Final Program

October 23 - 25, 2018
Steigenberger Hotel Berlin, Germany

www.targeting-mitochondria.com
## Congress Tracks:
- Recent advances on mitochondrial dysfunctions and dynamics in chronic diseases: the mechanistics
- The challenge of qualitative and quantitative assessment of mitochondrial function in vitro and in vivo
- Mitochondria & microbiota intertalk
- Strategies to target mitochondria: clinical trials and potential mitochondria-based therapies
- Special workshop: Mitochondria & ageing

## Key dates:
- **Registration**: Mon. Oct. 15, 2018
- **Poster Submission**: Mon. Oct. 12, 2018

## Targeting Mitochondria 2018 Speakers

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<th>Speaker</th>
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<tr>
<td>Volkmar Weissig</td>
<td>President of WMS, Midwestern University, USA</td>
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<tr>
<td>Andrew Hall</td>
<td>University of Zurich, Germany</td>
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<td>Malik Hüttemann</td>
<td>Wayne State University School of Medicine, USA</td>
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<td>Inge Kühl</td>
<td>CNRS - i2BC, France</td>
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<td>Håkan Westerblad</td>
<td>Karolinska Institut, Sweden</td>
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<td>Timo Faltus, Martin-Luther-Universität Halle-Wittenberg, Germany</td>
<td>The legal framework for mitochondrial therapy: Identifying and preventing legal pitfalls within the translation from bench to bedside</td>
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<td>Antonio Currais</td>
<td>The Salk Institute for Biological Studies, USA</td>
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<td>Carsten Culmsee</td>
<td>Universität Marburg, Germany</td>
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<td>Werner Koopman</td>
<td>RadboudUMC University, The Netherlands</td>
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<tr>
<td>Marvin Edess</td>
<td>Institut Cochin, Université Paris Descartes, France</td>
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<td>Vladimir Gogvadze</td>
<td>Karolinska Institute, Sweden</td>
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<td>Madhavika N. Sersasinghe</td>
<td>Ioahn School of Medicine at Mount Sinai, USA</td>
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<td>Aissia Angelin</td>
<td>Children’s Hospital of Philadelphia, USA</td>
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<td>Adam Szewczyk</td>
<td>Nencki Institute of Experimental Biology, Poland</td>
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<td>John Vissing</td>
<td>Copenhagen University, Denmark</td>
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<td>Matthew Young</td>
<td>Southern Illinois University School of Medicine, USA</td>
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<td>Mary Kay Lobo</td>
<td>University of Maryland School of Medicine, USA</td>
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<td>Marni J. Falk</td>
<td>University of Pennsylvania Perelman School of Medicine, USA</td>
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<tr>
<td>Sang-Bing Ong</td>
<td>Duke-NUS Medical School, Singapore</td>
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**Microbiota-Mitochondria interactions**

**Mitochondrial involvement in cell life/death regulation: Presentation of new scientific results**

**Mitochondrial fission in human diseases**

**Forp3 increases oxidative phosphorylation and Nad oxidation, adapting regulatory t cells to low glucose high lactate environments**

**Mitochondrial potassium channels: new regulation mechanisms?**

**Phase 2 motor study of Omaveloxolone in patients with mitochondrial myopathies**

**Utilizing a human hepatoma cell line to study off-target effects of drugs on mitochondrial DNA maintenance and bioenergetics**

**The mitochondrial link to cocaine addiction: Recent scientific advances**

**Nutritional interventions and dietary supplementation for mitochondrial disease patients**

**Healing the heart through mitochondrial dynamics: a love-hate relationship**

**Metabolite switches saving mitochondria from oxidative stress**
Introduction Note by the President of World Mitochondria Society

Dear Colleagues and Friends,

I am excited and honored to announce on behalf of the Scientific Committee of the World Mitochondria Society the 9th World Congress on Targeting Mitochondria, which will be held in Berlin, Germany, on October 23-25, 2018.

The overarching themes of our 9th World Congress on Targeting Mitochondria will not significantly deviate from topics discussed at preceding editions of our conference series. Again we will focus on three major areas, which are first the role of mitochondrial dysfunction in etiology and pathogenesis of chronic diseases, second how to assess and above all quantify mitochondrial dysfunction in vitro and in vivo and finally, third, how to target and manipulate mitochondrial function in order to develop future mitochondria-based therapies.

However, this year we will also focus on the cross-talk between mitochondria and microbiota as well as on mitochondrial dynamics in health and disease. Furthermore, we will address nutritional and pharmaceuticals interventions for mitochondrial respiratory deficiencies and we will highlight the role of mitochondria in the process of aging.

