



## MitoCom Tyrol

Mitochondrial Physiology Network 15.11: 1-4 (2010)

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Version 1: 2010-12-06



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## Workshop

### Mitochondrial Competence Tyrol: Sports and Disease

**2010, December 7, 15:30-19:00**

Innsbruck, [Haus der Begegnung](#), Rennweg 12

The **Tiroler Zukunftsstiftung** / [Cluster Life Science](#) offers a seminar in the series of 'Impulsgespräche', as a meeting of experts and interested parties. In addition to short presentations on current projects in the fields of mitochondrial physiology, pathology and biotechnology, the discussion will also focus on a potential application (K-Regio Project) to become a Regional Centre of Excellence (Kompetenzzentrum). General information will be provided on K-Regio Projects.

### Programme 2010-Dec-07

15:30	<b>Welcome. Petra Stöckl</b> , Tiroler Zukunftsstiftung, Cluster Life Sciences Tirol.
15:35	<b>A perspective of MitoCom Tyrol. Erich Gnaiger</b> , D. Swarovski Research Laboratory, Department of Visceral, Transplant and Thoracic Surgery, Medical University of Innsbruck; and OROBOROS INSTRUMENTS, Innsbruck, AT.
	<b>Hotspots in Mitochondrial Research</b>
15:50	<b>Interactions between sulfide and mitochondrial respiration in cultured murine alveolar macrophages. Matallo J</b> , Calzia E, Division APV, Dept. Anesthesiology, University Hospital, Ulm, DE.
16:00	<b>Mitochondrial adaptations to endurance training. Pesta D</b> , Faulhaber M, Burtscher M, Gnaiger E, Schocke M, Departments of Radiology and Visceral, Transplant and Thoracic Surgery Medical University of Innsbruck; and Inst. Sportwissenschaften, Univ. Innsbruck.
16:10	<b>Interaction between platelets and <i>Aspergillus fumigatus</i>: possible role in the inhibition of the fungal respiratory system. Perkhofer S</b> , Lass-Flörl C, Department für Hygiene, Mikrobiologie und Sozialmedizin, Medical University of Innsbruck.
16:20	<b>17<math>\beta</math>-hydroxysteroid dehydrogenase type 10 deficiency – the first inborn error of mitochondrial transcript processing? Zschocke J</b> , Amberger A, Divisions of Human Genetics and Clinical Genetics, Medical University Innsbruck.

### Förderinformation Tiroler Zukunftsstiftung

- 16:30 **Alps Bio Cluster. Rudolf Stoffner**, [Projekt Manager Forschungsprogramme](#), Tiroler Zukunftsstiftung; and **Georg Göbel**, Medical University of Innsbruck.
- 16:50 Coffee break
- 17:20 **Round Table - Who is who (5 min)**
- Dietrich Hermann**, **Gatterer Hannes**, **Harrison David**, **Hüttenhofer Alexander**, **Jansen-Dürr Pidder**, **Kofler Kurt**, **Koller Arnold**, **Rieneck Wolfram**, **Schobersberger Wolfgang**, **Schocke Michael**, **Troppmair Jakob**, **Weiss Günter**, **Wenning Gregor K.**
- Companies
- Fasching Mario**, **Renner-Sattler Kathrin**, **Sumbalová Zuzana**, **Wiethüchter Anita**, **Gnaiger Erich**, OROBOROS INSTRUMENTS. **Hansel Armin**, Ionimed Analytik. **Hugl Thomas**, **Schocke Michael**, Ergospect Mecial Technology.
- 18:30-19:00 **Discussion – Summary**

