World Mitochondria Society

8th World Congress on

Targeting Mitochondria

WMS Journal - Archives

October 23 - 24, 2017 - Berlin, Germany

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 mitochondria 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 reimplace 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

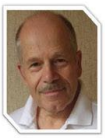
Marvin Edeas - Chairman of the Targeting Mitochondria 2017

World Mitochondria Society

TARGETING MITOCHONDRIA SPEAKERS

Probing mitochondrial chemical biology with organelle-specific peptides

Shana O'Kelley
University of Toronto, Canada



Mitochondria: a switchboard between various cell death modalities

Vladimir Gogvadze
Karolinska Institute, Sweden

Prevention of mitochondrial disease transmission

Yuko Takeda
The Newcastle University, United Kingdom

Targeting mitochondria by small RNAs: update and prospects

Ivan Tarassov
Institut de Botanique de Strasbourg, France

Assessing the delivery of molecules to the mitochondrial matrix using click chemistry

Kurt Hoogewijs
The Newcastle University, United Kingdom

Mitochondrial ROS and longevity: Recent scientific advances

Ana Lechuga-Vieco
Fundación Centro Nacional de Investigaciones Cardiovasculares, Spain

Mitochondrial ROS mediated signaling pathways: activation and regulation upon inflammation

Andrey Kozlov
Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Austria

Mitochondria targeted diagnostic and photodynamic therapy

Sabyasachi Chakrabortty
Max Planck Institute, Germany

Hydrogene sulfide and mitochondria function

Csaba Szabo
University of Texas, USA

Studies on mitochondria-targeted plastoquinones and the road from laboratory bench to the market

Vladimir Skulachev
Moscow State University, Russia

The impact of mitochondria-targeted antioxidants on cancer progression

Martin Bergö
Sahlgrenska Cancer Center, Sweden

Mitochondria and Alzheimer's disease

Natalia Stefanova
Institute of Cytology and Genetics, Russia

Regulation of cardiac excitation contraction-bioenergetics coupling by mitochondrial fission protein Drp1

Shey-Shing Sheu
Thomas Jefferson University, USA

mtDNA induced inflammatory response in lungs: recent scientific advances

Bartosz Szczesny
The Shriners Hospitals for Children in Galveston, USA

Evaluating mitochondrial function: from the bench to the bedside

Egbert Mik
Erasmus MC, The Netherlands

Polymeric nanoparticle-based mitochondria-targeting systems

Han Chang Kang
The Catholic University of Korea, The Republic of Korea

iPSC-based drug discovery for neurological mitochondrial disease

Alessandro Prigione
Max Delbrueck Center for Molecular Medicine, Germany

High-content mitochondrial analysis by live-cell microscopy

Werner Koopman
Radboudumc, Nijmegen, The Netherlands

Creation of a designer molecule to target and silence mitochondrial gene transcription

Ganesh Pandian Namasivayam
Kyoto University, Japan

Novel mechanisms of mitochondrial damage in oxidative death signaling are key targets for neuroprotective strategies

Carsten Culmsee
University of Marburg, Germany

8th World Congress on

Targeting Mitochondria

October 23-24, 2017 – Steigenberger Hotel, Berlin, Germany

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 mechanistics

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*

14h55 **Probing mitochondrial chemical biology with organelle-specific peptides**
Shana O'Kelley, *University of Toronto, Canada*

15h20 **Testing the therapeutic potential of antioxidants in diverse disease models**
Marten Szibor, *University of Helsinki, Finland*

15h45 Coffee Break, Networking & Poster Session

16h30 **High-content mitochondrial analysis by live-cell microscopy**
Werner Koopman, *Radboudumc University, The Netherlands*

16h55 **Short oral presentations for session 2** (7 minutes of presentation + 3 minutes for questions)

Short-term starvation induces increased respiration despite loss of inner mitochondrial membrane and re-arrangement of Oxphos
Karin Busch, *Universität Münster, Germany*

Toward the standardization of mitochondrial proteomics
Mauro Fasano, *University of Insubria, Italy*

Modulation of cytochrome C oxidase activity with specific near-infrared light wavelengths attenuates brain ischemia/reperfusion injury
Maik Hüttemann, *Wayne State University, USA*

Chairpersons: Andrey Kozlov - Csaba Szabo

17h25 **Short oral presentations for session 1** (7 minutes of presentation + 3 minutes for questions)

Enhanced steroid production by the polybrominated flame retardant BDE-47 is associated with increased mitochondrial metabolism and altered mitochondrial morphology
Phillip Kopf, *Midwestern University, USA*

Contribution of cytochrome C oxidase subunit IV in the development of myocardial insufficiency
Sebastian Vogt, *University Marburg, Germany*

Mechanism and impact of mitochondrial superoxide release in acute and chronic hypoxia in the pulmonary vasculature
Natascha Sommer, *University of Giessen, Germany*

IFN-β is essential for mitochondrial fission in neurons
Emilie Tresse, *Copenhagen University, Denmark*

Defining roles of protein kinase CK2 in promoting cancer cell survival via mitochondrial pathways
Janeen Trembley, *University of Minnesota, USA*

IGF-II is a key player in the regulation of cancer metabolism by regulating mitochondrial DNA content, mitogenes and energy utilization in breast cancer
Daisy de Leon, *Loma Linda University School of Medicine, USA*

18h25 **Presentation of the film "The Human Longevity Project - Part 1"** *(*)*

19h15 **End of the first day**

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

(*) 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 Poulain 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

14h00 **Creation of a designer molecule to target and silence mitochondrial gene transcription**
Ganesh Pandian Namasivayam*, Kyoto University, Japan*

14h25 **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*

15h25 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 transmitochondrial 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**