nicolas Giraud

## LIEU(X)

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➤ Campus Saint Germain des Prés

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