### Participants

- Amberger Albert**, Divisions of Human Genetics and Clinical Genetics, Medical University Innsbruck.
- Calzia Enrico**, Division APV, Dept. Anesthesiology, University Hospital, Ulm, DE.
- Dietrich Hermann**, Zentrale Versuchstieranlage der Medizinischen Universität Innsbruck.
- Fasching Mario**, OROBOROS INSTRUMENTS, Innsbruck.
- Gatterer Hannes**, Inst. Sportwissenschaften, Univ. Innsbruck.
- Gnaiger Erich**, D. Swarovski Research Laboratory, Department of Visceral, Transplant and Thoracic Surgery, Medical University of Innsbruck; and OROBOROS INSTRUMENTS, Innsbruck.
- Göbel Georg**, Medizinische Universität Innsbruck.
- Hansel Armin**, Ionimed Analytik, Innsbruck.
- Harrison David**, Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, UK; and OROBOROS INSTRUMENTS, Innsbruck.
- Hugl Thomas**, Ergospect Mecial Technology, Innsbruck.
- Hüttenhofer Alexander**, Division of Genomics & RNomics, Biocenter, Innsbruck Medical University.
- Jansen-Dürr Pidder**, Institute for Biomedical Ageing Research, Austrian Academy of Sciences, Innsbruck.
- Kofler Kurt**, CEMIT - Center of Excellence in Medicine and IT GmbH, Innsbruck.
- Koller Arnold**, Institut für Sport-, Alpinmedizin und Gesundheitstourismus (ISAG), Innsbruck.
- Lass-Floerl Cornelia**, Department für Hygiene, Mikrobiologie und Sozialmedizin, Medical University of Innsbruck.
- Matallo Jose**, Division APV, Dept. Anesthesiology, University Hospital, Ulm, DE.
- Perkhofer Susanne**, Department für Hygiene, Mikrobiologie und Sozialmedizin, Medical University of Innsbruck.
- Pesta Dominik**, Department of Radiology, Medical University of Innsbruck.
- Renner-Sattler Kathrin**, OROBOROS INSTRUMENTS, and Mitochondrial Physiology Society, Regensburg, DE.
- Rieneck Wolfram**, BEP, Büro für Europäische Programme, Innsbruck.
- Schobersberger Wolfgang**, Institut für Sport-, Alpinmedizin und Gesundheitstourismus (ISAG), Innsbruck.
- Schocke Michael**, Department of Radiology, Medical University of Innsbruck; and Ergospect Mecial Technology, Innsbruck.
- Stöckl Petra**, Tiroler Zukunftsstiftung, Cluster Life Sciences Tirol, Innsbruck.
- Stoffner Rudolf**, Tiroler Zukunftsstiftung.
- Stolz Claudia**, Tiroler Zukunftsstiftung, Cluster Life Sciences Tirol.

**Sumbalová Zuzana**, OROBOROS INSTRUMENTS, Innsbruck.

**Troppmair Jakob**, D. Swarovski Research Laboratory, Department of Visceral, Transplant and Thoracic Surgery, Innsbruck Medical University.

**Wenning Gregor K**, Abt. f. klinische Neurobiologie, Parkinson-Zentrum, Medical University of Innsbruck.

**Wiethüchter Anita**, OROBOROS INSTRUMENTS, Innsbruck.

**Weiss Günter**, Universtätsklinik für Innere Medizin I, Innsbruck Medical University.

**Zschocke Johannes**, Divisions of Human Genetics and Clinical Genetics, Medical University Innsbruck.

### **Further contacts**

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**Braun Andreas**, D. Swarovski Tourism Services GmbH, Kristallwelten, Wattens, AT.

**Burtscher Martin**, Inst. Sportwissenschaften, Univ. Innsbruck.

**Gratl Philipp**, WGT-Elektronik GmbH & Co KG, Kolsass, AT.

**Griesser Ulrich**, Institut für Pharmazie, Univ. Innsbruck.

**Parson Walther**, Institut für Gerichtliche Medizin, Medizinische Universität Innsbruck.

**Schneider Rainer**, Institut für Biochemie, Universität Innsbruck.

**Karall Daniela**, Neonatologie, Neuropädiatrie und angeborene Stoffwechselstörungen, Department für Kinder- und Jugendheilkunde, Universitätsklinik für Pädiatrie IV, Medizinische Universität Innsbruck.

## **2. MitoCom Tyrol**

A research and diagnostic laboratory should be established to form a **Centre of Excellence and Service Centre for Clinical Mitochondrial Physiology and Pathology**. In a laboratory equipped with state-of-the-art instrumentation in mitochondrial respiratory physiology and bioenergetics, with model systems from cultured cells to human blood samples and biopsies, linked to ergometric and P-NMR exercise testing and cardiovascular monitoring, highly trained technical and scientific staff will provide a basis for

- carrying out measurements in the context of **interdisciplinary pilot projects**, supported by the expertise for experimental design, analysis and interpretation of data in terms of specific mitochondrial function/dysfunction,
- for the operation of a **Centre for Functional Mitochondrial Diagnostics** as an institution unique in Europe (in cooperation with other specialized centres, e.g. Salzburg, AT; Bordeaux, FR; Copenhagen, DK; Nijmegen, NL; Newcastle, UK), which will
- attract **international cooperations** in the field of mitochondrial physiology to Innsbruck.

