

MEDICAL BIOTECHNOLOGY AND NANOBIO TECHNOLOGY (LM49)

(Lecce - Università degli Studi)

Teaching CELLULAR BIOTECHNOLOGIES

GenCod A004552

Owner professor Cecilia BUCCI

Teaching in italian CELLULAR BIOTECHNOLOGIES

Teaching CELLULAR BIOTECHNOLOGIES **Language** ENGLISH

Course year 1

SSD code BIO/13

Curriculum PERCORSO GENERICO/COMUNE

Reference course MEDICAL BIOTECHNOLOGY AND

Course type Laurea Magistrale

Location Lecce

Credits 9.0

Semester First Semester

Teaching hours Front activity hours: 74.0

Exam type Oral

For enrolled in 2018/2019

Assessment Final grade

Taught in 2018/2019

Course timetable

<https://easyroom.unisalento.it/Orario>

BRIEF COURSE DESCRIPTION

Synthetic program:

Genetic manipulation of eukaryotic cells. Methods for expressing or silencing wt and mutant genes in cultured animal cells. Cellular and molecular biotechnologies to identify protein-protein interactions: the two-hybrid system and its variants, the phage display. Biology of stem cells: embryonic, foetal and adult. Applications of stem cells. Induced pluripotent stem cells. Regenerative medicine. Gene therapy: vectors, methodologies and scopes. Cloning and therapeutical cloning.

Program of practical laboratory classes:

Transfection of mammalian cells. Use of GFP to monitor transfection efficiency. Transfection of GFP-tagged proteins to establish their intracellular localization in mammalian cells. Immunofluorescence analysis. Differentiation of cultured mammalian cells.

REQUIREMENTS

No formal prerequisites are required. However, a solid knowledge of cell biology, molecular biology and genetics will be helpful to follow the course with profit.

TEACHING METHODOLOGY

Formal lectures (8 cfu= 64 hours) making use of slides and hypertext links to specific Web sites and practical laboratory classes (1 cfu = 10 hours). Outside these activities, the students are expected to read assigned papers from scientific literature.

ASSESSMENT TYPE

The evaluation of the oral examination will be based on the level of the theoretical knowledge and practical abilities acquired through the description of topics and methodologies (70%), on the critical and problems solving abilities and (20%) and on communication skills (10%).