

Course description	
Course	Immunohistochemical Methods in Veterinary Histology
Department	Department of Anatomy and Histology
Language	English
Nature	Optional
Year/semester	1st year, spring-term
Credits (ECTS)	2
Lectures (hour/semester)	10
Plenary lectures (hour/semester)	
Practicals (hour/semester)	20
Responsible teacher	Dr. Katalin Halasy and Dr. Bence RÁCZ
Teacher(s)	Dr. Katalin Halasy, Dr. Bence RÁCZ, Dr. Gyula Balka, and invited speakers
Prerequisites	successful exams of histology, biochemistry, immunology
Learning outcome (include skills and competencies, if any)	
This 4 day-course is primarily practice-oriented. It gives insight into the theoretical background of the method and most of the time is spent in the lab performing a complete pre-embedding immunostaining.	
Outcome assessment	
Each student is expected to prepare an own immunostained section suitable for prompt light microscopic investigation	
Online test after the completion of the course.	
Weekly schedule of lectures and practicals.	
WEEK	Lecture topics
Week 1	The theoretical foundations of immunohistochemistry. Antisera, antibodies, their production and characterization
Week 2	Preparation of animal tissues for the immunohistochemical reaction. Sampling, fixation and pruning methods. Immunohistochemical methods applicable at the light microscopic level
Week 3	Computer evaluation of the immunohistochemical reaction: densitometry
Week 4	Quality control and epitope exploration in immunohistochemistry
Week 5	Immunohistochemical methods applicable at the electron microscopic level; Demonstration of pre- and postembedding immune reactions under an electron microscope.
Week 6	PCR, Sanger sequencing, Next Gen sequencing, in situ hybridization
WEEK	Practical topics
Week 1	Sectioning of organs using a vibratome
Week 2	Initiation of incubation, preparation of sections and in vitro cell culture up to primary serum
Week 3	Preparation of sections and visualization of the immune response
Week 4	Drawing the developed sections on a slide and examining them under a microscope
Week 5	Presentation of fluorescently labeled in vitro cell culture and sections by confocal laser scanning microscopy
Recommended literature	
Cuello AC (Ed.): Immunohistochemistry Wiley, 1993	
The presentations of the lectures (will be provided as handout)	
Note(s)	
Since this is a 4-day-course, we will provide a daily schedule of lectures and labwork.	