World Mitochondria Society

10th Anniversary of

Targeting Mitochondria Congress

Final Agenda

October 27-29, 2019 - Berlin, Germany

www.targeting-mitochondria.com
Dear Colleagues and Friends,

I am excited and honored to announce on behalf of the Scientific Committee of the World Mitochondria Society, “The 10th Anniversary World Congress on Targeting Mitochondria”, which will be held in Berlin, Germany, on October 28-29, 2019.

The overarching themes of our 10th Anniversary 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 including aging, secondly how to assess and above all quantify mitochondrial dysfunction in vitro and in vivo and finally, thirdly, how to target and manipulate mitochondrial function in order to develop future mitochondria-based therapies.

Further, in continuation of last year’s successful conference, we will invite speakers to focus on the cross-talk between mitochondria and microbiota as well as on mitochondrial dynamics in health and disease. Also we will focus on intracellular stress pathways involving mitochondrial dysfunction and cell death.

For the 10th edition of “Targeting Mitochondria”, the scientific committee will invite again 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. Basic researchers 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 jubilee World Congress on Targeting Mitochondria will be at least as exciting and successful as majority of our previous meetings.

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

Prof. Volkmar Weissig
President of the World Mitochondria Society
Midwestern University, USA
**10th World Congress on Targeting Mitochondria**  
**October 28-29, 2019 – InterContinental Hotel, Berlin, Germany**

**Scientific Agenda**

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**Sunday October 27, 2019**

17h00 – 18h00 Registration & material delivery

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**Monday October 28, 2019**

7h45 Registration & material delivery

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

8h30 Honorary Lecture: Mitochondrial genetics and Human Disease  
Douglas C. Wallace, Center for Mitochondrial and Epigenomic Medicine, USA

**Session 1: Recent advances on mitochondrial dysfunctions and dynamics in chronic diseases: The mechanistic**

Chairs: Marvin Edeas, Volkmar Weissig

8h55 Metabolic Determination of Cell Fate through Selective Inheritance of Mitochondria  
Pekka Katajisto, Center of Excellence in Stem Cell Metabolism, Finland

9h15 Cardiac Glycosides Module Neuroblastoma Stem Cell Survival by Dysfunctional Mitophagy  
Marc Diederich, Seoul National University, South Korea

9h35 Mitochondria, as Central Regulators of Neural Stem Cell Fate  
Ruth Slacks, University of Ottawa, Canada

9h55 The brain MITOxy Project: From Mitochondria to Proteases and Reactive Species Interactome in Brain  
Laurent Chatre, Université de caen-Normandie, CEA, France

10h15 Increased Hydrogen Peroxide and Decreased Glutathione Redox Potential May Cause Dopaminergic Neurodegeneration in Parkin Loss-of-Function  
Lori M. Buhlman, Midwestern University, USA

10h35 Coffee Break & Poster Session

Chairs: Douglas C. Wallace, Egbert Mik

11h20 Mitochondria & Microbiota Inter-Talk: Strategic Role of Metabolites  
Marvin Edeas, University Paris Descartes, INSERM U1016, France

11h40 Host Mitochondria Influence Gut Microbiome Diversity: A Role for ROS  
Tai Yarderai, Children's Hospital of Philadelphia, USA

12h00 The Challenge of Qualitative and Quantitative Assessment of Mitochondrial Function in Vitro And in Vivo: What We Know in 2019?  
Egbert Mik, University Medical Center Rotterdam, The Netherlands

12h20 Mitochondrial defects in an accelerated ageing syndrome are also key determinant of replicative senescence of normal cells  
Miria Ricchetti, Institut Pasteur, France

12h30 Lunch Break, Networking & Poster Session

Chairs: Vladimir Gogvadze & Miria Ricchetti

14h00 Cytoskeletal mitochondrial interactions in collagen VI related disorders  
Alessia Angelin, Children's Hospital of Philadelphia, USA

14h20 The Cellular Stress Protein MNRR1/CHCHD2 and Mitochondrial Disease  
Lawrence Grossman, Wayne State University, USA

14h40 Mitochondrial Copper Toxicity with a Focus on Wilson Disease  
Hans Zischka, Institute of Molecular Toxicology and Pharmacology, Germany
Short oral presentations of Sessions 1 (7 minutes for presentation)

