Welcome to Targeting Mitochondria 2017

Dear Colleagues,

I am pleased and very honored to announce on behalf of the Scientific Committee of the World Mitochondria Society the 8th World Congress on Targeting Mitochondria which will be held in Berlin, Germany, on October 23-24, 2017.

The general and overarching topics our 8th World Congress on Targeting Mitochondria is going to cover will not significantly deviate from topics discussed at preceding editions of our conference series. We will again focus on three major areas, which are first the role of mitochondrial dysfunction in etiology and pathogenesis of chronic diseases including aging, 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.

The progress made in Mitochondrial Medicine over the last few years is breath-taking. Our detailed knowledge about how mitochondria impact human health and longevity has been rapidly growing, so has the number of mitochondria-based clinical trials.

For the 8th edition of “Targeting Mitochondria”, the scientific committee will invite again key players, i.e. investigators who have been pushing the progress in their particular field of mitochondrial research over the last few years. 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 are convinced that our 8th World Congress on Targeting Mitochondria will be at least as exciting and as successful as our previous meetings.

Hot topics which are going to be highlighted this year include among others:

Recent advances on mitochondrial dysfunction in etiology and pathogenesis of human diseases and aging

- Mitochondria & Ageing
- Mitochondria & Microbiota: the intriguing relationship
- Mitochondria & Redox Regulation
- Mitochondria & Viral Infection
- Mitochondria & Metabolic Syndrome
- Mitochondria & Neurodegenerative Diseases
- Mitochondria & Cancer

The challenge of qualitative and quantitative assessment of mitochondrial function in vitro and in vivo

- Mitochondria Quality Control
- Mitochondria Devices: New methods to detect mitochondrial dysfunction
- Mitochondria as Biomarkers
- Presentation of Practical Cases

Recent Advances on targeting mitochondria: Clinical trials and potential mitochondria-based therapies

- Strategies to target Stem Cells
- Strategies to target Microbiota
- Strategies to target miRNA
- Strategies to replace mitochondria
- Clinical & Therapeutic Directions

We very much look forward to seeing you in Berlin for this exciting event.

Volkmar Weissig - President of the World Mitochondria Society

Marvin Edeas - Chairman of the Targeting Mitochondria 2017
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<tr>
<th>Title</th>
<th>Speaker</th>
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<td>Probing mitochondrial chemical biology with organelle-specific peptides</td>
<td>Shana O’Kelley</td>
<td>University of Toronto, Canada</td>
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<td>Vladimir Gogvadze</td>
<td>Karolinska Institute, Sweden</td>
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<td>Prevention of mitochondrial disease transmission</td>
<td>Yuko Takeda</td>
<td>The Newcastle University, United Kingdom</td>
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<tr>
<td>Targeting mitochondria by small RNAs: update and prospects</td>
<td>Ivan Tarassov</td>
<td>Institut de Botanique de Strasbourg, France</td>
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<td>Assessing the delivery of molecules to the mitochondrial matrix using click chemistry</td>
<td>Kurt Hoogewijs</td>
<td>The Newcastle University, United Kingdom</td>
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<td>Mitochondrial ROS and longevity: Recent scientific advances</td>
<td>Ana Lechuga-Viecco</td>
<td>Fundación Centro Nacional de Investigaciones Cardiovasculares, Spain</td>
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<td>Mitochondrial ROS mediated signaling pathways: activation and regulation upon inflammation</td>
<td>Andrey Kozlov</td>
<td>Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Austria</td>
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<td>Mitochondria targeted diagnostic and photodynamic therapy</td>
<td>Sabyasachi Chakrabortty</td>
<td>Max Planck Institute, Germany</td>
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<td>Hydrogene sulfide and mitochondria function</td>
<td>Csaba Szabo</td>
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<td>The impact of mitochondria-targeted antioxidants on cancer progression</td>
<td>Martin Bergo</td>
<td>Sahlgrenska Cancer Center, Sweden</td>
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<td>Mitochondria and Alzheimer’s disease</td>
<td>Natalia Stefanova</td>
<td>Institute of Cytology and Genetics, Russia</td>
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<td>Regulation of cardiac excitation contraction-bioenergetics coupling by mitochondrial fission protein Drp1</td>
<td>Shy-Hsing Shue</td>
<td>Thomas Jefferson University, USA</td>
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<td>mtDNA induced inflammatory response in lungs: recent scientific advances</td>
<td>Bartosz Szczesny</td>
<td>The Shimer Hospitals for Children in Galveston, USA</td>
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<td>Evaluating mitochondrial function: from the bench to the bedside</td>
<td>Egbert Mik</td>
<td>Erasmus MC, The Netherlands</td>
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<td>Polymeric nanoparticle-based mitochondria-targeting systems</td>
<td>Han Chang Kang</td>
<td>The Catholic University of Korea, The Republic of Korea</td>
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<td>iPSC-based drug discovery for neurological mitochondrial disease</td>
<td>Alessandro Prigione</td>
<td>Max Delbrueck Center for Molecular Medicine, Germany</td>
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<td>High-content mitochondrial analysis by live-cell microscopy</td>
<td>Werner Koopman</td>
<td>Radboudumc, Nijmegen, The Netherlands</td>
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<td>Creation of a designer molecule to target and silence mitochondrial gene transcription</td>
<td>Ganesh Pandian Namasi/vayam</td>
<td>Kyoto University, Japan</td>
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<td>Novel mechanisms of mitochondrial damage in oxidative death signaling are key targets for neuroprotective strategies</td>
<td>Carsten Cuimsee</td>
<td>University of Marburg, Germany</td>
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Day 1 – Monday, October 23

