

Sunday, 2018/6/10

Theatre hall

14:00 - 15:00 Welcome

Chairs: I. Kuta Smatanova, P. Rezacova (organizers) F. Vácha (Dean), FEBS ACC Chair

>>>>14:00-14:30 >>>Welcome and Course remarks [Ivana Kutá Smatanová & Pavlína Řezáčová]>>>14:30-14:45>>>Prologue by the vice-rector USB [Tomáš Polívka]>>>14:45-15:00>>>Introduction by member of the FEBS ACC>>>>

>>>> 15:15-16:00>>>Principles of protein crystallization: The nature of Protein Crystals and the Physical Chemistry of their formation [Bernhard Rupp]>>>16:00-16:45>>>> Capillary counterdiffusion technique for protein crystallization and screening [Gavi = J. Gavira]>>> 16:45-17:30>>>Crystallization of membrane proteins in lipidic systems [Martin Caffrey]>>>17:45-18:30 >>>>Conventional crystallization methods and their modifications [Jeroen Mesters]>>>>

Chair: Petra Fromme

>>>>18:35-19:35>>>Lecture by IUBMB speaker>: MOLECULAR MOVIES WITH NANOCRYSTALS USING>>>> XFELS: SMALL IS BEAUTIFUL [Petra Fromme]

Blue Hall

10:00 - 14:00 Registration

Laboratory

10:00 - 12:00 Eppendorf Workshop on Pipetting

Experimental

10:00 - 10:15 **Talk Title Example 1**
Presenter Y

10:15 - 10:30 **Talk Title Example 2**
Presenter Z

10:30 - 11:00 **Talk Title Example 3**
Presenter W

FEBS Practical Course 2018 - Advanced methods in macromolecular crystallization VIII

Monday, 2018/6/11

Theatre hall

09:00 - 13:05 Lecture session

Lectures

> > > >>9:00-9:45>> >Principles of protein crystallization II: Methods, evaluation, and properties of 'real' crystals [Bernhard Rupp] > >> 9:45-10:30>> >Unconventional crystallization strategies and techniques for screening and optimisation [Naomi E. Chayen] > >>11:00-11:30>> >Interpretation of the crystallization drop results [Terese Bergfors]> >>11:30-12:00>> >Seeding Strategies for ##Random## Crystal Screening and Crystal Optimization [Patrick Shaw Stewart]> >>12:00-12:45>> >Tips and tricks for protein crystal manipulation and handling [José A. Gavira]> >>12:45-13:10>> > > > Evaluation of crystallization trials with the UVEX microscope [James Gordon]

Blue Hall

20:00 - 23:00 Posters and discussion

Poster Sessions

Laboratory

14:00 - 19:15 Lab Exercises

Experimental

> > > >>1. Conventional techniques and their modifications, crystallization of own proteins [J. Mesters]> >2. "The secret life of your crystallization drop"? [B. Rupp]> >3. Crystallization of membrane proteins in lipidic system [M. Caffrey]> >4. Observation of crystal growth / Seeding [T. Bergfors]> >5. Crystallization under oil [L. Govada]> >>Optional e>>xercise: > Conventional techniques and crystallization of own proteins [J. Mesters, Ľ. Urbániková]> >>Optional e>>xercise: >Evaluation of crystallization trials with the UVEX microscope [J. Gordon]> >>Optional e>>xercise: >##Random## Microseeding [P. Shaw Stewart]> > > >

Tuesday, 2018/6/12

Theatre hall

09:00 - 13:00 Lecture session

Lectures

> > > >>9:00-9:35>> >From protein expression and purification to its crystallization [Radka Chaloupkova] > >>9:35-10:10>> >Protein as the main variable in crystallization [Ľubica Urbániková] > >>10:10-10:45>> >##What to do if everything has failed## [Terese Bergfors]> >>11:15-12:00>> >Crystallization in microfluidic systems: strategies and perspectives [Claude Sauter] > >>12:00-12:35>> >Publication of scientific results with emphasis on crystallization communications [Howard Einspahr] > >>12:35-13:00>> >Analytical Ultracentrifugation: New Multiwavelength Sedimentation Analysis of Proteins in Solution [Martin Máša] > > > >

FEBS Practical Course 2018 - Advanced methods in macromolecular crystallization VIII

