

National Institutes of Health
Mitochondrial Biology in Cardiovascular Health and Diseases
 October 6-7, 2008
 Bethesda, Maryland

DAY 1 / OCTOBER 6, 2008

8:00 AM—8:05 AM Welcome
 Michael N. Sack, MD, PhD

8:05 AM—8:15 AM Opening Remarks
 Elizabeth G. Nabel, MD

Session 1 **The Regulatory Control of Mitochondrial Homeostasis**
 Chair: Daniel P. Kelly, MD

8:15 AM—8:35 AM Proteolytic Control of Mitochondrial Biogenesis and Dynamics
 Thomas Langer, PhD

8:35 AM—8:55 AM The PGC Family is Master Regulators of Mitochondrial Biogenesis
 Bruce M. Spiegelman, PhD

8:55 AM—9:15 AM Assembling the Components and Circuitry for Mitochondrial Biogenesis
 Vamsi K. Mootha, MD

9:15 AM—9:35 AM Mitochondrial Gene Expression and Signaling in Disease and Aging
 Gerald S. Shadel, PhD

9:35 AM—9:50 AM Biological Function of SIRT5 in Metabolism
 Takashi Nakagawa

9:50 AM—10:25 AM BREAK

Session 2 **Reactive Oxygen Species Biology, Calcium and the Role of Mitochondria in Signal Transduction**
 Chair: Toren Finkel, MD, PhD,

10:25 AM—10:45 AM Mechanisms of Cardioprotection by Nitric Oxide acting at the Mitochondrial Level
 Paul S. Brookes, PhD

10:45 AM—11:05 AM New Perspectives on the Role of Mitochondria in Heart Disease
 Brian O'Rourke, PhD

11:05 AM—11:25 AM Keeping Mitochondria in Shape: A Matter of Life and Death
 Luca Scorrano, MD, PhD

11:25 AM—11:45 AM Mitochondrial Production of Reactive Oxygen Species
 Dmitry B. Zorov, PhD

11:45 AM—12:05 PM Mitochondrial Pathways for Reactive Oxygen Species Formation and Myocardial Injury
 Fabio Di Lisa, MD

12:05 PM—1:35 PM Lunch/ Poster Session (Attended)

Session 3 **Proteomics in Advancing the Understanding of Mitochondrial Biology**
 Chair: Peipei Ping, PhD

1:35 PM—1:55 PM The Dynamics of the Mitochondrial Proteome
 Peipei Ping, PhD

DAY 1 / OCTOBER 6, 2008 (Continued)

- 1:55 PM—2:15 PM Mitochondria in Heart Failure
Jennifer van Eyk, PhD
- 2:15 PM—2:35 PM Systems Biology of the Mitochondria
Robert S. Balaban, PhD
- 2:35 PM—2:50 PM Proteomics of Lysine Acetylation in Mitochondrion
Yingming Zhao

Session 4	Imaging of Mitochondrial Function Chair: Robert S. Balaban, PhD
2:50 PM—3:10 PM	Dynamic Cardiac Mitochondria W. Jonathan Lederer, MD, PhD
3:10 PM—3:35 PM	BREAK
3:35 PM—3:55 PM	A Functional Link Between Mitochondrial Morphology and Cell Cycle Progression at G1-S Jennifer A. Lippincott-Schwartz, PhD
3:55 PM—4:15 PM	Mitochondrial Energy Metabolism in the Diabetic Heart and Skeletal Muscle Kieran Clarke, PhD
4:15 PM—4:35 PM	Mitochondria from Cradle to Grave Roberta A. Gottlieb, MD
4:35 PM—4:50 PM	PDGFR- β Signaling is an Essential Component of the Cardiac Response to Load Induced Stress Aarif Y. Khakoo, MD
4:50 PM—5:00 PM	Scientific Poster Award Presentation
7:00PM—9:00 PM	Banquet Dinner - Hyatt Regency Bethesda, Ballroom level Waterford Lalique Suite

DAY 2 / OCTOBER 7, 2008

8:00 AM—8:15 AM Welcome
 Robert S. Balaban, PhD

Session 5 **Mitochondrial Dysfunction and Genetic Diseases**
 Chair: Paul M. Hwang, MD, PhD

8:15 AM—8:35 AM Metabolic Basis of Hypertrophic Cardiomyopathy
 Hugh Watkins, MD, PhD

8:35 AM—8:55 AM Mitochondrial Dynamics in Development and Disease
 David C. Chan, MD, PhD

8:55 AM—9:15 AM Mitochondria-Targeted Antioxidants as Potential Therapies
 Michael P. Murphy, PhD

9:15 AM—9:30 AM Reduced Fatty Acid Metabolism and Elevated Mitochondrial
 H_2O_2 Emission are Associated with Decreased PPAR α in
 Diabetic Human Myocardium
 Ethan Anderson

9:30 AM—9:55 AM BREAK

Session 6 **Mitochondrial Role in Increasing Cardiovascular Risk including
 Obesity and Type II Diabetes**
 Chair: Michael N. Sack, MD, PhD

9:55 AM—10:15 AM The Role of Insulin Signaling in Mitochondrial Dysfunction
 Evan Dale Abel, MD, PhD

10:15 AM—10:35 AM Mitochondrial Dysfunction and Type 2 Diabetes
 Gerald I. Shulman, MD, PhD

10:35 AM—10:55 AM Role of Skeletal Muscle in Human Energy Metabolism
 Kong Y. Chen, PhD

Session 7 **Mitochondrial Function in Cardiovascular Disease- Ischemia,
 Hypertrophy and Heart Failure**
 Chair: Elizabeth C. Murphy, PhD

10:55 AM—11:15 AM Connexin 43 in Mitochondria: Functional Importance
 Rainer Schulz, MD, PhD

11:15 AM—11:35 AM Molecular Identity of the Mitochondrial Permeability Transition Pore
 Christopher P. Baines, PhD

11:35 AM—11:55 AM Cardioprotection and Altered Mitochondrial Transport
 Charles J. Steenbergen, Jr., MD, PhD

11:55 AM—1:25 PM Lunch/Attended Poster Session

1:25 PM—1:45 PM Mitochondrial Function and Energy Metabolism in Heart Failure
 Rong Tian, MD, PhD

1:45 PM—2:05 PM Dysregulation of the PGC-1 Cascade in the Failing Heart
 Daniel P. Kelly, MD

DAY 2 / OCTOBER 7, 2008 (Continued)

2:05 PM—2:25 PM The Modulation of Mitochondrial Respiration by Nitrite During
Ischemia/Reperfusion
Sruti Shiva, PhD

Session 8

The Mitochondria as a Therapeutic Target in Cardiovascular Disease
Chair: Heinrich Taegtmeyer, MD, PhD

2:25 PM—2:45 PM Inhibition of GSK-3 β in Cardioprotection
Steven J. Sollott, MD

2:45 PM—3:05 PM Genes and Small Molecules That Slow Aging-Effects on
Cardiovascular Disease
David A. Sinclair, PhD

3:05 PM—3:30 PM BREAK

3:30 PM—3:50 PM Targeting Malonyl CoA Inhibition of Mitochondrial Fatty and Uptake as
an Approach to Treat Cardiac Ischemia
Gary D. Lopaschuk, PhD

3:50 PM—4:10 PM Pre and Postconditioning:- from Laboratory Bench to Hospital Bedside
Derek M. Yellon PhD, DSc

4:10 PM—4:30 PM Novel Therapies for Mitochondrial Pathology in Heart Failure
William C. Stanley, PhD

4:30 PM—4:45 PM Closing Remarks
Michael N. Sack, MD, PhD