

In vitro Toxicity Assays

Synopsis

The topics covered will allow getting knowledge in main aspects of cell culture production and application of in vitro assays to evaluate toxic effects of contaminants. It is highly recommended that the students have a solid background in Biology before registering on this course.

Aims

- to introduce the students to the wide range of sampling techniques applicable to operational oceanography

Objectives

At the end of the Unit, you should:

1. Understand the processes to produce stable cell lines, immortalization and production of recombinant cell lines.
2. Understand the methodology to obtain and maintain cell lines

Key Skills Acquired

At the end of the Unit, you should be able to:

1. Apply fundamental techniques for the culture of animal tissues
2. Produce functional analysis in cell cultures.

Syllabus

The following issues are addressed:

1. Application of cell culture techniques in biomedicine and biology
2. Introduction to animal cell cultures.
3. Cell culture environment
4. Cell culture laboratory
5. Cell culture types and lines
6. Biology of in-vitro cells
7. Functional methods applied to the study of animal cell cultures
8. In vitro toxicity tests

Learning & Teaching

- Lectures: 12 hr
- Laboratory practicals: 15 hr
- Tutorials: 8 hr
- Seminars: 5 hr

Teaching Staff

MP Cajaraville (Coord.),

Semester: 2

Timetable slot To be advised

ECTS: 4

Level: Optional

Bibliography

- Dhawan, A., Kwon, S. (Eds.). 2017. In vitro Toxicology. Academic Press. ISBN: 9780128046678
- Blasco, J., Corsi, I. (Eds.). Ecotoxicology of nanoparticles in aquatic systems. CRC Press. ISBN 9781138067264
- Freshney, R.I. (Ed.). 2010. Culture of Animal Cells: A manual of basic technique and specialized applications. Wiley-Blackwell Publisher. ISBN 978-0470528129

Assessment

- Active participation in the course (10%)
- Written questionnaire with 5 short questions (30%)
- Elaboration of the practical notebook (25%)
- Elaboration and presentation of a case study seminar (35%)

In the written questionnaire a minimum mark of 4 must be achieved to be able to get the final mark.

Course Evaluation

By completion of University Unit Evaluation Questionnaire by students, annual assessment by Unit Coordinator.