

Microbiology

Introducing

Description

Section I Microorganisms

I - Reminder of nomenclature rules

II - Principles and methods of classification and identification II.1 Principles of classification; II.2 Identification characteristics and procedures; II.3

Main characteristics and classification of some microorganisms

Section II. Respiration, photosynthesis and microbial growth

Section III Microbial viruses

III.1 Definition and history; II.2 Phage morphology and structural diversity; II.3 Distribution in ecosystems; II.4 Phage infection cycles; II.5 Genetic material and replication/transcription/translation; II.6 The example of T4 and Lambda phages

II.5 Genetic material and replication/transcription/translation; II.6 The example of Phage T4 and Phage Lambda

Section IV Symbioses

IV.1 Definition IV.2 The human intestine IV.3 Corals

etc.). They will also need to understand and apply molecular methods based on nucleic acid analysis (use of nucleic probes, gene amplification, restriction or molecular profiling) or protein profiling.

In a second section, students will be able to independently investigate the reactions involved in respiration and photosynthesis of microorganisms and acquire the tools necessary to calculate average and specific growth rates.

A third section will focus on microbial viruses, and students will be expected to be able to describe their diversity, their ecological niche, and their role in regulating terrestrial and marine microbial biodiversity. They'll also need to know how to analyze and count them. The final section presents examples of symbiosis, human gut microbiota and corals.

Necessary prerequisites

I2BEBS10 Structural biochemistry of carbohydrates, lipids and proteins.

I2BEMI20 Microbiology

Objectives

The aim of the microbiology course is to learn the rules of microorganism nomenclature, as well as the principles and methods of classification and identification of microorganisms. Students must know the characteristics and procedures for identifying microorganisms based on traditional techniques (collection of information directly, after culture or based on biochemical methods, antigenic characteristics,

Évaluation

L'évaluation des acquis d'apprentissage est réalisée en continu tout le long du semestre. En fonction des enseignements, elle peut prendre différentes formes : examen écrit, oral, compte-rendu, rapport écrit, évaluation par les pairs...

Practical info

Location(s)

 Toulouse