Study program: Integrated academic studies in pharmacy

Type and level of the study program: integrated academic studies

Course title: Experimental animals and experiment models (PhIII-EAEM)

Teacher: Isidora N. Samojlik, Momir M. Mikov, Aleksandar L. Rašković, Saša N. Vukmirović, Boris T. Milijašević, Nebojša P. Stilinović, Ivan Đ Čapo

Course status: elective (necessary before the experimental/graduation paper on laboratory animals)

ECTS Credits: 3

Condition: -

Course aim

The main objective of this course is to introduce students to the methods, possibilities and conditions of work with lab animals in biomedical research.

Expected outcome of the course

The students will get acquainted with conditions and possibilities of working with experimental animals and particular experimental models of importance for in vivo biomedical research. The students will get informed on legal regulations pertaining to protection of welfare of experimental animals, animal models and species used in particular investigations, the housing and care of experimental animals, application of investigated substances, monitoring the effects of applied substances, euthanasia and safe disposal of residual/waist material. The students will be trained for experimental work with laboratory animals (handling, administration of substances, sampling of biomaterial, anesthesia, monitoring of stress and pain parameters...) as well as for creating relevant documentation aimed to obtain necessary approvals for experimental work with laboratory animals.

Course description

Theoretical education:

Legislation and welfare of experimental animals in biomedical research. The principles of ethics of working with experimental animals. The rule of "3-R's" and "five freedoms" in working with experimental animals. Categories of invasiveness in animal experiments. Alternative methods for in vivo experiments. Laboratory (experimental) animals - classification and nomenclature, types. Maintenance of experimental animals - accommodation, food and drinking water, hygiene, monitoring health status (stress and pain). Animal models - the model definition, requirements, selection. Basic rules of handling experimental animals - keeping, labeling, application of experimental substances, sampling material for analysis. Experimental models in non-anesthetized animals. Experimental models in anesthetized animals. Euthanasia and risks when working with experimental animals.

Practical education: exercises, other forms of education, research related activities:

Making requests to the Ethics Commission for permission to work with experimental animals , in accordance with existing laws. Practical introduction to the way of maintenance of experimental animals. Practically mastering the skills of handling the experimental animals - keeping , labeling, applications of experimental substances , sampling material for analysis. Development of an experimental model in accordance with a request to the Ethics Commission (research plan that includes work on oglenim animals). Practical mastering of material handling animal products (samples , carcasses of animals euthanased), substances and equipment used in the planned experiment

Literature

Compulsory

1. Animal Welfare Act, Official Gazette of RS, No. 41/09
2. The regulations on conditions for entry into registry of animal experiments, Official Gazette of RS, No. 39/10.
3. Chow P, Ng R, Ogden B. Using animal models in biomedical research. World Scientific Publishing Co. Pte. Ltd., Singapore 2007.
4. Wahlsten D. Mouse Behavioral Testing. Academic Press, Elsevier, London NW1 7BY, UK, 2011.
5. Hau J, Van Hoosier GL. Handbook Of Laboratory Animal Science, Vol I &II, CRC Press, Boca Raton, Florida 33431, 2003.

Additional

1. Kaliste E. The Welfare of Laboratory Animals. Springer, Dordrecht, The Netherlands, 2007.

Number of active classes				Other:
Lectures: 30	Practice: 15	Other types of teaching:	Research related activities:	

Teaching methods Theoretical and practical

Student activity assessment (maximally 100 points)

Pre-exam activities	**points**	**Final exam**	**points**
Lectures	20	Written	40
Practices	20	Oral	
Colloquium		.....	
Essay	20		