Chemistry of Biomolecules

ECTS
6 credits

Component
UFR Chimie-Biologie

- **Teaching language(s):** English
- **Open to exchange students:** Yes
- **Code d'export Apogée:** YAX7MB14

Presentation

Description

This course focuses on the chemistry, i.e. synthesis and reactivity, of peptides and saccharides. The basics of their synthesis will be first reviewed. Specific interactions of metal ions with those biomolecules will be then discussed as they play very important role in their structuration and function and thus in health and medicine.

Course parts

Chemistry of Biomolecules - CM	Lectures (CM)	30h
Chemistry of Biomolecules - TD	Tutorials (TD)	20h

Period : Semester 7

Skills

Skills: Knowledge of the typical protecting groups strategy used in carbohydrates and peptides chemistry / Knowledge of how metals interact with biological ligands / Knowledge about metal toxicity and metal complexes for imaging in medicine.

Bibliography

Details:
I. Carbohydrate Chemistry
Classification, configuration and conformation of monosaccharides / Mutarotation and
anomeric effect / Reactivity of monosaccharides / Selective and orthogonal protection in carbohydrate chemistry / Methods of glycosylation
II. Peptide Chemistry
III. Structure of peptides / Solution- and Solid-phase Peptide synthesis / Boc and Fmoc strategies/ Protecting groups / Synthesis of linear and cyclic peptides
IV. Metals and Biomolecules Speciation and formalism / Gadolinium complexes in MRI / Metallothioneins and heavy metal detoxification / Calcium and lectines, specific carbohydrate-binding proteins / Copper in Wilson's and Alzheimer's diseases

Useful info

Contacts

Program director

Sabine Chierici
Sabine.Chierici@univ-grenoble-alpes.fr

Place

Grenoble

Campus

Grenoble - University campus