Direzione Ricerca,
Innovazione e
Internazionalizzazione

UNIVERSITÀ
DI TORINO

ID

VP_014_BIOTEC

Visiting Professor Program
Academic Year 2025/2026

TEACHING COMMITMENT: **16 hours**

COURSE TITLE

Metabolomics by Mass Spectrometry

TEACHING PERIOD

I semester

SCIENTIFIC AREA

Chemistry

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

The following topics will be discussed in the course:

- Metabolomics fundamentals: identification of biomolecules with different physical-chemical properties to be selected as potential biomarkers.
- Choosing and development of chromatographic separation methods.
- Ion sources for metabolomics.
- Targeted Vs. untargeted approaches in mass spectrometry data acquisition.
- Mass spectrometry analyzers for metabolomics: advantages and disadvantages.
- Description of applications.

LEARNING OBJECTIVES

The teaching is part of the general objective of the course to provide knowledge and skills in the field of metabolomics, with particular reference to the knowledge and understanding of instrumental analytical methodologies currently in use in the laboratories of mass spectrometry. In

particular the objectives to be reached are: ability to develop a chromatography - mass spectrometry method useful for a metabolomics application and competence in the use of metabolomics data for biomarker selection.

OTHER ACTIVITIES BESIDE THE COURSE

The teaching activity will be deepened in seminars for PhD students and research fellows, regarding different metabolomics fields: lipidomics, glycomics, etc. together with dissemination conferences intended for a graduate students audience.

The involvement of the Visiting Professor in the research activity of the unit of mass spectrometry of the Department of Molecular Biotechnology and Health Sciences is encouraged.

VISITING PROFESSOR PROFILE

The ideal candidate for the Visiting Professor position should meet the following requirements:

- Expert in high resolution mass spectrometry and analytical methods with multidisciplinar experiences in biochemistry;
- Skill in establishment of protocols for global metabolomics;
- Experience in GC-MS, LC-MS, deproteinization and SPE.

CONTACT REFERENT

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