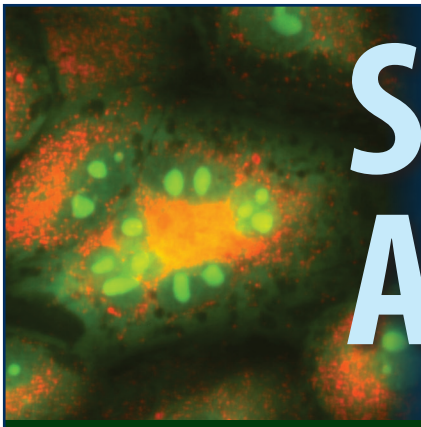

Selective Autophagy

April 22–26, 2018 | Westin Miyako Kyoto | Kyoto | Japan

Scientific Organizers:
Tamotsu Yoshimori, Osaka University, Japan
Hong Zhang, Chinese Academy of Sciences, China
Anne Simonsen, University of Oslo, Norway

*Joint with the conference on **Mitochondrial Biology***

Autophagy is an evolutionarily conserved membrane trafficking process which delivers cargo from the cytoplasm to lysosomes and is critical for cellular homeostasis. Although autophagy has long been perceived as a non-selective pathway, researchers are increasingly realizing that autophagy can be highly selective. It has been shown that protein aggregates and damaged or superfluous organelles such as mitochondria, ER, peroxisomes, endosomes, and lysosomes can be degraded by autophagy in a highly selective manner. Selective autophagy has also been shown to play an important role in controlling intracellular pathogens. Since several diseases have been linked to dysfunctional selective autophagy, researchers' interest in the process is increasing. Altering the autophagy level has become a therapeutic target in various diseases, while the exact mechanisms of selective autophagy for each target remain to be uncovered. The primary goal of this program is to integrate and discuss the latest information about the underlying mechanisms of selective autophagy and its implication in diseases.

Session Topics:
- Aggrephagy and Neurodegenerative Disease
- Autophagy Receptors and Other Machinery in Selective Autophagy
- Mitophagy (Joint)
- Xenophahy and Autophagy in Immunity
- Metabolism (Joint)
- Organellophagy Other than Mitophagy
- Endo-Lysosome System
- Therapeutic Regulation of Autophagy

Scholarship Application & Discounted Abstract Deadline: December 19, 2017
Abstract Deadline: January 16, 2018
Discounted Registration Deadline: February 22, 2018

Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted. Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program.

Upper image of lung cancer autophagy courtesy of National Cancer Institute, NIH

Meeting Hashtag: #KSautophagy

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KEYSTONE SYMPOSIA
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Selective Autophagy (Z2)

Scientific Organizers: Tamotsu Yoshimori, Hong Zhang and Anne Simonsen

Sponsored by Nestlé Institute of Health Sciences

Mitochondrial Biology (Z1)

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SUNDAY, APRIL 22

Arrival and Registration

MONDAY, APRIL 23

Welcome and Keynote Session (Joint)

*__Ivan Dikic__, Goethe University Medical School, Germany

*__Jodi Nunnari__, University of California, Davis, USA

__David M. Sabatini__, Whitehead Institute for Biomedical Research, USA
mTOR and Lysosomes in Growth Control

__Jennifer A. Lippincott-Schwartz__, Howard Hughes Medical Institute - Janelia Farm, USA
Autophagy's Role in Mitochondrial Function and Dysfunction

Aggrephagy and Neurodegenerative Disease (Z2)

*__Masaaki Komatsu__, School of Medicine Niigata University, Japan

__Ai Yamamoto__, Columbia University, USA
Selective Autophagy in the CNS

__Hong Zhang__, Chinese Academy of Sciences, China
Loss of Collagen Related to the Cuticle Annular Furrow Activates Systemic Autophagy

__Anne Simonsen__, University of Oslo, Norway
Regulation of Selective Autophagy

__Maneka Chitiprolu__, University of Ottawa, Canada
Short Talk: A Complex of C9ORF72 and p62 Uses Arginine Methylation to Eliminate FUS and Stress Granules by Autophagy

__Santosh Chauhan__, Institute of Life Sciences, India
Short Talk: TRIM16 Control Protein Aggregates Turnover by Regulating NRF2-p62 Axis and Autophagy Process

Mitochondrial Dynamics (Z1)

*__Aleksandra Trifunovic__, University of Cologne, Germany

__Orian S. Shirihai__, University of California, Los Angeles, USA
Lipid Droplet Mitochondria: Mitochondria With Agenda

__David C. Chan__, California Institute of Technology, USA
Mitochondrial Fusion and Fission in Health and Disease

__Thomas Langer__, CECAD Research Center, Germany
Proteolytic Control of Mitochondrial Membrane Homeostasis

__Hiromi Sesaki__, Johns Hopkins University School of Medicine, USA
Short Talk: Human Brain Evolution Driven by Drp1

__Naotada Ishihara__, Kurume University, Japan
Short Talk: Selective Mitochondrial Fusion by Heterotypic Action between OPA1 and Cardiolipin

Poster Session 1

Workshop 1 (Z2)

*__Hong Zhang__, Chinese Academy of Sciences, China

__Christian Behl__, University Medical Center of the Johannes Gutenberg University, Germany
RAB18 Modulates Autophagosome Formation and is Functionally Compensated by ATG9A