8h00 Welcoming & Registration of Attendees

8h50 Welcome Introduction by Prof Volkmar Weissig, President of the World Mitochondria Society

Session 1: Recent advances on mitochondrial dysfunctions in chronic diseases - the mechanics

Chairpersons: Marvin Edeas – Volkmar Weissig

9h00 Mitochondria: a switchboard between various cell death modalities
Vladimir Gogvadze, Karolinska Institute, Sweden

9h25 Hydrogen sulfide and mitochondrial function
Csaba Szabo, University of Texas, USA

9h50 Targeting mitochondria by small RNAs: update and prospects
Ivan Tarassov, University of Strasbourg, France

10h15 Mitochondrial ROS mediated signaling pathways: activation and regulation upon inflammation
Andrey Kozlov, L. Boltzmann Institute für experimentelle und klinische traumatologie, Austria

10h40 Coffee Break & Poster Session

Chairpersons: Carsten Culmsee - Vladimir Gogvadze

11h10 Mitochondria and Alzheimer’s disease
Natalia Stefanova, Institute of Cytology and Genetics, Russia

11h35 Novel mechanisms of mitochondrial damage in oxidative death signaling are key targets for neuroprotective strategies
Carsten Culmsee, University of Marburg, Germany

12h00 Mitochondrial ROS and longevity: recent scientific advances
Ana Lechuga-Vieco, Fundación Centro Nacional de Investigaciones Cardiovasculares, Spain

12h25 Non-canonical role of dynamin-related protein Drp1 in regulating bioenergetics of cardiac muscle cells
Shey-Shing Sheu, Thomas Jefferson University, USA

12h50 Mitochondrial adaptation in steatosis
Hans Zischka, Institute of Molecular Toxicology and Pharmacology, Germany

13h00 Lunch Break, Networking & Poster Session

Session 2: How to evaluate mitochondria function/dysfunction?

