



Course on High-Resolution Respirometry

IOC76. Mitochondrial Physiology Network 18.04: 1-2 (2013)

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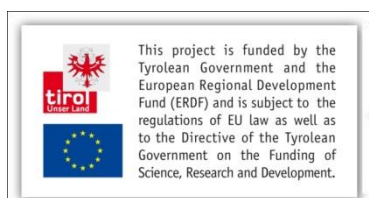
High-Resolution Respirometry OROBOROS O2k-Workshop

2013 May 28-29
Prague, Czech Republic



Institute of Physiology
Academy of Sciences
of the Czech Republic

- Invitation** We invite you to the 76th O2k-Workshop at the occasion of purchasing two new OROBOROS Oxygraphs O2k supported by the Fund for Universities' Development (FRVS grant No. A/240), Ministry of Education of the Czech Republic. The workshop will provide an introduction to the OROBOROS Oxygraph-2k (O2k-Core), overview presentations on high-resolution respirometry and O2k-MultiSensor analysis, and applications in mitochondrial bioenergetics.
- MiPNet** The O2k-Workshop Basic program will be accompanied by lectures on mitochondrial physiology. Short presentations of researchers from various laboratories and institutions using OROBOROS Oxygraphs in their research provide participants a unique opportunity to meet scientists involved in a variety of research fields, learn from different conceptual aspects and compare many methodological details.
- Organizers** The workshop is organized by Faculty of Science UK (Doc. M. Kalous and Dr. J. Žurmanová) in cooperation with the Institute of Physiology AVCR (Dr. Z. Drahota and Dr. J. Houšťek) and Medical Faculty UK in Hradec Králové (Prof. Z. Červinková).
- Location** The O2k-Workshop will be held during 28. - 29. May 2013 in building of Faculty of Science in Viničná 7. Lectures will take place in Fotochemie lecture hall, the practical part in Physiology labs.
- Specific links** http://www.orooboros.at/?Gnaiger_2012_MitoPathways
http://www.bioblast.at/index.php/MitoPedia_Glossary:_Respiratory_states
<http://www.orooboros.at/?IOC-reading>
http://www.bioblast.at/index.php/MiPNet_Laboratories_Czech_Republic
<http://www.orooboros.at/?MitoCom-Tyrol>



Programme IOC76



Tuesday, May 28

- 9:00 [Doc. Dr. M. Kalous](#): Opening
- 9:10 [Ao.Prof. Dr. Erich Gnaiger](#) (Rakousko - Austria): High-resolution respirometry with the OROBOROS Oxygraph-2k.
- 10:30 [Dr. Petr Pecina](#), [Dr. Josef Houštěk](#): Oxygraphy as a tool for diagnostics and elucidation of pathogenesis of inborn mitochondrial diseases.
- 11:30 [Doc. Dr. Z. Fišar](#) Effect of antidepressants on mitochondrial respiration rate. Mitochondrial respiration in blood platelets of patients with depressive disorder of Alzheimer's disease.
- 12:00 - 14:00 BREAK**
- 14:00 [Dr. Z. Sumbalová](#), Dr. I. Juránek, Dr. O. Vančová: Acute changes in OXPHOS parameters in brain mitochondria of newborn rats exposed to anoxia and anoxia-reoxygenation.
- 14:15 [Dr. M. Jabůrek](#), [Dr. P. Ježek](#), [Dr. J. Ježek](#), [Dr. J. Zelenka](#), [Dr. A. Dlasková](#): Antioxidant synergy of mitochondrial uncoupling protein UCP2 and phospholipase iPLA₂.
- 14:30 [Dr. K. Smolková](#), [Dr. P. Ježek](#): Cell respiration of hypoxia adapted cells.
- 14:45 [Dr. J. Spáčilová](#): The study of mitochondrial function in mini pig model of Huntington disease.
- 15:00 Dr. J. Hlousková, Dr. J. Volejníková, [Doc. Dr. A. Pichová](#): Evaluation of mitochondrial functions in yeast culture during ageing.
- 15:15 [Mgr. H. Nůsková](#): Oxygen affinity $P_{O_{2,50}}$ as indicator of modified cytochrome c oxidase function.
- 15:15 [Ao.Prof. Dr. Erich Gnaiger](#): Coupling and substrate control of oxidative phosphorylation. SUIT-protocols and normalization of mitochondrial respiration.
- 16:00 [Dr. Zdenek Drahota](#), [Dr. P. Staňková](#), [Prof. Dr. Z. Červinková](#), [Doc. Dr. M. Kalous](#): [12 high-resolution OROBOROS Oxygraphs in Czech Republic](#): An important tool in biomedical research, an important tool in education of students and young scientists and an important basis for organization of courses in bioenergetics and cooperation between laboratories.

Wednesday, May 29

- 9:30 [Ao.Prof. Dr. Erich Gnaiger](#): Introduction to O2k-MultiSensor analysis.
- 11:30 Sandwiches and coffee with OROBOROS cake + Discussion.
- 13:00 [Ao.Prof. Dr. Erich Gnaiger](#): Demonstration of the O2k-Fluorescence LED2-Module.
- 14:30 [Dr. Z. Sumbalová](#), [Mgr. H. Nůsková](#): Information about simultaneous measurement of respiration and mitochondrial membrane potential using oxygen sensors and TPP⁺ electrodes.
- 15:00 Closing discussion – [Instrumental comparisons](#)
- 16.30 End of O2k-Workshop

DISCLAIMER / CONFLICT OF INTEREST: Dr Erich Gnaiger (Ao.Univ.-Prof., Medical University of Innsbruck) is founder and CEO of OROBOROS INSTRUMENTS (Innsbruck, Austria).