2025 KSBNS

Symposium 41

Title: Pleiotropic Roles of Mitochondria in Neurobiology

August 26th (Tuesday), 14:30-16:25

Rm.206-207, Songdo CONVENSIA, Incheon, Korea

한국뇌신경과학회
The Korean Society for Brain and Neural Sciences

Registration KSBNS2025.org

Organizer

Seok-Kyu Kwon, Ph.D.

Korea Institute of Science and Technology (KIST), Brain Science Institute

Neuronal mitochondria support region-specific functions like ATP production, ROS regulation, and calcium clearance. Mitochondria adapt dynamically to physiological and pathological conditions and interact with organelles to maintain synaptic transmission and cellular homeostasis, crucial for neuronal survival. This symposium explores mitochondrial roles in neurobiology using advanced imaging to unveil mechanisms vital to neuronal integrity and function.

Speakers

Angelika Harbauer, Ph.D.
Max Planck Institute/Technical University of Munich, Germany
"Mitochondrial homeostasis at organellar contact sites in neurons"

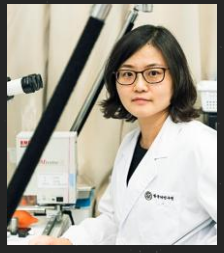
Her team aims to discover the underlying mechanisms that regulate local translation of mitochondrial proteins and to analyze the adaption of this important organelle in response to neuronal activity in health and disease. Understanding the molecular mechanisms that govern mitochondrial health and functions in neurons will further our knowledge on how this important organelle cross-talks with our neurons and ultimately affects our brain and behavior.

Sang Ki Park, Ph.D.
POSTECH
The role of EPHA2 ligand-independent signaling in early neurodevelopment

His lab is dedicated to deepening our understanding of the molecular foundations of major psychiatric disorders using cutting-edge techniques, from biochemistry and molecular biology to cell biology, pharmacology, genetics, and behavioral science. His team aims to uncover new molecular targets for treatment and broaden our comprehension of higher brain functions.

Kyu-Sun Lee, Ph.D.
Korea Research Institute of Bioscience and Biotechnology (KRIBB)
Organellar pathogenesis in neurodegenerative diseases

His lab is investigating the fundamental roles of mitochondria and ER-mitochondria contact in neuronal physiological and pathological contexts, especially neurodegenerative diseases.



Ji Young Mun, Ph.D.
Korea Brain Research Institute (KBRI)
Correlative organelle microscopy with multimodal data to study mitochondria in lipid related neuronal developmental disorders

Her team is focusing on functional and structural relationship between cellular organelles in neuron and glia using various innovative techniques including Correlative microscopy, 3D-EM, Cryo-EM, and brain organoids. They are exploring pathology of both neurodevelopmental and neurodegenerative diseases based on these intracellular networks.