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/igm/cc

MAIN SPONSOR

ORGANIZING COMMITTEE

Assoc. Prof. Ivana Kutá Smatanová

School of Complex Systems FFPW USB & Institute of Nanobiology and Structural Biology GCRC AS CR, Nové Hrady, Czech Republic

Email: *kuta@frov.jcu.cz OR ivanaks@seznam.cz*

Dr. Pavlína Řezáčová

Institute of Organic Chemistry and Biochemistry & Insitute of Molecular Genetics AS CR, Prague, Czech Republic

Email: *rezacova@img.cas.cz*

Prof. Rolf Hilgenfeld

Institute of Biochemistry, University of Luebeck, Luebeck, Germany

Email: *hilgenfeld@biochem.uni-luebeck.de*

SPONSORS

Jena Bioscience · Hampton Research · Emerald BioSystems · Olympus (Your Vision, Our Future) · eppendorf — Czech & Slovakia · Douglas Instruments (Success in protein crystallization) · Molecular Dimensions · greiner bio-one · Triana Sci & Tech · Bruker

TOPICS

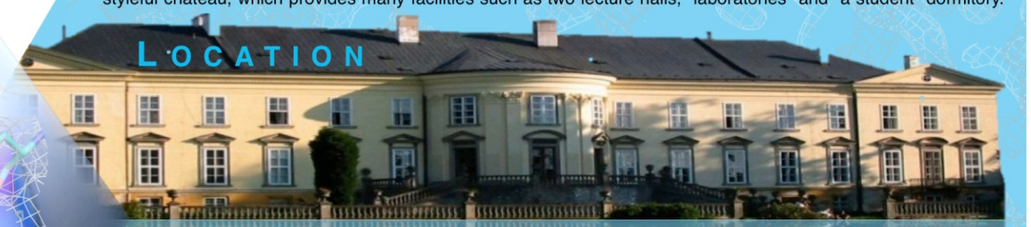
E. Coli - a factory for recombinant proteins
Protein as the main variable in crystallization
Morphology and crystal growth mechanisms
Interpretation of the crystallization drop results
The growth of large crystals for neutron diffraction
Illuminating the screening process with fluorescence
Conventional crystallization methods & their modifications
Advanced crystallization techniques/ Crystallization under oil
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 application/Lipidic cubic phase crystallization
Microseeding with automatic systems/ 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
Crystallogenesis methods for structural biology/ Publishing crystallization results

SPEAKERS AND TUTORS

Jeroen Mesters Luebeck, Germany
Bernhard Rupp Livermore, CA, USA
Peter G. Vekilov Houston, TX, USA
Lata Govada & Sahir Khurshid London, UK
Rolf Hilgenfeld Luebeck, Germany
Lubomír Janda Brno, Czech Republic
Ivana Kutá Smatanová Nové Hrady, Czech Republic
Monika Budayová-Spano Grenoble, France
Terese Bergfors Uppsala, Sweden
Pavlína Řezáčová Prague, Czech Republic
Estela Pineda Molina Granada, Spain
Patrick Shaw Stewart Berkshire, UK
Martin Caffrey Dublin, Ireland
Marc L. Pusey Huntsville, USA
Joe Ng Huntsville, AL, USA
Claude Sauter Strasbourg, France
Christian Betzel Hamburg, Germany
Jiří Brynda Prague, Czech Republic
José A. Gavira Granada, Spain
Richard Giegé Strasbourg, France
Dirk M. Zajonc San Diego, CA, USA
Naomi E. Chayen London, UK
Karsten Dierks Lüneburg, Germany
Vernon Smith Karlsruhe, Germany
Ľubica Urbániková Bratislava, Slovakia
Howard Einspahr Lawrenceville, NJ, USA
Peter Nollert Bainbridge Island, WA, USA
Juan Manuel Garciá-Ruiz Granada, Spain

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

LOCATION



INFORMATION

The course is intended for undergraduate (5th year) and postgraduate students and postdocs with an interest in macromolecular crystallization. Number of participant is limited to 25. The crystallization of biological macromolecules is still poorly understood and, as a consequence, success of the common trial-and-error experiments is not predictable. On the other hand, more rational approaches have been developed in the past few years and prospects for the science of crystallogenesis are 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, Concavaline A, etc.) will be used. In addition, students can bring their own proteins and carry out crystallization trials on these during the course.

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

Czech and Slovak Crystallographic Association

vol. 19, no. 2a, 2012

Special Issue