MATERIALS STRUCTURE in Chemistry, Biology, Physics and Technology

FEBS Practical Course
Advanced methods in macromolecular crystallization V

Academic and University Center at Nové Hrady, Czech Republic June 22 - 29, 2012

DATE OF COURSE
June 22 – 29, 2012
APPLICATIONS DEADLINE
March 31, 2012
REGISTRATION
www.img.cas.cz/fgm/cc

MAIN SPONSOR

SPONSORS

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TOPICS
E. coli - a factory for recombinant proteins
Protein as the main variable in crystallization
Morphology and crystal growth mechanisms
Interpretation of the crystallization drop results
The growth of large crystals for neutron diffraction
Illuminating the screening process with fluorescence
Conventional crystallization methods and their modifications
Advanced crystallization techniques/Crystallization under all conditions
Preparation of protein samples for crystallization experiments
Additives in protein crystallization
Nucleation of protein crystals
Crystallization and crystallographic analysis in a microfluidic chip
Counter diffusion methods for protein crystallization and screening
Nanocrystals for future applications
Lipidic cubic phase crystallization
Microseeding with an automatic system
Membrane protein crystallization
The road from protein expression and purification to protein crystallization
Crystal mounting & freezing
Screening diffraction quality of protein crystals
Advanced light scattering methods/Tips & tricks for protein crystal manipulation
Crystallography: methods for structural biology
Publishing crystallization results

SPAKERS AND TUTORS
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Nové Hrady is located in the south of the Czech Republic. The Academic and University Center resides in a very stylish chateau, which provides many facilities such as two lecture halls, laboratories and a student dormitory.

INFORMATION
The course is intended for undergraduate (5th year) and postgraduate students and postdocs with an interest in macromolecular crystallization. Number of participants is limited to 25. The crystallization of biological macromolecules is still poorly understood and, as a consequence, success of the common trial-and-error approach is not predictable. On the other hand, more rational approaches have been developed in the past few years and prospects for the science of crystallogenes is in fact good. Many of the new approaches are based on an improved theoretical insight into the processes of nucleation and crystal growth. The planned course is designed to bring over the message of the benefits of more rational approaches to macromolecular crystallization. The course will consist of theoretical lectures, seminars as well as practical work and demonstrations (lectures 40%, practical work 50%, seminars 10%). For crystallization experiments, typical recipes using commercial proteins (lysozyme, concanavalin A, etc.) will be used. In addition, students can bring their own proteins and carry out crystallization trials on these during the course.

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Czech and Slovak Crystallographic Association

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