

ITC CONFERENCE GRANT SCIENTIFIC REPORT

This report is submitted for approval by the grant to the MC Chair.

Action number: CA15203 - Mitochondrial mapping: Evolution - Age - Gender - Lifestyle - Environment

Conference title: Mitochondria in Health and Disease, Gordon Research Conference Mitochondrial Dynamics and Signaling

Conference start and end date: 17/03/2019 to 22/03/2019

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Grantee name: Erkan Tuncay

ACTIVITIES DURING YOUR ATTENDANCE AT THIS CONFERENCE:

GRC conference mainly focused on mitochondrial function and importance role on diseases. Mitochondria were traditionally thought to act only as cellular powerplants. Recent progress in genetics, proteomics and imaging approaches to track mitochondria in vivo has provided evidence that mitochondria are central to cell signaling and dynamics, and for the response to stress. However, we still know very little about how they behave in the cell, and what influences them biochemically and physically. This applies to various aspects of mitochondrial behavior, including motility, heterotypic and homotypic contact formation, fusion-fission, and secretion. These aspects were difficult to study in the heart and other components of the cardiovascular system but with the recent progress in technology, their significance for health and disease has been proven.

First day of the conference is focused on basic information about mitochondrial physiology, which was very helpful to understand following presentations. On the other hand, the conference gave information about mitochondrial existence both in model systems and in cells with specialized structural and functional arrangements like cardiomyocytes and muscle fibers. The program had an emphasis on the physiological situations but also covered mitochondrial stress responses elicited by various conditions, including environmental exposures, which initiate or augment cell injury. Considering the dominance of cardiac, neuronal, and muscular impairments in mitochondrial diseases, the program of the new conference focused on these tissues. Thus, they address the unmet needs for comprehensively support of the broad and rapidly emerging mitochondrial biology research and the wealth of scientists who had been working on this field. This meeting also engaged junior investigators, female scientists, and underrepresented minorities who seek training in mitochondrial biology.

During the meeting, presenters showed their unpublished and published studies on mitochondrial trafficking, mitochondrial dynamics, mitochondrial fusion and fission, Mitochondrial Fatty Acid Synthesis, latest developments in contacts between mitochondria and other organelles such as the endoplasmic reticulum and lysosomes, signaling pathways at the outer membrane and intermembrane space for metabolism and apoptosis, signaling pathways that utilize calcium and ROS, Unfolded Protein Response and Mitochondrial Dysfunction in Neurodegenerative Disorders, the use of new technologies and approaches to study mitochondrial biology.

I presented Mitochondria-Specific Superoxide Scavenger MitoTempo Improves Heart Function in Senescent Cardiomyocytes. All poster presenters presented their posters for 2 days. It was well-organized poster presentation session, which helped you to present your study with details and gave a chance to introduce yourself and discuss about future plan.

IMPACT ON YOUR RESEARCH AND FUTURE COLLABORATIONS (if applicable)

(max.500 words)

I presented Mitochondria-Specific Superoxide Scavenger MitoTempo Improves Heart Function in Senescent Cardiomyocytes. All poster presenters presented their posters for 2 days. It was well-organized poster presentation session, which helped you to present your study with details and gave a chance to introduce yourself and discuss about future plan. It also gave a chance to know new people in the field of mitochondria and provided collaborations. Learning new techniques was the best profit of the conference especially in the electrophysiology field.