Blue Hall

20:00 - 23:00 Posters and discussion

Poster Sessions

Laboratory

14:00 - 19:15 Lab Exercises

Experimental

> > > >1. Observation of crystal growth / Seeding [T. Bergfors]> >2. Capillary protein crystallization using counter-diffusion techniques [J. Gavira]> >3. ##Random## Microseeding Microseeding [P. Shaw Stewart]> >4. Crystallization under oil [L. Govada]> >5. Publication of scientific results with emphasis on crystallization communications [H. Einspahr]> >>Optional e>>xercise:> From the biomolecule solution to its 3D structure in a microfluidic chip [C. Sauter]> >>Optional e>>xercise: >“The secret life of your crystallization drop”? [B. Rupp]> >>Optional e>>xercise: >Conventional techniques and crystallization of own proteins [J. Mesters, L. Urbániková]> >>Optional e>>xercise: >Evaluation of crystallization trials with the UVEX microscope [J. Gordon]> >>Optional e>>xercise:> Dynamic light scattering [K. Dierks]> > > >

Wednesday, 2018/6/13

Theatre hall

09:00 - 12:00 Lecture session

Lectures

> > > >>9:00-9:30>> >Using Fluorescence to Find Your Crystals [Crissy> >L. Tarver]> >>9:30-10:00>> >Crystallization Results Analysis and Optimization using Ionic Liquids [Marc L. Pusey]> >>10:00-10:45>> >Advanced and Non-conventional Methods for Controlling the Size and the Shape of Protein Crystals [Abel Moreno]> >>11:15-12:00>> >DLS measurements prior to crystallization experiments [Christian Betzel]> >>12:00-12:45>> >Crystallization of Protein-Nucleic Acid> >Complexes [Christian Biertümpfel]> > > > >>>>> >Visit of NH old castle and Teresa Valley (14:30 – 18:00)> > > >Free afternoon> > > >Dinner at >18:00> in the castle> > > >

Thursday, 2018/6/14

Theatre hall

09:00 - 12:00 Lecture session

Lectures

> > > >>9:00-9:45>> >Preparation of protein samples for crystallization experiments [Pavčina Řezáčová]> >>9:45-10:30>> >Preparation of Micro- and Nano-Crystals for Free-Electron-Laser and Synchrotron Radiation Sources [Christian Betzel]> >>11:00-11:45>> >Membrane protein crystallization [Hartmut Lücke]> >>11:45-12:30>> >Crystallization of viral complexes [Ivana Nemčovičová]> >>12:30-13:00 >> >Assessing the diffraction quality of crystals [Vernon Smith]> > > > >

FEBS Practical Course 2018 - Advanced methods in macromolecular crystallization VIII

Laboratory

14:00 - 19:15 Lab Exercise Experimental

>>>>1.Dynamic light scattering [K. Dierks]>>2. Trace Fluorescent Labeling and Low Cost Fluorescent Imaging [M. Pusey, C. Tarver]>>3. Capillary protein crystallization using counter-diffusion techniques [J. Gavira]>>4. From the biomolecule solution to its 3D structure in a microfluidic chip [C. Sauter]>>5. Practical Considerations for the Crystallization of Protein-Nucleic Acid Complexes [Ch. Biertümpfel]>>Optional exercise:>Publication of scientific results with emphasis on crystallization communications [H. Einspahr]>>Optional exercise:>Conventional techniques and crystallization of own proteins [J. Mesters, Ľ. Urbániková]>>Optional exercise:>Practical Crystallography – how to perform a diffraction experiment? [V.Smith]>>Optional exercise:>Single particle cryo-EM [E. Cunha]>>Optional exercise:>Methods for Controlling the Size and the Shape of Protein Crystals [A. Moreno]>>>>

Friday, 2018/6/15

Theatre hall

09:00 - 12:30 Lecture session Lectures

>>>>9:00-9:45>>Introduction to single particle cryo-EM [Eva Cunha]>>9:45-10:30>>>Optimisation of crystal growth for neutron crystallography [Monika Budayová-Spano]>>11:00-11:45>>>State-of-art biological Small-Angle-Scattering and new possibilities on Free Electron Lasers [Manfred Rössle]>>11:45-12:25>>>Complex view into structure [K.V. Venkatachalam]>>>>

Laboratory

14:00 - 19:15 Lab Exercises Experimental

>>>>1. Trace Fluorescent Labeling and Low Cost Fluorescent Imaging [M. Pusey, C. Tarver]>>2. Practical Considerations for the Crystallization of Protein-Nucleic Acid Complexes [Ch. Biertümpfel]>>3. Conventional techniques and crystallization of own proteins [J. Mesters, Ľ. Urbániková]>>4. Single particle cryo-EM [E. Cunha]>>5. Methods for Controlling the Size and the Shape of Protein Crystals [A. Moreno]>>Optional exercise:>Practical Crystallography – how to perform a diffraction experiment? [V.Smith]>>>>

Saturday, 2018/6/16

Laboratory

09:00 - 12:00 Crystal observation, testing, handling, mounting and cryocooling [J. Brynda, P. Pachl] Experimental