Universidad Francisco de Vitoria UFV Madrid

Teaching guide

IDENTIFICATION DETAILS

Degree:	Biomedicine
Field of Knowledge:	Science
Faculty/School:	Experimental Science
Course:	GENETICALLY MODIFIED ORGANISMS
Type:	Compulsory
ECTS credits:	4,50
Year:	4
Code:	2165
Teaching period:	Seventh semester
Area:	Biomedical Research Tools
Module:	Experimental Methodology in Biomedicine
Teaching type:	Classroom-based
Language:	Spanish
Total number of student study hours:	112,50

SUBJECT DESCRIPTION

Las tecnologías desarrolladas en los últimos 30 años, aproximadamente, para modificar de manera, más o menos, dirigida el genoma de diversos organismos animales ha permitido progresar enormemente en la generación de modelos fisiológicos con los que dar respuesta a interrogantes de diversa índole biológica. Gracias a técnicas como el Gene Targeting, la microinyección de DNA foráneo o, más recientemente, las tecnologías de Genome Editing (CRISPR/Cas 9, entre otras) es posible averiguar la función biológica de un gen en un contexto más próximo a la realidad que el uso de cultivos celulares y otras herramientas in vitro. La generación de modelos Knock-Out, Knock-In, Transgénicos... permite estudiar enfermedades complejas como el cáncer (poligénica, multifactorial).

SKILLS

Basic Skills

Students must have demonstrated knowledge and understanding in an area of study that is founded on general secondary education. Moreover, the area of study is typically at a level that includes certain aspects implying knowledge at the forefront of its field of study, albeit supported by advanced textbooks

Students must be able to apply their knowledge to their work or vocation in a professional manner and possess skills that can typically be demonstrated by coming up with and sustaining arguments and solving problems within their field of study

Students must have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that include reflections on pertinent social, scientific or ethical issues

Students must be able to convey information, ideas, problems and solutions to both an expert and non-expert audience

Students must have developed the learning skills needed to undertake further study with a high degree of independence

General Skills

Acquire the necessary skills for analysis, criticism and synthesis applied to the issues pertaining to the field of biomedicine.

Acquire the skills needed for experimental work: its design and execution, the compilation of results and the obtention of conclusions, understanding the limitations of an experimental approach.

Specific skills

To be able to define and be able to apply genetic engineering techniques to the study of the expression and genetic function in various systems, as well as the handling and modulation of said expression.

To be familiar with the different methods for obtaining genetically modified animal organisms as a basis for animal experimentation and its relevance for the study of the different areas of biomedicine.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
45 hours	67,50 hours