



INVESTMENTS IN EDUCATION DEVELOPMENT

## BIOpolymer POstdoctoral Laboratory and educational center

kindly invites you to

### The 6<sup>th</sup> Joint Seminar for Research and Innovations

organized by the project BIOPOL (Institute of Macromolecular Chemistry AS CR v.v.i.) and supported by projects “The Centre of Microbiology” and “Impuls” (Institute of Microbiology AS CR v.v.i.), “Biotechnological Expert and Biotechnological Expert in Structural Biology and Gene Expression” (Institute of Biotechnology AS CR v.v.i.) and “POSTDOC II UK” (Charles University, Prague)

The Seminar will take place on **June 18, 2014 at 9 am**  
in the Lecture room of Complex of Biomedical Institutes at Krč (Prague)

#### Program:

- 09:00 - 9:10 Welcome - D. Kubies/T. Etrych, IMC AS CR v.v.i.
- 09:10 - 9:35 Petr Kolenko, IMC AS CR v.v.i., “Borna Disease Virus Matrix Protein: Mutation - Function - Mutation Cycle”
- 09:35 - 10:00 Zora Novakova, IBT AS CR v.v.i., “Histone Deacetylases: Structural and Functional Characterization”
- 10:00 - 10:35 Coffee break
- 10:35 - 11:00 Ivo Florin Scheiber, Charles University, “Iron Homeostasis in the Prasinophyte *Ostreococcus Tauri*”
- 11:00 - 11:25 Tatiana Stella, IM AS CR v.v.i., “Bioremediation: a Sustainable “GreenTech” for the Clean-up of Polychlorinated Biphenyl (PCB)-Contaminated Soils”
- 11:25 - 11:30 Closing remarks - D.Kubies/T.Etrych, IMC AS CR v.v.i.

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Přírodovědecká fakulta  
UNIVERZITY KARLOVY V PRAZE





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### **Annotations for lectures:**

**Dr. Petr Kolenko (IMC AS CR v.v.i.):** "Borna Disease Virus Matrix Protein: Mutation - Function - Mutation Cycle "

Borna disease virus (BDV) is a neurotropic virus that usually infects horses, sheep and other farm animals. However, recent studies have also shown that genomic BDV-like elements were inserted into the mammalian genomes, including humans. We have focused our structure-function studies on the matrix (M) protein, the structure of BDVM has been already published. We have generated series of mutations that lead us to novel findings regarding infectability and viability of the virus.

**Dr. Zora Novakova (IBT AS CR v.v.i.):** "Histone Deacetylases: Structural and Functional Characterization"

Protein acetylation has emerged as a key regulatory mechanism of fundamental cellular processes, including chromatin assembly, DNA repair, signalling cascade, and protein degradation. The acetylation status of a given protein is defined by counter-balancing activities of histone acetyltransferases (HATs) and histone deacetylases (HDACs). Our research focuses on biochemical and structural studies of several HDACs, namely HDAC6, 10, and 11. We are interested in the identification and characterization of novel, non-histone HDAC substrates, the detailed description of the catalytic mechanism of these enzymes and structure-function studies exploiting X-ray crystallography and molecular biology techniques.

**Dr. Ivo Florin Scheiber (Charles University):** "Iron Homeostasis in the Prasinophyte *Ostreococcus Tauri*"

Iron is an essential element for all living organisms that is required for a variety of important biological functions. Although iron is relatively abundant in the earth's crust, it is poorly soluble in oxygen-rich surface water and iron limitation has been estimated to impair phytoplankton growth in as much as 40% of the ocean. Still, marine phytoplankton accounts for approximately half of global primary production, indicating that these organisms have evolved strategies to adapt to the low bioavailability of iron. However, the current understanding of the molecular mechanisms of iron homeostasis in phytoplankton remains elusive. This talk will briefly summarize the current knowledge of iron transport in marine phytoplankton and will present the first attempts to shed some light on the molecular mechanisms of iron homeostasis in the prasinophyte *ostreococcus tauri*.

*This presentation is a result of the project implementation: Project CZ.1.07/2.3.00/30.0061 Increasing of the R&D capacity at Charles University through new position for graduates of doctoral studies.*

**Dr. Tatiana Stella (IM AS CR v.v.i.):** "Bioremediation: a Sustainable "GreenTech" for the Clean-up of Polychlorinated Biphenyl (PCB)-Contaminated Soils"

Chlorinated aromatic pollutants have become a serious problem worldwide due to their adverse effects on natural ecosystems and human health. In this frame, the lecture will deal with potential, sustainability and limitations of bioremediation, a "green technology" which has attracted increasing interest during the past decades. Particularly, the technical feasibility of several biological approaches for the clean-up of long term polychlorinated biphenyl (PCB)-contaminated soils will be discussed.



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