



Bioblast Conference

Mitochondrial Physiology Network 17.13: 1-8 (2012)

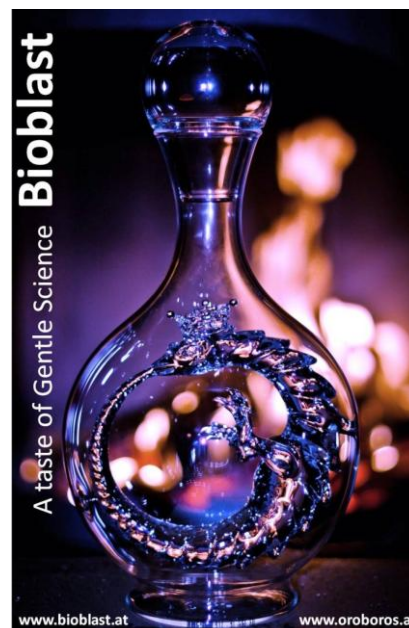
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Bioblast 2012 Mitochondrial Competence

Erich Gnaiger,
Barbara Meissner,
Verena Laner
with the O2k-Team

10. - 12. 12. 2012
Innsbruck, Austria

20 years high-resolution respirometry
10 years O2k with WGT Elektronik
12-12-12 Swarovski Crystal Worlds



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1. Programme

Monday, Dec 10 2012	
Bioblast 2012	
15:00-20:00	Registration
17:00-18:00	Welcome to Bioblast 2012
p. 17	Erich Gnaiger: Gentle Science and the Bioblast Conference.
	Harald Gohm: Welcome to Tyrol.
p. 18	Hannes Leo: Happiness and mitochondrial activity.
18:00	<i>Welcome Dinner at Hotel Grauer Bär</i>

Tuesday, Dec 11 2012	
1. From bioenergetics to mitochondrial medicine Chairs: Zuzana Cervinkova, Guy Brown	
09:00-09:30 p. 20	Keith Garlid Bioenergetics: a physiological overview.
09:30-09:45 p. 21	Nivea Amoedo Mitochondrial function and bioenergetics during malignant transformation and metastasis.
09:45-10:00 p. 22	Karl Tronstad Mitochondrial morphology and biogenesis in cellular stress.
10:00-10:15 p. 23	Lech Wojtczak A novel putative function of uncoupling proteins.
10:15-10:30 p. 24	Mary-Ellen Harper Metabolic effects of microRNA-133 and its antagomir in mice.
10:30-11:15	<i>Coffee / Tea - "O2k exhibition"</i>
2. Mitochondrial testing Chairs: Shilpa Iyer, Steven Hand	
11:15-11:30 p. 26	Michael Duchon Separation of NADPH and NADH fluorescence emission in live cells using fluorescence lifetime imaging microscopy.
11:30-11:45 p. 27	Charles Hoppel Mitochondrial functional testing – muscle biopsy, isolated mitochondria and others.
11:45-12:00 p. 28	Dominique-Marie Votion The cause of atypical myopathy in grazing European horses revealed.
12:00-12:15 p. 29	Russel Hepple Is latent mitochondrial dysfunction in aging muscle exposed through mitochondrial isolation?
12:15-12:30 p. 29	Magdalena Labieniec-Watala Seasonal fluctuations affect the physiology of laboratory animals – facts and artifacts from the perspective of heart mitochondrial respiratory response to tested compounds.
12:30-14:00	<i>"Meet the Expert" - Lunch</i>
3. Muscle activity and mitochondrial health Chairs: Dominique-Marie Votion, Bret Goodpaster	
14:00-14:15 p. 37	Martin Burtscher Strategies for improving exercise tolerance: targeting the skeletal muscles and/or the brain?
14:15-14:30 p. 38	Robert Jacobs, Carsten Lundby Mitochondria express enhanced quality as well as quantity in parallel with aerobic fitness across recreationally active individuals up to elite athletes.

