

## THE QUANTITATIVE PCR (7H)

### Program :

1. Theoretical presentation of the different principles of quantitative PCR
  - 1.1. Nucleic acid structure
  - 1.2. Organization and compaction
  - 1.3. Basic principles of amplification reactions
  - 1.4. Hardware
  - 1.5. Enzymes
2. Fields of application
  - 2.1. Research
  - 2.2. Biotechnology
  - 2.3. Diagnosis
  - 2.4. Crime
3. Extraction, purification of nucleic acids
  - 3.1. Extraction
  - 3.2. Purification
  - 3.3. Quantitative and qualitative analysis
4. Quantitative PCR quantification methods
  - 4.1. End-point PCR
  - 4.2. Semi-quantitative PCR
  - 4.3. Competitive PCR
  - 4.4. Real-time PCR
5. Measurement of mRNA expression using real-time PCR
  - 5.1. Different techniques
  - 5.2. Relative quantification
  - 5.3. Absolute quantification
  - 5.4. Analysis of protocols
  - 5.5. Interpretation and discussion of results