UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Microbiology Laboratory

2021-2-H4601D005-H4601D017M

Aims

The course wants to prepare expert odontologists by the acquisition of knowledge in the discipline:

Laboratory of Microbiology: microbial agents responsible for infections and diseases of both general and odontostomatologic interests and understand the principles of microbiological diagnostics.

Contents

The course will provide,

Laboratory of Microbiology: knowledge and comprehension of the principles of microbiological diagnostics.

Detailed program

Laboratory of Microbiology:
General characteristics and classification of bacteria, viruses, fungi and protozoa pathogenic to humans. Host-parasite interactions. Mechanisms of microbial pathogenity. Physical and chemical methods for disinfection and sterilization. Infection control. Main methods useful in microbiological diagnostics. Main classes of antimicrobial agents. Prophylaxis of infections and use of vaccines. The microbial habitat of the oral cavity. Microbiology of dental plaque and microbial biofilm: structure and organization. Microbiological aspects of

dental caries. Microbiological aspects of periodontal diseases. Microbiological aspects of infections of the mouth. Notes on antimicrobial therapy and prophylaxis of oral infections.

Front Laboratory

1. Serial Dilutions
2. Antibiogram (MIC)
3. Bacterial growth curve with and without antibiotics
4. Gram stain and microscopic observation
5. Staining of the spores
6. Ellettroforesi
7. PCR, sequencing
8. Preparation of competent cells (by thermal shock)
9. Electroporation
10. Transformation for heat shock
11. Bacterial conjugation
12. Faringeo swab and research of Streptococcus pyogenes

Prerequisites

The goals of the
previous courses

Teaching form

Laboratory stage

Textbook and teaching resource

- Microbiologia - P.R. Murray, Ken Rosenthal, G.S. Kobayasky, M.A. Pfaller. EdiSES.

- Microbiologia
Odontoiatrica (4°edizione), P.D. Marsh, M. Martin. UNI.NOVA

- Oral Microbiology (5th edition) - P.D. Marsh, M. Martin. CHURCHILL LIVINGSTONE ELSEVIER

Semester

Second semester (March-June) of the secon year of course

Assessment method

Oral examination.

The oral examination will be preceded by a written multiple-choice test, comprising 90 questions with only one correct answer (among 4), aimed at evaluating global comprehension of microbiology program. The text will be passed with 51 exact answers, the value of each exact answer is 0.35 point.

The oral examination consists in the discussion of the remaining part of the integrated course, aimed at verifying the student ability to make connections and provide details. The final score will be the weighted mean of the two tests

Office hours

By appointment