The combined expertise of both **local SMEs** (small and medium enterprises) **and scientific institutions** will make it possible to quickly establish a laboratory under international technological leadership, in particular, based on

- (i) [high-resolution respirometry](#) ([OROBOROS INSTRUMENTS](#)), coupled with spectrophotometry (Harrison; cytochrome redox spectra) and spectrofluorimetry,
- (ii) the reputation of the [International Mitochondrial Physiology Society](#), which has its base in Innsbruck (Gnaiger; Chairperson; [www.mitophysiology.org](http://www.mitophysiology.org)).

In combination with clinical diagnostic in vivo techniques (Schocke; P-NMR; ergometry; Ergospect) and expertise in mitochondrial genetics (Parson) and molecular biology (Zschocke, Hüttenhofer; Genomics, RNomics; ..), **MitoCom Innsbruck** will open up the perspective of establishing a world-leading, unique Centre of Excellence in clinical mitochondrial physiology. The relationship between sports, health and disease (Burtscher, Schobersberger; altitude medicine, hypoxia, endurance training, sports therapy, competitive sports) will be integral to interdisciplinary projects at MitoCom Tyrol and will extend the reputation of **"Tyrol - a Heart for Sports"**.

## MitoCom Tyrol – a Heart for Sports

Stichworte

- Aerobe Fitness vom Kind bis ins hohe Alter – Lebensqualität mit gesunden Mitochondrien
- Mitochondrien und Leistung vom Muskel bis zum Hirn und Immunsystem
- Höhe und Hypoxie – Eustress/Dysstress/Synstress: Sauerstoffversorgung und körperliche Aktivität
- Höhengaufenthalt, mitochondrielle und physiologische Fitness
- Mitochondrielle Präventivmedizin: die kostengünstigste Vorsorge – Krebs (Kooperation Oncotyrol), Diabetes 2 und 3, Alzheimer, Parkinson - alle degenerative Krankheiten
- Mitochondrielle Therapie: Inaktivität macht krank – körperliche Bewegung ist Medizin
- Mitochondrielle Funktion und Leistungssport
- Genetische Disposition, Heteroplasmie und mitochondrielle Funktion
- Mitochondrielle Funktion, Evolution und ökologische Anpassung
- Qualitätskontrolle in der funktionellen mt-Diagnostik – siehe QA-Workshop Innsbruck, Dez. 2009  
MiPNet14.12: [www.orooboros.at/index.php?qa-in-respirometry](http://www.orooboros.at/index.php?qa-in-respirometry)

### 3. MitoCom News

#### Follow-up MitoCom Workshop

**2011-01-18 - Schöpfstr. 18 – Innsbruck**  
**OROBOROS INSTRUMENTS-MiPartGallery**

15:30 MitoCom Workshop

18:18 Reception MiPart Exhibition **ODRA NOEL** and **RICHARD AGREITER**

#### Cluster Life Sciences Award 2010

The winners of the **Cluster Life Sciences Award 2010** (23. November 2010, Tiroler Innovationstag) are:

- [Ergospect](#)
- [OROBOROS INSTRUMENTS](#)

"Punktegleichstand gab es im Cluster Life Sciences Tirol. Deshalb erging der Cluster Award in dieser Kategorie gleich an zwei Unternehmen. Einmal an die Ergospect GmbH für ihr „Diagnostic Pedal“, mit dem Muskeln im Magnetresonanztomographen dynamisch belastet werden können. Sowie ein weiteres Mal an OROBOROS INSTRUMENTS für den Oxygraphen-2k als hochauflösendes Gerät zur Bestimmung der Zell- und Gewebeatmung." .. [mehr Info](#)

Erich Gnaiger nimmt die Auszeichnung für OROBOROS INSTRUMENTS entgegen. Die Jurymitglieder (von links) Sebastian Huber (ITG Salzburg) und Hubert Hofer (TIS Bozen) gratulieren gemeinsam mit Landesrätin Patrizia Zoller-Frischauf und Harald Gohm.