For the 9th edition of “Targeting Mitochondria”, the scientific committee has again succeeded in inviting key players in Mitochondrial Medicine, i.e. investigators who have been pushing the progress in their particular field of mitochondrial research over the last few years (a few invitations are still pending). Basic researches working at the bench in the laboratory, physicians treating patients suffering from mitochondrial disorders as well as representatives of companies working on the commercialization of mitochondria-targeted therapies are all welcome to our conference. We strongly believe that our 9th World Congress on Targeting Mitochondria will be at least as exciting and as successful as many of our previous meetings.

Our conference will involve the following sessions, for more details please see our preliminary program below.

- Recent advances on mitochondrial dysfunction and dynamics in etiology and pathogenesis of human diseases: the mechanistics
- The challenge of qualitative and quantitative assessment of mitochondrial function in vitro and in vivo
- Mitochondria & Microbiota Intertalk
- Strategies to target mitochondria: Clinical trials and potential mitochondria-based therapies
- Special workshop on Mitochondria and ageing

As always, we very much look forward to seeing you in Berlin for this exciting event.

Prof. Volkmar Weissig
President of the World Mitochondria Society
Midwestern University, USA
Scientific Agenda

Chairpersons:
Volkmar Weissig, Marvin Edeas, Eric Barrey, Martin Bergö, Alessandro Prigione, Carole Nicco, Bartosz Szczesny, Vladimir Gogvadze, Carsten Culmsee, Laurent Chatre, Maria Ricchetti, Alessia Angelin, Keshav Singh, Werner Koopman, Maik Hüttemann, Egbert Mik

Day 1 – Tuesday October 23, 2018

17h00 – 18h00 Registration & material delivery

Day 2 – Wednesday October 24, 2018

7h45 Registration & material delivery

8h20 Introduction of Targeting Mitochondria by the President of World Society Mitochondria, Prof. Volkmar Weissig

Session 1: Recent advances on mitochondrial dysfunctions and dynamics in chronic diseases: the mechanisms

Chairs: Marvin Edeas, Volkmar Weissig

8h30 Mitochondria: reflections on an increasing central player in physiology and disease
Miria Ricchetti, Pasteur Institute, France

8h50 Metabolic switches saving mitochondria from oxidative stress
Carsten Culmsee, University of Marburg, Germany

9h15 Targeting mitochondrial metabolism, geroprotection to treating Alzheimer’s disease
Antonio Currais, The Salk Institute for Biological Studies, USA

9h40 FOXP3 increases oxidative phosphorylation and NAD oxidation, adapting regulatory T cells to low glucose high lactate environments
Alessia Angelin, Children’s Hospital of Philadelphia, USA

10h05 Mitochondrial involvement in cell life/death regulation: presentation of new scientific results
Vladimir Gogvadze, Karolinska Institute, Sweden

10h30 Coffee Break & Poster Session

Chairs: Alessia Angelin, Håkan Westerblad

11h20 Utilizing a human hepatoma cell line to study off-target effects of drugs on mitochondrial DNA maintenance and bioenergetics
Matthew Young, Southern Illinois University School of Medicine, USA

11h45 Mitochondrial dynamics in cell life and death
Stephanie Herkenne, University of Padova, Italy

