

27136 - Veterinary Biotechnology

Syllabus Information

Academic year: 2024/25

Subject: 27136 - Veterinary Biotechnology

Faculty / School: 100 - Facultad de Ciencias

Degree: 446 - Degree in Biotechnology

ECTS: 6.0

Year: 4

Semester: Second semester

Subject type: Optional

Module:

1. General information

A subject with an eminently applicative orientation, whose general objective is the application of biotechnology concepts to obtain profitable, quality and safe animal products

Emphasis will be placed on the study of the effect of welfare, genetic traits and diseases on the performance and quality of animal products

2. Learning results

- To know and understand the concept of animal welfare in a broad sense and its physiological indicators.
- To understand the effect of welfare on the production and quality of animal products.
- To know the possibilities of applying genetic concepts to the improvement of animal production and health.
- To know the existence of new therapies based on stem cells currently applied in animal pathologies.
- To know and understand the importance of the application of biotechnology to the diagnosis of animal pathologies susceptible to be transmitted to humans, as well as the diagnosis of food pathogens.
- To value the importance of animal disease prevention through the use of vaccines or stimulation of the immune system
- To know the importance of biomarkers that allow a better control of animal diseases and their impact on human health

3. Syllabus

Biotechnological aspects of animal welfare

General concepts. Physiological and behavioural bases. Assessment and study methods. Physiological indicators. New technologies. Meat transport and quality. Laboratory animal welfare.

Genetic biotechnology applied to the improvement of animal production and health

Molecular markers. Animal genetic identification. Genetic characterization of breeds. Genetic susceptibility to diseases. Domestic animal models of human diseases. Biomarkers, gut microbiota and neurodegeneration. Mesenchymal stem cells: New therapies in veterinary medicine and in vitro models.

Biotechnological aspects of animal disease diagnosis and prevention

Biotechnological diagnostic systems for animal health diseases, zoonoses and food pathogens. Vaccines and immunomodulators for disease prevention in animals. Strategies for vaccine formulation in animal health.

4. Academic activities

Master classes 40 hours

Participative theoretical sessions in which the contents of the subject will be presented.

Practical activities 18 hours

- Laboratory practice, analysis of physiological markers of animal welfare.
- Visit to the Molecular Genetics laboratory, interpretation of genetic identification results.
- Visit to a high biosafety laboratory to gain knowledge about the operation and management of this type of facility . Diagnostic techniques for animal diseases.

Seminars 2 hours

Seminars given by experts in one of the topics in section 3.

5. Assessment system

- Final written test with multiple-choice and short questions (70% of the final grade).
- Laboratory practices and seminars, the autonomy and participation of the student and the reports will be evaluated (30% of the final grade).

To pass the subject it is necessary to obtain a 5 out of 10 in each of the parts.

The option of a global test is also open to students who consider this type of evaluation more appropriate.

6. Sustainable Development Goals

- 4 - Quality Education
- 8 - Decent Work and Economic Growth
- 9 - Industry, Innovation and Infrastructure