

Cultivation, microscopy and identification methods for the detection of mycobacteria

The cultivation of mycobacteria is still considered to be a “gold standard” for the detection and identification of mycobacteria. Prior to the cultivation of field samples the appropriate decontamination method has to be applied. Culture methods also facilitate the diagnostics of mycobacterial infections which cannot be detected by microscopy diagnosis. The basic examination method in mycobacterial diagnostics is microscopy and subsequent PCR confirmation. Microscopy staining according to Ziehl-Neelsen, based on the acid-fast features of lipopolysaccharides in the mycobacteria cell wall is used.

OBJECT OF THE COURSE

The course will be focused on the cultivation of mycobacteria from various tissue samples and also from the environment (faeces, soil, etc.). Theoretical information about the types of media for mycobacterial identification, their characteristics, and the conditions of cultivation will be provided. Mycobacterial growth on solid and liquid media will be demonstrated and analysed. In the case of photochromogenic bacteria the photochromogenicity test will be performed. Emphasis will be placed on a thorough practical encompassment of the Ziehl-Neelsen staining technique in investigated samples.

The course is primarily intended for researchers involved in microbiology and in the medical diagnostics of mycobacteria, but all participants eager to learn about the cultivation and identification of mycobacteria are welcome. The participants should have a basic knowledge in microbiology and should be acquainted with recommended literature related to the course.

COURSE CONTENT

1. Cultivation: types of cultivation media, their preparation and composition (solid and liquid media). Inoculation of mycobacteria into liquid (MGIT based on M7H9 medium, Sula medium) and solid (Herrold's egg yolk medium, Stonebrink medium) media - 1 day
2. Cultivation examination of samples from the environment, faeces and tissues (0.75% HPC method for *Mycobacterium avium* subsp. *paratuberculosis*, NaOH+HCl method for other mycobacteria, Zephiran method) - 2 days
3. Ziehl-Neelsen staining, photochromogenicity test - 1 day
4. Evaluation of results, discussion - 1 day

During the course methods will be practically demonstrated and explained by a supervisor and the participant will have the possibility to practice all of the methods. The course will run over 5 working days. If the applicant wishes to bring samples for cultivation and identification the VRI can provide this service on the basis of a preceding arrangement (the price will be calculated according to the number of samples and is not included in the price of course).

All successful participants will receive a certificate of attendance.

GENERAL INFORMATION

Code:	06-CLT-1
Course Leader:	Mgr. Vladimir Beran
Duration:	5 working days
Registration fee:	€ 920 (materials for the course, lunches)
Other stay expenses:	about € 55 per day (accommodation + others)
Language:	English
Location:	Brno, Czech Republic

For more information please contact:

Mgr. Radka Pribylova
Veterinary Research Institute, v.v.i.
Department of Food and Feed Safety
Hudcova 70, 621 00 Brno, Czech Republic
Tel: +420 5 3333 1615
E-mail: pribylova@vri.cz