11h55 Mitochondrial potassium channels: new regulation mechanism?
Adam Szewczyk, Nencki Institute of Experimental Biology, Poland
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
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<tr>
<td>12h20</td>
<td>ROMO1 is a mitochondrial non-selective cation channel with viroporin-like characteristics</td>
<td>Young Do Yoo, University of Korea</td>
<td>Republic of South Korea</td>
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<td>12h30</td>
<td>Mitochondrial fission in human diseases</td>
<td>Madhavika N. Serasinghe, Icahn School of Medicine at Mount Sinai</td>
<td>USA</td>
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<td>12h45</td>
<td>Lunch Break, Networking &amp; Poster Session</td>
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<td>14h00</td>
<td>The mitochondrial link to cocaine addiction: recent scientific advances</td>
<td>Mary Kay Lobo, University of Maryland School of Medicine</td>
<td>USA</td>
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<td>14h25</td>
<td>Healing the heart through mitochondrial dynamics: a love-hate relationship</td>
<td>Sang-Bing Ong, Duke-NUS Medical School</td>
<td>Singapore</td>
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<td>14h50</td>
<td>SK channel activation prevents ferroptosis by metabolic reprogramming</td>
<td>Amalia Dolga, Groningen Research Institute of Pharmacy</td>
<td>The Netherlands</td>
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<td>15h00</td>
<td>MNRR1 (CHCHD2) and mitochondrial UPR: a novel nexus</td>
<td>Lawrence Grossman, Wayne State University</td>
<td>USA</td>
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<td>15h10</td>
<td>The impact of mitochondrial fission on metabolic adaptation</td>
<td>Miriam Valera-Alberni, Nestlé Institute of Health Sciences</td>
<td>Switzerland</td>
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<td>15h20</td>
<td>Sirtuin 3 silencing impairs mitochondrial function in SW620 colon cancer cells</td>
<td>Margalida Torrens-Mas, University of Balearic Islands</td>
<td>Spain</td>
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<tr>
<td>16h15</td>
<td>The transcriptomic and proteomic landscape of mitochondrial dysfunction in mouse</td>
<td>Inge Kühl, CNRS - Institut de Biologie Intégrative de la cellule</td>
<td>France</td>
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<td>16h35</td>
<td>Dedicated surveillance mechanism controls G-quadruplex forming non-coding RNAs in human mitochondria.</td>
<td>Roman J. Szczesny, Institute of Biochemistry and Biophysics PAS</td>
<td>Poland</td>
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<td>16h45</td>
<td>Synaptic activity mediates gene transcription-dependent metabolic plasticity in neurons</td>
<td>Carlos Bas Orth, University of Heidelberg</td>
<td>Germany</td>
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<td>16h55</td>
<td>Mitochondrial dysfunction activates innate immunity via toxic RNA</td>
<td>Jana Key, Goethe University Frankfurt</td>
<td>Germany</td>
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<td>17h05</td>
<td>Mitochondria: central players in microglia-neuron interactions</td>
<td>Csaba Cserep, Hungarian Academy of Sciences</td>
<td>Hungary</td>
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<td>17h15</td>
<td>Nicotinic acetylcholine receptors regulate mitochondria-driven apoptosis</td>
<td>Maryna Skok, Palladin Institute of Biochemistry</td>
<td>Ukraine</td>
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<td>17h25</td>
<td>The role of the Pink1/Parkin pathway in neuroblastoma chemo-resistance</td>
<td>Flavia Radogna, Laboratoire de Biologie Moléculaire et Cellulaire du Cancer</td>
<td>Luxembourg</td>
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<td>17h35</td>
<td>Mitochondrial dysfunction in Alzheimer’s disease: differential impact of amyloid precursor protein-derived fragments</td>
<td>Mounia Chami, Université Côte d’Azur</td>
<td>France</td>
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17h45  Proteomic characterization of synaptosomes from human substantia nigra indicates altered mitochondrial translation in Parkinson’s disease  
Katrin Marcus, Ruhr-Universität Bochum, Germany

17h55  Protective role of soluble adenylyl cyclase against reperfusion-induced injury  
Yury Ladilov, Charite, Germany

18h05  IPSC-derived neuronal/astrocyte composite cultures identify functional and bioenergetic defects in Leigh syndrome patients carrying sur1 mutations  
Gizem Inak, MDC Berlin, Germany

18h15  Implication of the P53-regulator E4F1 in Leigh syndrome  
Laurent Le Cam, Montpellier Cancer Center, France

18h25  End of the first day

20h30  Targeting Mitochondria Dinner  
Appointment in the lobby of the hotel. If you would like to participate, please register online or contact the staff on site.

Day 3 – Thursday October 25, 2018

Session 2: The challenge of qualitative and quantitative assessment of mitochondrial function in vitro and in vivo  
Chairs: Egbert Mik, Carole Nicco

8h30  Mitochondria evaluation 2018: outlines  
Egbert Mik, Erasmus MC, The Netherlands

8h35  Cellomics of mitochondrial morphofunction  
Werner Koopman, RadboudUMC University, The Netherlands

9h00  Using live imaging to investigate the causes and consequences of mitochondrial toxicity in the kidney  
Andrew Hall, University of Zurich, Switzerland

9h25  3D visualization uncovers heterogeneity of cardiac mitochondria and artefacts of 2D images  
Jacqueline Heinen-Weiler, University Hospital Essen, University Duisburg-Essen, Germany

9h35  A new method adapted for sequencing the mitochondrial genomes  
Sophie Dhorne-Pollet, INRA, University Paris Saclay, France

9h45  Quantifying and visualizing mitochondrial fission/fusion and the organelle interactome from time-lapse microscopy imaging  
Andrew R. Cohen, Drexel University, USA

