

2023

5.10 (wed.) 12:10 ~ 12:50

12:10-12:15

◆ Introduction

12:15-12:40

◆ Seminar  
(Presentation)

12:40-12:50

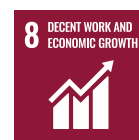
◆ Q&amp;A

Online  
(Zoom)Scan here for  
Registration ▶▶[https://temdec-med-kyushu-u-ac-jp.zoom.us/webinar/register/WN\\_l6xf4l0KTXyHpWMvPIaRvA](https://temdec-med-kyushu-u-ac-jp.zoom.us/webinar/register/WN_l6xf4l0KTXyHpWMvPIaRvA)

Supported by Kyushu University, Q-AOS &amp; TEMDEC

# From Heart Research to Healthy Longevity ~Toward the Realization of One Health~

Chair: Assoc. Prof. Toshinori TANAKA (Research Promotion Coordinator of Q-AOS)

**Key Words**

mitochondria

heart

sulfur

healthy longevity

one health

**Professor Motohiro Nishida**Department of Pharmaceutical Health Care and Sciences,  
Faculty of Pharmaceutical Sciences, Kyushu University

Prof. Nishida was born in Himeji, Hyogo Prefecture. As a student at the University of Tokyo, Faculty and Graduate School of Pharmaceutical Sciences, he studied on cardiac redox sensing and stress responses, and got PhD degree by publishing his research achievement in Nature (2000). After he experienced an Assistant Professor at the Okazaki Institute for Physiological Sciences, and Associate Professor at Kyushu University, Graduate School of Pharmaceutical Sciences, he was appointed as a Professor at the National Institute for Physiological Sciences in 2013, and became a cross-appointment Professor at Kyushu University, Graduate School of Pharmaceutical Sciences in 2016. He also actively contributes to academic translational research as the Director of the Green Pharma Research Center in Kyushu University from 2021. His research achievements on drug discovery were highly appreciated and awarded for The 2022 Nishinippon Shimbun Cultural Foundation Award.

The human heart is a unique organ that beats without being replaced for nearly 100 years from birth to death. Our research focuses on how to control the quality of cells and their components (organelle and proteins) to understand how the cardiac muscle cells that make up the pumping function can adapt to the daily-exposed environmental stresses, and what triggers the heart to become vulnerable to environmental stress. Mitochondria are intracellular organelle that produce the energy necessary for biological activities using oxygen. Recent studies have revealed that reduced oxygen utilization in mitochondria is associated with diabetes, aging, and cancer progression, while overuse of oxygen also increases the risk of disease development. Our research focuses on the sulfur dynamics as a biological molecule for efficient oxygen utilization. In this seminar, I will introduce the effects of sulfur metabolism and dynamics on cardiac stress resistance, and discuss its contribution to the 'One Health' concept, which integrates the health of all animals, plants and the global environment.