Non-invasive live cell imaging overcomes phototoxicity problem while imaging cellular and mitochondrial processes  
**Marlies Mürnseer**, Nanolive SA, Switzerland

Using direct Long RNA Sequencing to explore the whole Mitochondrial Transcriptome: Model of the Equine Mitochondrial RNA  
**Eric Barrey**, INRA, France

Mitochondrial Complex II Activity during Hypoxic Reperfusion in Low and High Fat Diet Mice Heart  
**Yin Hua Zhang**, Seoul National University, South Korea

Amyloid Pores - A New Class of Mitochondrial Porins?  
**Neville Vassallo**, University of Malta, Malta

15h30 Coffee Break, Networking & Poster Session

Chairs: Martin Bergö, Hans Zischka

16:10 Short oral presentations of Sessions 1 (7 minutes for presentation)

Role of Mitochondria in Regulation of Insulin and Glucagon Secretion  
**Marko Marhl**, University of Maribor, Slovenia

The Arduous Path of Iron from Plasma Transferrin to Mitochondrial Ferrochelatase: Kiss-and-Run Mechanism  
**Amel Hamdi**, Lady Davis Institute for Medical Research & McGill University, Canada

Mitochondrial Complex II Activity during Hypoxic Reperfusion in Low and High Fat Diet Mice Heart  
**Yin Hua Zhang**, Seoul National University, South Korea

Amyloid Pores - A New Class of Mitochondrial Porins?  
**Neville Vassallo**, University of Malta, Malta

The ESRE Network: A Conserved Master Stress Response that Surveils Mitochondrial Damage  
**Natasha Kirienko**, Rice University, USA

Mitochondrial Dysfunction and Insulin Resistance Induced by Endotoxin was Restored by GPR120 Agonist, TUG-891 in Brown Adipocytes  
**Farah Omran**, University of Warwick, United Kingdom

Whole Exome Sequencing of Chagas Disease Cardiomyopathy Families Reveals Accumulation of Rare Variants in Mitochondrial and Inflammation-Associated Genes  
**Ededio Cunha-Neto**, University of São Paulo School of Medicine, Brazil

Importance of Distinction between Primary Mitochondrial Disease and Secondary Mitochondrial Dysfunction  
**Dmitriy Niyazov**, Ochsner/Tulane/Queensland, US

The Role of Mitochondrial DNA During Chondrogenesis using Human Mesenchymal Stem Cell without MTDNA (RHO-0)  
**Mercedes Fernandez-Moreno**, Institute for Biomedical Research INIBIC, Spain

Mitochondria-Mediated Multi-Organ crosstalk in Amyotrophic Lateral Sclerosis (ALS)  
**Jingsong Zhou**, University of Texas at Arlington, USA

Quantum Chemistry Molecular Modeling for Mitochondria as Powerhouse of Cells  
**Shozo Yanagida**, Osaka University, Japan

Transmitotic Mitochondrial Resistance to Extrinsic Apoptosis is Governed by the Druggable BCL-2 Family Member MCL-1  
**Markus Morrison Rehm**, University of Stuttgart, Germany

Chairs: Lori M. Buhlman & Carole Nicco

Adenosine Triphosphate (ATP) Synthesis by Endogenous UV Radiation  
**Thomas Valentine Prevenslik**, QED Radiations, Germany

A Novel Mutation in SparT Gene Causes a Severe Neurodevelopmental delay due to Mitochondrial Dysfunction with complex I Impairments and Altered Pyruvate Metabolism  
**Irene Liparulo**, University of Bologna, Italy

Neuropilin-1 Controls Endothelial Homeostasis by Regulating Mitochondrial Function and Iron-Dependent Oxidative Stress  
**Claudio Raimondi**, Queen Mary University of London, United Kingdom

FRET Biosensors to Monitor Autophagy and Mitophagy in Living Cells  
**Giulia Bertolin**, CNRS-University of Rennes-Genetics and Development Institute of Rennes, France

Loss of CLEC16A Function Predisposes to Neurodegeneration, Autoinflammation and Lipodystrophy by Means of Defective Mitophagy  
**Marina Bakay**, Children's Hospital of Philadelphia, USA