14:30-14:45 p. 38	Catherine Le Two-week acclimatization to 5200m markedly alters substrate utilization and increases OXPHOS efficiency, with no effect on respiratory capacity in skeletal muscle mitochondria.
14:45-15:00 p. 39	Ugo Carraro Muscle training in ageing, denervation and beyond.
15:00-15:15 p. 41	Michael Fischer Myofascial pain syndrome and myofascial trigger points.
15:15-15:30 p. 41	Graham Holloway Over-expressing mitofusin-2 in healthy mature mammalian skeletal muscle does not alter mitochondrial bioenergetics.
15:30-15:45 p. 42	Dominik Pesta Prevention of diet-induced hepatic steatosis and hepatic insulin resistance by antisense oligonucleotides targeted to mIndy.
15:45-16:30	<i>Coffee / Tea - "O2k exhibition" and Poster presentation</i>
	4. Melatonin and mitochondria in ageing Chairs: Mary-Ellen Harper, Robert Boushel
16:30-16:45 p. 43	Dario Acuna-Castroviejo Melatonin and the quality of life: the melatonin-mitochondrion connection.
16:45-17:00 p. 44	Michael Breitenbach Roles of mitochondria in aging and in energy metabolism.
17:00-17:15 p. 44	Eva Albertini Cystathionine beta synthase modulates senescence of human endothelial cells.
17:15-17:30 p. 45	Rafal Koziel NADPH oxidase Nox4 induces mitochondrial dysfunction in human endothelial cells.
18:00	<i>Dinner and Xmas market on the way to MiPArT</i>
20:00 onwards p. 47 p. 1 p. 3	5. MiPArT and Science Communication Filou, Stiftgasse 12 Johannes Zipperle From the bench to the public: Visualization of purinergic signalling as a model for contemporary science communication. Odra Noel <i>MiPArT</i>
Wednesday, 2012-12-12	
	6. Evolution, adaptation and mitochondrial dysfunction Chairs: Nivea Amoedo, Chuck Hoppel
09:00-09:30 p. 49	Nick Lane Evolutionary perspective.
09:30-09:45 p. 50	Guy Brown Low selective pressure on our mitochondrial genome may explain its rapid evolution, poor adaption and our aging.

09:45-10:00 p. 50	Werner Koopman Cellular consequences of mitochondrial dysfunction.
10:00-10:15 p. 51	Mark Felix Ocean warming and acidification – when fish mitochondria turn sour.
10:15-10:30 p. 52	Steven Hand Respiration in embryo lysates reveals diminished Complex I activity and inhibition of the phosphorylation system during diapause in <i>Artemia franciscana</i> .
10:30-11:15	<i>Coffee / Tea - "O2k exhibition"</i>
11:15-11:30 p. 53	Adam Chicco Substrate-specific impairment of cardiac mitochondrial respiration in Taz-deficient mice: insight into the pathogenesis of Barth Syndrome.
11:30-11:45 p. 54	Zuzana Cervinkova Evaluation of mitochondrial functions – an important tool for experimental hepatology.
11:45-12:00 p. 55	Cezary Watala Oxygen consumption in resting and activated blood platelets: platelet mitochondria and cyclooxygenases as compounding targets for HRR.
12:00-12:15 p. 56	Sameh Ali Interrogating Egyptian mitochondria!
12:15-12:30	7. Discussion session: Global Mitochondrial Network? Chairs: Pablo Garcia-Roves, Antonio Galina Impulse statements (2.5 min): Erich Gnaiger : A global perspective. p. 59 Dominik Pesta : GMN from a young investigator's perspective. p. 59 Rainer Mutschler : Regenerative mitochondrial medicine.
12:30-14:00	<i>A Global Mitochondrial Lunch</i>
	8. Neuronal Mitochondrial Function, H₂S, and NO Chairs: Magdalena Labieniec-Watala, Sameh Ali
14:00-14:15 p. 60	Christos Chinopoulos Exclusive neuronal expression of SUCLA2 in the human brain.
14:15-14:30 p. 61	Zuzana Sumbalova Evaluation of mitochondrial respiration and membrane potential in mouse brain homogenate.
14:30-14:45 p. 61	Frederic Bouillaud Sulfide a remarkable mitochondrial substrate.
14:45-15:00 p. 63	Enrico Calzia Interactions between sulfide metabolism and oxygen concentration.
15:00-15:15 p. 64	Antonio Galina Nitric oxide inhibits succinate dehydrogenase-driven oxygen consumption in potato tuber mitochondria in an oxygen tension-independent manner.
15:15-15:45 p. 65	Shilpa Iyer Gentle Science in the real world of mitochondrial physiology and genetics.
15:45-16:30	<i>Coffee / Tea - "O2k exhibition"</i>
16:30-17:00	Discussion session - Perspectives

