



**Target Audience**

16 – 22 participants comprising trainees in clinical microbiology and infectious diseases and molecular biologists working in clinical microbiology.

**Faculty Members**

- Ana Budimir, Zagreb, Croatia
- Helena Cetkovic, Zagreb, Croatia
- Alexander Friedrich, Münster, Germany
- Hajo Grundmann, Bilthoven, The Netherlands
- Sara Hæggman, Solna, Sweden
- Dag Harmsen, Münster, Germany
- Smilja Kalenic, Zagreb, Croatia
- Dimitar Nashev, Sofia, Bulgaria
- Raquel Sá-Leão, Oeiras, Portugal
- Leo Schouls, Bilthoven, The Netherlands
- Luc Vauterin, Sint-Martens-Latem, Belgium

Contact

**Administrative Secretariat**

Dubravko Sijak  
 Clinical Hospital Centre Zagreb  
 Department of Clinical and Molecular Microbiology  
 Kispaticeva 12  
 10 000 Zagreb, Croatia  
 Phone +385 2367 318  
 dsijak2@gmail.com

**Pictures on titlepage (from left to right):**

Croatian National Theatre, Sava River, King Tomislav Square

**Pictures on the inside:**

PFGE dendrogram, Gel electrophoresis, PFGE fragments, isolation of DNA, DNA sequencing



© ESCMID, November 2009



ESCMID Postgraduate  
 Technical Workshop

**Molecular Typing Methods  
 for Bacterial Pathogens**

**Zagreb, Croatia  
 26 – 30 April 2010**

Registered Society, Munich, Germany, No. 10956



# ESCMID Postgraduate Technical Workshop

## Molecular Typing Methods for Bacterial Pathogens

### Organizer

ESCMID Study Group for Epidemiological  
Markers (ESGEM)

### Course Coordinators

Ana Budimir, Zagreb, Croatia  
Smilja Kalenic, Zagreb, Croatia  
Sara Haeggman, Solna, Sweden  
Alexander Friedrich, Münster, Germany

### Course Objectives

To provide participants with theoretical and practical information - including hands-on experience - on epidemiological typing methods. The practical part of the course focuses on PFGE and PCR-based typing methods (e.g., *spa*, *SCCmec*, MLVA and MLST) of *Staphylococcus aureus*, ESBL-producing Enterobacteriaceae, non-fermentative Gram-negatives (*Pseudomonas* and *Acinetobacter*), enterococci, and *Streptococcus pneumoniae*.

## Course Programme

### Course Lectures

- Molecular typing methods for bacterial pathogens – introductory overview
- PCR-based typing methods – principles, and tools for data analysis; significance of typing in the clinical laboratory; usefulness at local and global level
  - *spa* typing
  - *SCCmec* typing
  - MLVA
  - MLST
- Pulsed-field gel electrophoresis (PFGE) – principles, and tools for data analysis; significance of typing in the clinical laboratory; usefulness at local and global level
- Software for data analyses
- Molecular epidemiology of:
  - *Staphylococcus aureus*
  - *Streptococcus pneumoniae*
  - *Escherichia coli*
- Typing networks and databases

### Practical Sessions

- DNA preparation for PCR
- DNA preparation for PFGE (cell lysis and proteinase K digestion in agarose plugs)
- Preparation of PCR reaction mixtures for *spa* typing, *SCCmec*, MLVA and MLST
- Agarose gel electrophoresis of PCR products
- Staining and photographing of PCR agarose gels
- Purification of PCR products
- Preparation of sequencing reaction mixtures for *spa* typing and MLST
- Restriction endonuclease digestion of DNA for PFGE
- PFGE agarose gel preparation, sample loading and gel electrophoresis
- Analysis of *spa* and MLST sequencing results (trace files)
- Analysis of MLVA PCR results (gel images and automated DNA sequencer data)
- Analysis of *SCCmec* PCR results
- Staining and photographing PFGE agarose gels
- Analysis of PFGE results (gel images)
- Participants' presentations - describing and discussing experimental results

## Organization

### Course Venue

University of Zagreb, School of Medicine  
Clinical Hospital Centre Zagreb  
Dept of Clinical and Molecular Microbiology  
Kispaticeva 12  
10 000 Zagreb, Croatia  
Phone +385 2367 318

### Application Procedure

The application form can be found on the ESCMID website at [www.escmid.org/education](http://www.escmid.org/education). Please return it to the course administrative secretariat by 25 February 2010.

### Registration Fee

EUR 900 for ESCMID members  
EUR 1'100 for all others

The fee includes the scientific sessions, printed course material, lunches, coffee breaks and accommodation, but not travel.

### Attendance Grants

ESCMID provides a number of attendance grants for young attendees (born in 1970 or later) covering the registration fee, accommodation, but not travel costs. Please apply via the ESCMID website at [www.escmid.org/education](http://www.escmid.org/education) before 11 February 2010. If there are more applicants than available grants, preference will be given to ESCMID members. Applicants will be informed about their acceptance by 22 February 2010.

### CME Accreditation

The organizer of the course will apply for European CME accreditation through EACCME.