Course Specifications
Valid as from the academic year 2018-2019

Course

Immunology (G000732)

Valid as from the academic year 2018-2019

Course offerings and teaching methods in academic year 2018-2019

A (semester 1) Dutch
lecture 30.0 h
practicum 25.0 h

Lecturers in academic year 2018-2019

Favoreel, Herman DI04 lecturer-in-charge
Devriendt, Bert DI04 co-lecturer
Stuyven, Edith DI04 co-lecturer

Offered in the following programmes in 2018-2019

Bachelor of Science in Veterinary Medicine

5 A

Teaching languages
Dutch

Keywords
Immunology, humoral, cellular, antibodies, cytotoxicity, lymphocytes, cytokines, pig, cattle, horse, dog, cat, poultry

Position of the course
To give insights in innate and adaptive immune mechanisms in small and large animals, as well as in the assays to detect and measure immune responses. Hereto, knowledge has to be obtained on development of the immune system, on the cells involved in immune responses, the molecules produced and expressed by these cells, the function of these cells and their molecules and the interactions between immune cells and of immune cells with other cells. These objectives links up with the objectives of the bachelor in veterinary medicine namely to obtain the basic knowledge on biomedical animal sciences.

Contents
During the theoretical part, the main components of the innate (a.o. complement, phagocytes, NK cells, acute phase response) and the adaptive immune response (a.o. T lymphocytes, B lymphocytes, antigen presentation, antibodies) will be discussed, along with the cytokines, the tissues of the immune system, prophylaxis, tolerance and vaccination. The practical part of this course has the intention to train students in test for the measurement of humoral (immunoprecipitation, agglutination, ELISA, immunoblotting, ELIspot) and cellular immune responses (cytokine-detection, lymphocyte proliferation, immunofluorescence staining, flow cytometry, phagocytosis) and is an illustration of the theory.

Initial competences

Taking up this course has to conform with the existing GiT rules of the academic year in which the course is being taken up. This course can only be followed when the student has already taken up the courses 'General Histology' and 'Physiology' in the context of a study at a higher education institute and/or university or when the begin competences of the student have been checked by the individual teacher and have been considered satisfactory.

Final competences

1. being able to name and understand the function of the cellular and humoral components of the innate immune system
2. being able to name and understand the function of the cellular and humoral
components of the adaptive immune system
3. being able to name and understand the function of the most important tissues of the
immune system
4. have insight in how extracellular signals, e.g. cytokines and antigen recognition, can
lead to activation of immune cells
5. have insight in the different types of immunoprophylaxis, both passive and active
immunity
6. have insight in the basic aspects of the scientific evolution of immunology
7. being able to apply typical immunological laboratory techniques
8. being able to independently search for scientific information related to the taught
material
9. being able to orally communicate about the acquired knowledge and the reasoning
that can be derived from this knowledge, making use of scientific/medical language

Conditions for credit contract
  Access to this course unit via a credit contract is determined after successful competences
  assessment

Conditions for exam contract
  This course unit cannot be taken via an exam contract

Teaching methods
  Lecture, practicum

Extra information on the teaching methods
  Theory is given as interactive lectures. Practicals as demonstrations and exercises.

Learning materials and price
  The course material consists of powerpoints slides that are provided to the students via
  Minerva. Standard books on veterinary and human immunology are recommended for
  further reading.

References

Course content-related study coaching
  During the course, the lecturers are stressing the important parts. Furthermore, they
  stimulate the students to use handbooks for further reading and to discuss the course
  contents with other students and with the teachers

Evaluation methods
  end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period
  Written examination, oral examination

Examination methods in case of periodic evaluation during the second examination period
  Written examination, oral examination

Examination methods in case of permanent evaluation
  Participation, report

Possibilities of retake in case of permanent evaluation
  examination during the second examination period is possible

Extra information on the examination methods

Calculation of the examination mark
  Not participating at practical courses without acceptable reason can lead to failure.
  To be able to pass the course, students need to pass (score of >= 10/20) at least two of
  the three parts of the exam (theoretical part of Prof. Favoreel, theoretical part of Prof.
  Cox/Dr. Devriendt and practical part). In case a student does not pass at least 2 of the
  3 parts (so 2 parts < 10/20), the student can reach a maximal final score of 9/20

(Approved)