Chairpersons: Egbert Mik - Shana O'Kelley

14h30 How to evaluate mitochondrial function/dysfunction: from the bench to the bedside
Egbert Mik, Erasmus MC, The Netherlands
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<td>Probing mitochondrial chemical biology with organelle-specific peptides</td>
<td>Shana O’Kelley, University of Toronto, Canada</td>
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<td>15h20</td>
<td>Testing the therapeutic potential of antioxidants in diverse disease models</td>
<td>Marten Szibor, University of Helsinki, Finland</td>
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<td>Coffee Break, Networking &amp; Poster Session</td>
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<td>16h30</td>
<td>High-content mitochondrial analysis by live-cell microscopy</td>
<td>Werner Koopman, Radboudumc University, The Netherlands</td>
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<td>16h55</td>
<td>Short oral presentations for session 2 (7 minutes of presentation + 3 minutes for questions)</td>
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<td>Short-term starvation induces increased respiration despite loss of inner mitochondrial membrane and re-arrangement of Oxphos</td>
<td>Karin Busch, Universität Münster, Germany</td>
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<td>Toward the standardization of mitochondrial proteomics</td>
<td>Mauro Fasano, University of Insubria, Italy</td>
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<td>Modulation of cytochrome C oxidase activity with specific near-infrared light wavelengths attenuates brain ischemia/reperfusion injury</td>
<td>Maik Hüttemann, Wayne State University, USA</td>
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<td>Chairpersons: Andrey Kozlov - Csaba Szabo</td>
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<td>17h25</td>
<td>Short oral presentations for session 1 (7 minutes of presentation + 3 minutes for questions)</td>
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<td>Enhanced steroid production by the polybrominated flame retardant BDE-47 is associated with increased mitochondrial metabolism and altered mitochondrial morphology</td>
<td>Phillip Kopf, Midwestern University, USA</td>
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<td>Contribution of cytochrome C oxidase subunit IV in the development of myocardial insufficiency</td>
<td>Sebastian Vogt, University of Marburg, Germany</td>
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<td>Mechanism and impact of mitochondrial superoxide release in acute and chronic hypoxia in the pulmonary vasculature</td>
<td>Natascha Sommer, University of Giessen, Germany</td>
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<td>IFN-β is essential for mitochondrial fission in neurons</td>
<td>Emilie Tresse, Copenhagen University, Denmark</td>
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<td>Defining roles of protein kinase CK2 in promoting cancer cell survival via mitochondrial pathways</td>
<td>Janeen Trembley, University of Minnesota, USA</td>
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<td>IGF-II is a key player in the regulation of cancer metabolism by regulating mitochondrial DNA content, mitogenes and energy utilization in breast cancer</td>
<td>Daisy de Leon, Loma Linda University School of Medicine, USA</td>
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<td>18h25</td>
<td>Presentation of the film “The Human Longevity Project - Part 1“ (*)</td>
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<td>19h15</td>
<td>End of the first day</td>
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<td>20h30</td>
<td>Targeting Mitochondria Dinner at Steigenberger Hotel Berlin</td>
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<td>Appointment in the lobby of the hotel. If you would like to participate, please register online or contact the staff on site.</td>
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(*) The Human Longevity Project (Part 1) to be screened at the Targeting Mitochondria 2017 Congress is the world premiere of a groundbreaking, new documentary film series that takes an exciting journey around the globe to study the planet’s healthiest centenarians. This upcoming documentary film opens a new investigation into the four Blue Zones around the world, which have been previously identified by Michel Poulin and National Geographic as places containing an inordinate concentration of people with exceptionally long health-spans and incredible levels of vitality late in life. The Human Longevity Project is an 8-part film series that includes interviews from premier scientists, physicians, healers, & health experts around the globe and gathers together real-world footage and interviews with individuals in the Blue Zones. The intent is to reexamine the daily routines and practices ranging the entire lifespan to determine, from a bioenergetic standpoint, precisely how lifestyle factors affect the aging process and how we can adapt these factors to the present-day world. The series is slated to screen globally in 2018.
Day 2 – Tuesday, October 24

8h25 Opening of the second day

Session 3: Strategies to target mitochondria: recent clinical & potential therapeutic studies

