UNIVERSITAT DE BARCELONA

# BIOMARKER DISCOVERY AND VALIDATION.
# SAMPLE MANAGEMENT AND BIOBANKS

## STUDY PLAN 2022-2023

Coordinated by Dr Aina Rodríguez, phD, head of Core Facilities and Biobank Coordinator at IDIBAPS and Dr Maria Carlota Londoño, MD, PhD, senior specialist in Hepatology, Hospital Clinic Barcelona, IDIBAPS, CIBEREHD.

## GENERAL INFORMATION

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|---|---|
| Subject Name | Biomarker discovery and validation. Sample management and biobanks. |
| Code | 573670 |
| Type | Compulsory |
| Teaching | Second semester |
| Coordinator | Dr. Aina Rodriguez and Dra. Maria Carlota Londoño |
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| ECTS credits | 4 |

## OBJECTIVES

- To provide students with scientific, conceptual and methodological knowledge on the design of translational studies for biomarkers discovery and validation and introduce the concept of precision medicine.
- To deeply understand the ethical and legal framework in sample management and the role of biobanks and their possible applications in Biomedicine.

## COMPETENCES TO BE GAINED DURING THE STUDY

S1: Design of studies on predictive, prognostic, diagnostic or pharmacodynamic biomarkers (BKs).

S2: Knowledge in the clinical usefulness of pharmacogenetic and pharmacodynamic biomarkers to achieve personalized pharmacological treatments.

S3: Understanding of the clinical benefit to integrate in clinical practice valid biomarkers for patient stratification and clinical care improvement.

S4: Know the legal and ethical principles of compliance.

S5: Appreciate the main advantages of Biobanks as a tool to achieve quality compliance.

S6: Manage biological sample collections for research studies.

S7: Translate analytical data resulting from studies through statistical packages.

## THEMATIC BLOCKS

1. Biomarker discovery and validation. Predictive and prognostic biomarkers in transplantation and immune mediated inflammatory diseases.

2. Prognostic and predictive biomarkers of cardiovascular risk and treatment response. Predictive biomarkers of HIVvaccines.
3. Predictive Biomarkers of vaccines response.
4. Genetic and Pharmacogenetic Biomarkers: patient stratification and individual treatment.
5. Legal and ethical principles. Quality and security in the laboratory
6. Sample management and biobanks.
7. Analysis and interpretation of the results.

## METHODOLOGY

Total training hours: 4 credits ECTS x 25h/credit = 100h

a) Face-to-face (48h):
- Lectures and practical cases
- Exam

b) Home training (52h):
- Individual and group work

## EVALUATION

To pass the subject, students must obtain a minimum of 50 points. The score will be established as follows:

**Evaluation criteria:**

**Attendance:** 50% of the overall grade.
Attendance will be evaluated as:   95%-100% → 50 points / 80% - 95%→ 40 points / 30-80% →20 points / <30% → Subject Failure

**Written exam**: 50% of the overall grade.

To pass the subject, students will have to fulfill three requisites: Attendance-score ≥ 20/50, exam-score ≥20/50, and overall score (attendance + exam) ≥ 50/100. 0,25 points will be deducted for every wrong answer.

Reevaluation:  In case of failing the ordinary evaluation, students will have to critically appraise 2 scientific articles and send the analysis by email to the coordinators. The re-evaluation final score will never get over 50 points.

## REFERENCES

References will be provided at the beginning of the course by each of the lecturers.