Novel Role of ATPASE Inhibitor Factor-1 (IF-1) in Mitochondrial Calcium Handling and Cardiomyocyte Hypertrophy  
**Mario G. Pavez-Giani**, University Medical Center of Groningen, The Netherlands
Membrane - Mediated Modulation of the Activity of Mitochondrial Calcium-Activated Potassium Channel of Large Conductance
Piotr Koprowski, The Nencki Institute of Experimental Biology, Poland

A Catalogue of Novel Mitochondrial Microproteins in The Human Heart
Jana F. Schulz, MDC Berlin, Germany

ALCAT1 Overexpression Prevents Supercomplex Formation and Promotes Increased ROS Production in Respiring Mitochondria
Bettina Rieger, Münster University (WWU), Germany

Keratin 6A Mutations Lead to Impaired Mitophagy
Sonja Maria Lehmann, Institute of Molecular and Cellular Anatomy, University Hospital Aachen, Germany

Investigation of Microbiome Metabolites and Mitochondrial Function in Non-Alcoholic Fatty Liver Disease
Paula Boeira, University of Plymouth, United Kingdom

A Novel Role of MCUR1 in Mitophagy
Karthik Babu Mallilankaraman, National University of Singapore, Singapore

19h00 End of the first day

20h30 Targeting Mitochondria Dinner will be held at InterContinental Hotel Berlin
Appointment in the lobby of the hotel. If you would like to participate, please register online or contact the staff on site.
Tuesday October 29, 2019

Symposium
Actin(g) on mitochondria:
The role of actin-regulating proteins on mitochondria in health and disease

Chairs: Carsten Culmsee & Marco Rust

08h00  Introduction: Role of Actin-regulating Proteins on Mitochondria
       Carsten Culmsee, University of Marburg, Germany

Role of Mitochondria in Ferroptosis
       Minghui Gao, University of Harbin, China

Mitochondrial Functions of The Actin-Regulatory Protein Cofilin1
       Marco Rust, University of Marburg, Germany

Cofilin Dependent Mitochondrial Dysfunction Following Hemorrhagic Brain Injury and Neuroinflammation
       Zahoor Shah, University of Toledo, USA

Mitochondrial Pathways in Neuronal Cell Death
       Changlian Zhu, Zhengzhou University, China

Knock-down of ADF/Cofilin in C. elegans - Effects on Mitochondrial Function
       Gunter Eckert, University of Giessen, Germany

Mitochondrial Parameters in Cardiomyocytes in Health and Disease
       Christoph Maack, University Hospital Würzburg, Germany

Mitochondrial Calcium Regulation in Hypertensive Heart Disease
       Jelena Plakic & Jens Kockskämper, University of Marburg, Germany

Mitochondrial Alterations in Heart Failure
       Susanne Rohrbach, University of Giessen, Germany

Blocking Mitochondria-targeted Ferroptosis Prevents Cardiomyopathy
       Fudi Wang, University School of Medicine, China

10h30  Coffee Break, Networking & Poster Session

Session 2: Mitochondria & Skin: Recent Advances

Chairperson: Lionel Breton

11h15  Role of PGC-1S in Human Epidermal Physiology
       Sibylle Jäger, L’Oréal Research & Innovation, France

11h35  Cannabinoids and Skin: The "C(ut)annabinoid" System as a Novel Player in Regulating Cutaneous Mitochondrial Biology
       Attila Oláh, University of Debrecen, Hungary

11h55  Mitochondria and Skin: Mitochondria in Wound Healing
       Jakob Wikström, Karolinska University Hospital, Sweden

12h15  Short oral presentations (7 minutes for presentation)
       The Cytoprotective Potential of Novel Mitochondria-Targeted Iron Chelators Against UVA- and Hydrogen Peroxide-Mediated Oxidative Cell Death in Friedreich’s Ataxia Fibroblasts
       Charareh Pourzand, University of Bath, United Kingdom

12h25  Lunch Break, Networking & Poster Session
Session 3: Mitochondria Innovations 2019
Strategies to target mitochondria: Clinical trials and potential mitochondria-based therapies

Chairs: John G. Geisler, Richard C. Hartley

13h30 Mitochondrial Antioxidant Therapy for Treating Vascular Aging
Douglas R Seals, University of Colorado Boulder, USA

13h50 2,4-Dinitrophenol as Medicine
John G. Geisler, Mitochon Pharmaceuticals, Inc, USA

