UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Laboratorio di Chimica Organica

2122-1-E0201Q048-E0201Q059M

Aims

The organic chemistry module provides competences and skills in the basics chromatographic techniques and organic compound reactivity, applied to biological systems.
1. Knowledge and understanding.
Knowledge of the basis of chromatography of organic compounds and organic reactivity.

2. Applying knowledge and understanding.
At the end of the course the student will be able to apply the knowledge acquired in the purification and transformation of organic cmpounds.

3. Making judgment.
The student will be able to elaborate the knowledge in experimental organic chemistry problems.

4. Communication skills.
At the end of the course the student will be able to write experimental reports with scientific/chemical vocabulary

5. Learning skills.
The student will be able to apply the acquired knowledge in experimental organic chemistry to biomolecules and biological systems.

Contents

This practical course offers introductory laboratory practice in organic chemistry. The student will deal with:
1. Safety rules in chemistry laboratories;
2. Theorethical principles underlying organic chemistry experimental techniques
3. Thin layer chromatography
4. Column chromatography

5. Caffeine extraction
6. Acid-base extraction separation
7. Organic compounds reactivity

Detailed program

This practical course offers introductory laboratory practice in organic chemistry. The student will deal with:
1. Safety rules and behavioral standards of chemistry laboratories;
2. Theorethical principles underlying organic chemistry experimental techniques: mixture separation and purification by solid liquid, liquid-liquid, acid-base extractions, chromatography analytical and preparative techniques, crystallization techniques, reactivity of organic compounds..
3. Thin layer chromatography aimed at learning the concepts of stationary phase, mobile phase, eluent polarity, polarity of substances, Retention factor (Rf)
4. Column chromatography: extraction of pigments from vegetables, separation and purification by preparative column chromatography
5. Caffeine extraction from tea, isolation and crystallization
6. Acid-base extraction separation: iquid-liquid exctraction of a mixture of substances by exploiting their different acid-base properties
7. Organic compounds reactivity: reduction of ethyl vanillin, product recovery, yield determination.

Prerequisites

Background: basic knowledge of stoichiometry, general and organic chemistry.
Prerequisites: none

Teaching form

Chemistry laboratory practicals. The attendance to practicals is mandatory (75% of module hours).
Teaching language: italian.

Textbook and teaching resource

Learning material (handouts and slides) is available at the e-learning platform of the course.

Semester

Second semester

Assessment method

written test

Office hours

Contact: on demand, upon request by mail to lecturers