Study program: REPRODUCTIVE BIOLOGY

Course title: Endocrine disruptors and reproduction

Teacher: Nebojsa Andric, Kristina Pogrmic Majkic, Svetlana Fa

Course status: elective

ECTS: 4

Requirements: -

Course objectives

Acquiring knowledge about endocrine disruptors and mechanism of their action on the reproductive system.

Learning outcomes

After completion of the course, it is expected that the students should

- Define endocrine disruptors and explain mechanism of action at the cellular and the tissue levels
- Describe the effect of endocrine disruptors during embryogenesis and link it with development of diseases in adults
- Describe the effect of endocrine disruptors on the female and male reproductive systems and link it with the diseases of reproductive system.
- Describe the effect of endocrine disruptors on puberty
- Explain the methods for analysis the toxic effect of environmental chemicals
- Independently select scientific publication and prepare presentation on selected topic

Syllabus

Theoretical instruction

Environmental chemicals as a endocrine disruptors; Molecular mechanism of endocrine disruption; Epigenetic effects of endocrine disruptors; Low dose effect; Effect of endocrine disruptors during neonatal and fetal development and implication on adult reproductive system. Endocrine disruptors and male reproduction; Endocrine disruptors and female reproduction; Endocrine disruptors and pregnancy; Endocrine disruptors and effects on timing and progression of puberty. Endocrine disruptors and related systems that have implication for reproduction: the neuroendocrine system, the immune system, the thyroid system; Endocrine disruptors and cancers of reproductive tract; Strategy in toxicological testing: in vivo and in vitro approaches.

Seminar instruction

The students will select scientific publication on the specific topic and prepare seminar paper.

Literature

1. Woodruff, TJ, Janssen SJ, Guillette Jr LJ, Guidice LC. Environmental Impacts on Reproduction Health and Fertility, Cambridge University Press, 2010
2. Fudvoye et al. Endocrine disrupters. Vitamins and Hormones, Volume 94, Elsevier 2013.
3. Diamanti-Kandarakis E., Gore A.C. (Eds.) Endocrine Disruptors and Puberty, Humana press, 2012.
4. Review papers related to course topics.

Weekly teaching load

Lectures: 2	Seminar work: 0+0+1

Teaching methods

Teaching, consultation; seminars

Evaluation of knowledge (maximum score 100)

Pre-exam obligation	Points	**Final exam**	Points
Student engagement in lectures		Test/Written exam	
Practical laboratory		Oral exam	60
Seminar	40		