Chairpersons: Alessandro Prigione – Ivan Tarassov

8h30 Studies on mitochondria-targeted plastoquinones and the road from laboratory bench to the market
Vladimir Skulachev, Moscow State University, Russia

8h55 Defining the impact of mitochondrially-targeted antioxidants on malignant melanoma and lung cancer progression
Martin Bergö, Sahlgrenska Cancer Center, Sweden

9h20 Early pronuclear transfer to prevent mitochondrial DNA disease
Yuko Takeda, The Newcastle University, United Kingdom

9h45 Self-assembled polymeric nanoparticles for mitochondria-targeting drug delivery
Han Chang Kang, The Catholic University of Korea, Republic of Korea

10h10 Coffee Break, Networking & Poster Session

11h10 Mitochondrial DNA damaged induced inflammation in lung epithelial cells
Bartosz Szczesny, University of Texas Medical Branch at Galveston, USA

11h35 iPSC-based drug discovery for neurological mitochondrial disease
Alessandro Prigione, Max Delbrueck Center for Molecular Medicine, Germany

12h00 Quantifying mitochondrial uptake of nucleobase derivatives through click chemistry
Kurt Hoogewijs, The Wellcome Trust Centre for Mitochondrial Research, United Kingdom

12h25 Lunch Break, Networking & Poster Session

Chairperson: Martin Bergö - Hans Zischka

13h40 Mitochondria targeted diagnostic and photodynamic therapy
Sabyasachi Chakrabortty, Max Planck Institute, Germany

14h05 Creation of a designer molecule to target and silence mitochondrial gene transcription
Ganesh Pandian Namasiyavam, Kyoto University, Japan

14h30 Short oral presentations for session 3 (7 minutes of presentation + 3 minutes for questions)

Parkin deficiency amplifies NLRP3 inflammasome activation by mitigating negative feedback loops
François Mouton-Liger, INSERM, Institut du Cerveau et de la Moelle Epinière, France

Uncoupling FOXO3A mitochondrial and nuclear functions in cancer cells undergoing metabolic stress and chemotherapy
Cristiano Simone, University of Bari Aldo Moro, Italy

[4]-Helicene-squalene nanoassemblies with mitochondrial targeting properties
Andrej Babic, University of Lausanne, Switzerland

Platelet-derived mitochondria display embryonic stem cell markers and improve pancreatic islet β-cell function in humans
Yong Zhao, Hackensack University Medical Center, USA
CHCHD10 and MNRR1 (CHCHD2): partners in mitochondrial and nuclear function and dysfunction

Lawrence Grossman, Wayne State University, USA

Mitochondrial function and cancer stem cells

Zhenhe Suo, Oslo University Hospital, Norway

15h30  Coffee Break & Poster Session

16h00  A form of autophagy triggers lipolysis in 3T3-L1 adipocytes exposed to a mitochondrial uncoupling

Thierry Arnould, University of Namur, Belgium

Screening cascade design for the identification of cyclophilin D inhibitors

Carol Austin, Selcia Ltd, United Kingdom

MicroRNA-709 mediates acute tubular injury by negatively regulating the TFAM/mitochondria axis

Aihua Zhang, Nanjing Children's Hospital, People's Republic of China

Targeting mitochondrial heterogeneity to improve chemotherapeutic efficacy in aggressive triple negative breast cancers

Guha Manti, University of Pennsylvania, USA

Mechanisms of cardiotoxicity associated with tyrosine kinase inhibitors

Jamal Bouitbir, University Hospital Basel, Switzerland

mtDNA from healthy and osteoarthritic patients have different mitochondrial activity, data obtained using transmiochondrial cybrid model

Mercedes Fernandez-Moreno, Instituto de Investigación Biomédica de A Coruña, Spain

17h00  Discussion & concluding remarks by Marvin Edeas & Volkmar Weissig

Targeting Mitochondria 2017 Awards

17h30  End of Targeting Mitochondria 2017