9h55  Studying oxidative phosphorylation in vitro models. How to cope with the crabtree phenomenon?  
Michèle Johanna Celina de Kok, LUMC, The Netherlands

10h05  A luminescent assay for mitochondrial injury measurement upon targeting mitochondria by DNAi  
Saman Hosseinkhani, Tarbiat Modares University, Iran

10h15  Macropinocytic entry of isolated mitochondria in epidermal growth factor-activated human osteosarcoma cells  
Dipali Patel, University of Cambridge, United Kingdom

10h25  Coffee Break, Networking & Poster Session

11h10  Harmonizing mitochondrial DNA alignment across genetics  
Walther Parson, The Pennsylvania State University, USA
11h20  The levels of serum S-(2-succinyl)cysteine, a marker for mitochondria dysfunction, increases with diabetes and its complications
*Ryoji Nagai, University of Tokai, Japan*

11h30  New mitochondrial function assay technology
*Barry Bochner, Biolog Inc, USA*

**Session 3: Crosstalk between microbiota and mitochondria**

*Chairs: Eric Barrey, Vladimir Gogvadze*

11h40  Microbiota-Mitochondria interactions
*Marvin Edeas, Institute Cochin, University Paris Descartes, France*

12h05  Pathobiont adherent-invasive E. Coli (AIEC) induces mitochondrial fission in epithelial cells, promoting intracellular bacterial persistence
*Nicole Mancini, University of Calgary, Canada*

12h15  Metabolic regulation of neurogenesis by gut microbiome during nonalcoholic steatohepatitis
*Maria Filipe Ribeiro, Universidade de Lisboa, Portugal*

12h25  Brucella-infected cells display a fragmented mitochondrial population that does not change cell sensitivity to TNF-α-induced Apoptosis (microbiota)
*Thierry Arnould, University of Namur, Belgium*

12h35  Lunch Break, Networking & Poster Session

13h30  Special talk: Reversing wrinkled skin and lost hair in mice by restoring mitochondrial function
*Keshav Singh, University of Alabama at Birmingham, USA*

**Session 4: Strategies to target mitochondrial: clinical trials and potential mitochondria-based therapies**

*Chairs: Keshav Singh, Werner Koopman*

13h55  Therapeutic application of specific near infrared light wavelengths that inhibit cytochrome C oxidase results in robust neuroprotection
*Maik Hüttemann, Wayne State University School of Medicine, USA*

14h20  Mechanism and therapeutic potential of cyclophilin inhibitors for prevention of mitochondrial myopathy progression
*Håkan Westerblad, Karolinska Institutet, Sweden*

14h45  Phase 2 motor study of Omaveloxolone in patients with mitochondrial myopathies
*John Vissing, Copenhagen University, Denmark*

15h10  Nutritional interventions and dietary supplementation for mitochondrial disease patients
*Marni J. Falk, University of Pennsylvania Perelman School of Medicine, USA*

15h35  Coffee Break, Networking & Poster Session

16h10  The legal framework for mitochondrial therapy: identifying and preventing legal pitfalls within the translation from bench to bedside
*Timo Faltus, Martin-Luther-Universität Halle-Wittenberg, Germany*

*Chairs: Maik Hüttemann, Alessandro Prigione*
16h35  Mitochondria-tarfe ted antioxidants in human hepatic cells: A conceivable therapy for non-alcoholic fatty liver disease
  
  *Paulo J. Oliveira*, University of Coimbra, Portugal

16h45  Mitochondria-targeted hexokinase and ADP recycling: mechanism to prevent ROS generation and to mobilize carbohydrates

  *Vladimir Skulachev*, Lomonozo Moscow State University, Russian Federation

16h55  The Nicotinamide Riboside Journey from Discovery to Clinical Efficacy

  *Frank Jaksch*, ChromaDex, USA

17h05  Penetration of mitochondria into nuclei reprograms adult peripheral blood stem cells in humans

  *Yong Zhao*, Hackensack University Medical Center, USA

17h15  Mitophagy as a cell death regulator

  *Alibek Abdakhmanov*, Lomonosov Moscow State University, Russian Federation

17h25  Rescue of impaired mitochondrial performance in familial forms of Parkinson's disease by stomatin-like protein 2 expression

  *Irene Pichler*, Eurac Research, Italy

17h35  Associations of sperm mitochondrial copy number and deletion rate with fertilization and embryo development in a clinical setting

  *Richard Pilsner*, University of Massachusetts Amherst, USA

17h45  Discussion & concluding remarks with chairpersons & scientific committee

18h00  End of Targeting Mitochondria 2018