14h10 Mitochondria-Targeted Low-Molecular Weight Compounds for Probing Mitochondrial Functions
Richard C. Hartley, University of Glasgow, United Kingdom

14h30 Mitochondria Transplantation - From Animal Studies to Clinical Relevance
James D. McCully, Harvard Medical School, Boston Children's Hospital, USA

14h50 Short oral presentations (7 minutes for presentation)

Monitoring of Patients’ Mitochondrial Function and Tissue Metabolic Score (TMS) in Critical Care Medicine: A New Standard of Care?
Avraham Mayevsky, Bar Ilan University, Israel

Mitochondria-Targeted Therapeutics for Alzheimer’s Disease
Eugenia Trushina, Mayo Clinic, USA

Precise Intra Mitochondrial Delivery of PT(LV) Anticancer Complexes for Enhanced Anticancer Activity and Reduced Nephrotoxicity
Giorgia Pastorin, National University of Singapore, Singapore

Antioxidant, Hormetic-Like Properties of ANTIOXCIN4, A Novel Hydroxinnamic Acid-Based Mitochondria-Targeted Agent
Paulo J. Oliveira, Center for Neuroscience and Cell Biology, University of Coimbra, Portugal

15h10 Coffee Break, Networking & Poster Session

Chairs: Lawrence Grossman, Alessandro Prigione

15h40 Stem Cell-driven Drug Discovery of OXPHOS Diseases
Alessandro Prigione, Max Delbrueck Center for Molecular Medicine, German

16h00 Mitochondria-Targeted Nanocarriers for Mitochondrial Therapies
Shanta Dhar, University of Miami, USA

16h20 Short oral presentations (7 minutes for presentation)

Therapeutic Application of Specific Near-Infrared Light Wavelengths that Inhibit Cytochrome C Oxidase Results in Robust Neuroprotection
Maik Hüttemann, Wayne State University, USA

Advanced Mitochondrial Electron Flow Assays
Barry R. Bochner, Biolog, Inc., USA

Targeting Mitochondrial Complex I for fighting Diabetes
Liang-Jun Yan, University of North Texas Health Science Center, USA

Blood Contains circulating Cell Free Respiratory Competent Mitochondria
Zahra Al Amir Dache, Institut de recherché en Cancérologie de Montpellier, France

The Psychiatric Risk Gene CACNA1C Regulates Mitochondrial FunctionIn LPS-Stimulated Microglial Cells
Susanne Michels, University of Marburg, Germany

Targeting Mitochondrial Calcium with the Plant Polyphenol Kaempferol, to Promote Metabolism/Secretion Coupling in Pancreatic Insulin-Secreting Cells
Umberto De Marchi, Nestlé Research, Switzerland

Editing of Mitochondrial Genome: Cationic Liposomes as the Perspective Mean of Targeted Delivery of Nucleic Acids into Mitochondria
Igor A. Sobenin, National Medical Research Center of Cardiology, Russian Federation

Effects Of Fluorescent Light Energy on Mitochondria Dynamics
Michela Zago, KLOX technologies Inc., Canada

Mitochondrial Augmentation Therapy: Mitochondrial Enrichment of Hematopoietic Stem Cells in Patients with Mitochondrial Disease
Noa Sher, Minovia, Israel

5-Aminolevulinic Acid as a Potential Drug Affecting Dysfunctional Mitochondria
Alexander Orekhov, Institute of General Pathology and Pathophysiology, Russian Federation

Pharmacological Inhibition of Metap2 Causes Rapid and Sustained Changes to Mitochondria
Jonathan Jung, University of Glasgow, United Kingdom

A Mitochondrial Role Of SV2A Protein in Aging and Alzheimer's Disease
Kristina Friedland, JGU Mainz, Germany
Assess Safety of an Autologous Myogenic Stemcell Therapy for Carriers of a Heteroplasmic Mitochondrial DNA Mutation

Irenaeus F. De Coo, Maastricht University, The Netherlands

Delay of Neurodegenerative Disease by Nano-PSO (Granagard) is Associated with Restoring Normal Mitochondrial Function

Guy Keller, Hadassah-Hebrew University Medical Center, Israel

17h50 Discussion & Concluding Remarks with Chairpersons & Scientific Committee

Targeting Mitochondria 2019 Awards

18h00 End of Targeting Mitochondria 2019