Course description

Informing students on course requirements

Program: PhD full-time training
Course: **Obligate intracellular bacteria**
Course code: AOKDI-ASZV-13
Academic year/Semester: 2025/26 **1-2 semester**
Educator and contact details (e-mail): **Dr. habil. Virok Dezső, virok.dezso.peter@med.u-szeged.hu**
Type of course: lecture/seminar/practice/laboratory
Weekly hours of the course: 2
Credit vale of the course: 6
Type of examination: final exam at the end of semester, practice exam, other:……..
Preliminary requirements (preliminary academic performance or completed course required to fulfill the purposes and requirements of the course): **none**
Purpose of course: General characterization of medical microbiology of human pathogenic obligate intracellular bacteria Pathogenesis of Chlamydia trachomatis infections Description of the vaginal microbiome and its role in the prevention of Chlamydia and other infections
Outcome requirements of the course (specific academic results to be established by the course): Knowledge of intracellular reproduction of obligate intracellular bacteria, transmission, symptoms, virulence, diagnostics, therapy, prevention Pathogenesis of Chlamydia trachomatis infections, knowledge of the immune response to infection Knowledge of the basic composition of the vaginal microbiome, the role of the vaginal microbiome in STI prevention and fertility
Topics:

Replication of Chlamydia trachomatis, Chlamydia pneumoniae, Chlamydia psittaci, human infections, transmission, symptoms, virulence, diagnostics, therapy, prevention

Replication of human pathogenic Rickettsiae, human infections, transmission, symptoms, virulence, diagnostics, therapy, prevention

Replication of Coxiella burnetii, human infections, transmission, symptoms, virulence, diagnostics, therapy, prevention

Most common vaginal microbiome states

Most common bacterial species in the vaginal microbiome

Antimicrobial effect of vaginal lactobacilli

The role of vaginal lactobacilli in STI prevention and fertility

Supporting methods to achieve learning outcomes:
Scientific papers, presentation materials

It is possible to learn about measuring Chlamydia trachomatis growth using immunofluorescence and quantitative PCR methods

Evaluation of the acquisition of expected learning outcomes:
Attendance at lectures is mandatory. Two absences are allowed, in case of more than two absences, the absence must be justified. No make-up is possible.

The condition for completing the course is to create a short powerpoint presentation related to a given topic of the course.

The course concludes with an oral exam.

Mandatory reading list:
Murray: Medical Microbiology ISBN: 0323673228

Recommended reading list:
Lecture materials available on CooSpace

Scientific publications available for download with targeted PubMed search

Indicating course requirements on CooSpace scene (summary)

Description (public):

The course aims to provide PhD students with a comprehensive understanding of the basic microbiology of intracellular bacteria and their practical medical implications, with a special focus on Chlamydia trachomatis. In addition, we will review the composition of the vaginal microbiome and its importance for the prevention of Chlamydia trachomatis and other infections.

Requirements:
Reproduction of human pathogenic intracellular pathogens, human infections, transmission, symptoms, virulence, diagnostics, therapy, prevention

Knowledge of the composition of the vaginal microbiome, the essential role of lactobacilli in maintaining normal vaginal flora

Topics:
1. Reproduction of Chlamydia trachomatis, Chlamydia pneumoniae, Chlamydia psittaci, human infections, transmission, symptoms, virulence, diagnostics, therapy, prevention
2. Reproduction of Chlamydia trachomatis, human infections, transmission, symptoms, virulence, diagnostics, therapy, prevention
3. Reproduction of human pathogenic Rickettsiae, human infections, transmission, symptoms, virulence, diagnostics, therapy, prevention
4. Reproduction of Coxiella burnetii, human infections, transmission, symptoms, virulence, diagnostics, therapy, prevention
5. Possibilities of examining the vaginal microbiome - next-generation sequencing
6. Most common vaginal microbiome states, compositions
7. Lactobacillus species occurring in the vaginal microbiome
8. Antimicrobial effect of vaginal lactobacilli
9. Bacteria occurring in bacterial vaginosis
10. Most common sexually transmitted transmissible infections
11. The role of vaginal lactobacilli in the prevention of STI
12. The role of vaginal lactobacilli in fertility

Required literature: Murray: Medical Microbiology ISBN: 0323673228

Recommended literature: Notes and lecture materials available on CooSpace

Scientific publications available for download via targeted PubMed search

The PhD course ends with an oral exam