

Metallomics Technology Conference 2015

Recent Advances and Strategies



Date: 14th - 18th June 2015
Laboratory of Metallomics and Nanotechnology, Mendel University in Brno

Brno 2015

Sunday 14/6/2015

15.00 - 18.00 Registration of participants
Olga Krystofova





Monday 15/6/2015

Where: Department of Chemistry and Biochemistry, Mendel University in Brno (Zemědělská 1, bulding D)

8.00 - 10.00 Registration of participants and Welcoming Coffee
Olga Krystofova

10.00 – 10.30 **Opening**
Prof. RNDr. Ladislav Havel, CSc. - Rector of Mendel University in Brno

Invited lectures

10.20 – 11.00 Zinc signals and the control of immune cell functions
Hajo Haase, Aachen University, Germany

11.00 – 11.20 Metallothionein and neuroinflammation
Juan Hidalgo, Autonomous University of Barcelona, Spain

12.00 – 13.00 Lunch

Plenary lectures

Metallothionein- latest advances

13.00 – 13.20 Metallothionein in cancer development
Michal Masarik, CEITEC, Czech Republic

13.20 – 13.40 Pathways in Zinc resistance
Monika Holubova, CEITEC, Czech Republic

- 13.40 – 14.00** Metallothionein – Immunohistochemical cancer biomarker:
a meta-analysis
Jaromir Gumulec, CEITEC, Czech Republic
- 14.00 - 14.15** Electrochemistry of metallothioneins
Vojtech Adam, LMaN, Czech Republic
- 14.30 – 14.40** Metallothionein and oxidative stress
Branislav Ruttkay-Nedecky LMaN, Czech Republic
- 14.35 – 15.00** Coffee Break
- 15.00 – 15.30** Merck presentation
- 15.30 - 17.00** LABORATORY OF METALLOMICS AND
NANOTECHNOLOGIES – LABTOUR
Ondrej Zitka, LMaN, Czech Republic
- 18.00** GUIDED BRNO TOUR
Vlastimil Sochor, LMaN, Czech Republic



Tuesday 16/6/2015

Presentations of partners

Where: Department of Chemistry and Biochemistry, Mendel University in Brno (Zemědělská 1, bulding D)

- 9.00 – 9.30** Opening remarks
Vojtech Adam, LMaN, Czech Republic
- 9.30 – 10.30** Immunodetection of metallothionein
Gabriella Emri, University of Debrecen, Hungary
- 10.30 – 11.30** Cappillary electrophoresis of metallothionein
Marta Kepinska, Wroclaw Medical University, Poland
- 11.30 – 13.30** Coffee Break
- 13.30 – 14.30** Modern electrochemical method for metallothionein analysis
Jan Labuda, Slovak Technology University, Slovakia
- 14.30 – 15.00** Coffee Break
- 15.00 – 16.30** Stand up Posters Presentation
Ondrej Zitka, LMaN, Czech Republic
- 16.30 – 18.00** Laboratory tours

Wednesday 17/6/2015

Zinc resistant prostate cancer cell lines and methods for their analysis

Where: Faculty of Medicine MU, Department of pathological physiology
(Kamenice 5, bldg. A18)

- 9.00 – 9.30** Opening remarks
Michal Masarik, CEITEC, Czech Republic
- 9.30 – 10.45** Laboratory tour I - Zinc resistant prostate cancer cell lines cell (derived from wt PC3 and wt 22Rv1); manipulation with cells; cytotoxicity tests (MTT, xCELLigence); scratch assays
Monika Holubova, Marketa Sztalmachova, Michal Masarik, CEITEC, Czech Republic
- 10.45 – 12.00** Laboratory tour II – Determination of apoptosis and autophagy of zinc resistant prostate cancer cell line by flow cytometry and multimodal holographic microscopy.
Jan Balvan, Jaromir Gumulec, Michal Masarik, CEITEC, Czech Republic
- 12.00 – 13.00** LUNCH (Campus River - www.campusriver.cz/)
- 13.00 – 14.15** Laboratory tour III – Expression analysis of selected genes involved in zinc resistance – qRT-PCR
Kristyna Hudcova, Jan Balvan, Michal Masarik, CEITEC, Czech Republic

14.15 – 15.30 Laboratory tour IV – Induction of tumors in immunodeficient (nu/nu) mice. Manipulation with animals, application of anesthesia (i.p.), application of tumor cells (i.v. and s.c.)
Marketa Sztalmachova, Monika Holubova, Michal Masarik, CEITEC, Czech Republic

15.30 – 16.00 Discussion and concluding remarks

Thursday 18/6/2015

Round table: Research and future of metallomics

Where: Department of Chemistry and Biochemistry, Mendel University in Brno (Zemědělská 1, building D)

9.00 – 12.00 Round table: Research and future of metallomics
Vojtech Adam, Rene Kizek, LMaN, Czech Republic

12.00 – 13.30 Coffee break

13.30 – 14.30 Conclusion and summary
Vojtech Adam, Rene Kizek, LMaN, Czech Republic

14.30 – 15.00 End of Metallomics technology conference 2015
Vojtech Adam, Rene Kizek, LMaN, Czech Republic





Poster section

- 1) The composites of graphene oxide with metal or semimetal nanoparticles and their effect on pathogenic microorganisms – Dagmar Chudobova
- 2) Electrochemical detection of Cr(III) using activated glassy carbon electrode - Hoai Viet Nguyen
- 3) Magnetic beads based isolation and electrochemical detection of specific influenza sequence labelled by metal QDs - Ludmila Krejcová
- 4) Influence of oxidation stage and exfoliation extent of carbon-based materials on electrochemical detection of As(III) - Monika Kremplová
- 5) Study of the interaction of graphene oxide with selenite anion using DPV - Monika Kremplová
- 6) Study of the interaction of graphene oxide with chromate anion using AAS – Renata Kensova
- 7) Biological activity and molecular structures of bis(benzimidazoles) and trithiocyanurate complexes - Pavel Kopel
- 8) Automatic electrochemical determination of soils contaminated with heavy metal ions (Cd(II) and Pb(II)) – Lukas Nejdl
- 9) UV tuning of cadmium telluride quantum dots (CdTe) – assessed by spectroscopy and electrochemistry – Lukas Nejdl
- 10) Quantum dots-fluorescence resonance energy transfer-based nanosensors and their application – Marketa Vaculovicova

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