



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Instrument-based Techniques

2122-1-I0302D005-I0302D021M

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#### Aims

To describe PCR and molecular tests based on it (also sample preparation)

#### Contents

To provide the fundamentals of the main principles of instrumental techniques employed in Clinical Molecular Biology laboratory.

#### Detailed program

Techniques for the lymphocyte separation from whole blood. DNA and RNA extraction, purification, quantification and storage: theory and practical aspects. Restriction enzymes: theory and diagnostic applications. Retro transcription reaction. Polymerase chain reaction (PCR): parameters for the amplification (denaturation, hybridization, extension) master mix. Amplification products identification (agarose-gel electrophoresis and hybridization techniques). Genetic mutation identification: indirect (Southern Blot, DGGE, SSCP, PTT, CCM) and direct methods (RFLP, ASA, ASO). PCR product sequencing. Viral nucleic acid assays (HCV, HBV, HIV).

#### Prerequisites

Biomedical Sciences

## **Teaching form**

Exercises

## **Textbook and teaching resource**

Teacher will provide teaching material.

## **Semester**

secondo semestre primo anno

## **Assessment method**

In itinere test, consisting of 20 written multiple choice test: if the student has not reached the required level, he/she will have to take an oral exam consisting in the discussion of some written questions.

## **Office hours**

By appointment required by mail

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