17:45	Departure - bus transfer to Swarovski Crystal Worlds, Wattens
p. 15	in front of Hotel Grauer Bär. * We suggest a formal dresscode.
18:30-19:00	Reception at Swarovski Crystal Worlds
19:00-19:45	Guided Tour Swarovski Crystal Worlds
19:45-21:15	Gala Dinner Swarovski Crystal Worlds
21:30-23:00	Piano Concert Uwe Kliemt - <i>Tempo giusto</i>

2. Additional Abstracts – Meet the Expert Lunch, Posters or Informal Discussions

Anders Garlid Na,K-ATPase signaling to mitochondria.	Session 1 p. 24
Andrea Eigentler The PBI-Shredder - an auxiliary HRR-tool for the preparation of tissue homogenates for diagnosis of mitochondrial respiratory function.	Session 2 p. 30
Mario Fasching O2k-Fluorometry - a <i>MitoCom</i> project.	Session 2 p. 32
Gergoe Horvath Respiratory substrate effects on mitochondrial membrane potential - experiments with mouse cardiac muscle homogenate.	Session 2 p. 33
Hannah Stoeger Cell respiration with yeast as a model.	Session 2 p. 33
David Harrison O2k-Spectrophotometry - a <i>MitoCom</i> project.	Session 2 p. 34
Gergely Kiss The negative impact of alpha-ketoglutarate dehydrogenase complex deficiency on matrix substrate-level phosphorylation.	Session 2 p. 35
Carolina Doerrier Treatment with melatonin prevents myocardial mitochondrial dysfunction in experimental sepsis in mice.	Session 4 p. 45
Barbara Meissner Open Innovation.	Session 5 p. 47
Csaba Konrad Absence of Ca ²⁺ -induced mitochondrial permeability transition but presence of bongkrekate-sensitive nucleotide exchange in <i>C. crangon</i> and <i>P. serratus</i> .	Session 6 p. 56
Dominika Dudzinska The influence of the extract from <i>Rubus parvifolius</i> leaves (EL17) on expression and activity of apyrase (CD 39) on Human Umbilical Vein Endothelial Cells (HUVECs).	Session 6 p. 57
Johannes Burtscher Mitochondrial function in the mouse hippocampus.	Session 8 p. 67
Christos Chinopoulos Properties of the mitochondrial permeability transition in human cells lacking the adenine nucleotide translocase isoform 1.	Session 8 p. 67

3. List of Participants

Name	Lab
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4. Presentation Previews

Monday 10th: 15:00 – 17:00
 Tuesday 11th: 08:00 – 09:00, 13:00 – 14:00
 Wednesday 12th: 08:00 – 09:00, 13:00 – 14:00

Bioblast - wiki.oroboros.at - the *information synthase* for Mitochondrial Physiology and high-resolution respirometry:

O2k-Catalogue: www.bioblast.at/index.php/O2k-Catalogue **OROBOROS**

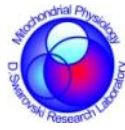
Publications: www.bioblast.at/index.php/O2k-Publications

5. Acknowledgements



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