__Yasin Dagdas__, Gregor Mendel Institute, Austria
Role of Autophagy in Phenotypic Plasticity Responses in Plants

__Marie Witt__, Max-Delbrück-Center for Molecular Medicine, Germany
Structure-Function Studies on FIP200 Reveal Mechanistic Insights into Selective Autophagy

__Liang Ge__, Tsinghua University, China
Endomembrane Remodeling in Autophagic Membrane Formation

__Maho Hamasaki__, Osaka University, Japan
Chemical Activation of LC3 Conjugation System Uncover the New Insight of LC3 Lipidation Site

Workshop 1: Dynamics (Z1)

*__Laura L. Lackner__, Northwestern University, USA

__Suzanne Hoppins__, University of Washington, USA
Identification of a New Functional Domain in the Mitofusin Proteins

__Mickael Cohen__, CNRS-UPMC, France
Mechanism and Regulation of Homotypic Fusion between Outer Membranes

__Alessandra Maresca__, IRCCS Istituto Scienze Neurologiche, Italy
OPA3 Mutations Highlight a Patho-Mechanism Involving Fission and Autophagy

__Cecilia Patitucci__, Université de Paris Descartes, France
The Role of MTP18 in Mitochondrial Dynamics and Metabolism

__Ken Nakamura__, University of California, San Francisco, USA
A High-Throughput Screen of Real-Time ATP Levels in Individual Cells Reveals Mechanisms of Energy Failure

__Juliette Lee__, University of Cambridge, UK
Basal Mitophagy Is Widespread in Drosophila but Minimally Affected by Loss of Pink1 or Parkin

__Thomas Rival__, Aix-Marseille Université, France
Mitofusin Mutations Commonly Associated with Charcot-Marie-Tooth Neuropathy Have Opposite Effects on Mitochondrial Fusion

__Ramona Schuster__, Institute for Genetics, University of Cologne, Germany
Cdc48 Regulates a Deubiquitylase Cascade Critical for Mitochondrial Fusion

Autophagy Receptors and Other Machinery in Selective Autophagy (Z2)

*__Noboru Mizushima__, University of Tokyo, Japan

__Sascha Martens__, University of Vienna, Austria
Templating Autophagosomal Membrane Growth during Selective Autophagy

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Patricia Boya, Centro de Investigaciones Biológicas, CSIC, Spain
Mitophagy as a Regulator of Metabolism and Cell Differentiation

Christian Behrends, Ludwig Maximilians University München, Germany
Autophagosomal Content Profiling as a Tool to Dissect the Contribution of Autophagy to Proteostasis

Michael Lazarou, Monash University, Australia
Short Talk: LC3/GABARAPs Drive Ubiquitin-Independent Recruitment of Optineurin and NDP52 to Amplify Mitophagy

Mitochondrial Quality Control (Z1)

*__Richard J. Youle__, NINDS, National Institutes of Health, USA

Luca Scorrano, University of Padova, Italy
Localized Accumulation of Autophagosomes at Axonal Hillocks Depletes Axons from Damaged Mitochondria

Andrew G. Dillin, University of California, Berkeley, USA
Mitochondrial Unfolded Protein Responses

Aleksandra Trifunovic, University of Cologne, Germany
Quality Control of Mitochondrial Complex I

Adam L. Hughes, University of Utah, USA
Short Talk: The Nucleus Is a Common Quality Control Destination for Failed Mitochondrial Import Substrates

Felix Boos, University of Kaiserslautern, Germany
Short Talk: Dissolving the Traffic Jam – How Cells Counteract the Blockage of Mitochondrial Protein Entry Gates

TUESDAY, APRIL 24

Mitophagy (Joint)

*__Patricia Boya__, Centro de Investigaciones Biológicas, CSIC, Spain

*__Nikolaus Pfanner__, University of Freiburg, Germany

Richard J. Youle, NINDS, National Institutes of Health, USA
Pink1-Parkin Pathway

Ivan Dikic, Goethe University Medical School, Germany
Ubiquitin and TBK1 interplay in Selective Autophagy

Erika L. F. Holzbaur, University of Pennsylvania, USA
Dynamics of Autophagy and Mitophagy in Neurons

Koji Okamoto, Osaka University, Japan
Regulation of Mitochondrial Clearance via ER Factors

Jane E. Craig, St. Jude Children's Research Hospital, USA
Short Talk: MEK5/ERK5-Mediated Regulation of Mitophagy

Thomas McWilliams, University of Helsinki, Finland
Short Talk: Resolving Endogenous PINK1-Parkin Activation to in vivo Mitophagy

Meet the Editors (Joint)

*__Jodi Nunnari__, University of California, Davis, USA

*__Anne Simonsen__, University of Oslo, Norway

Stella M. Hurtley, Science, UK

Tim Spencer, Journal of Cell Biology, USA

Sharon Ahmad, Journal of Cell Science, UK

Robert Kruger, Cell, USA

Christina Kary, Nature Cell Biology, USA

Petra Gross, Journal of Cell Science, UK

Niki Scaplehorn, Nature Communications, UK

Sadaf Shadan, Nature, UK

Srividya Chandramouli, Cell Press, USA

Paulina Jadwiga Strzyz, Nature Reviews Molecular Cell Biology, UK

Elisabetta Argenzio, EMBO Journal, Germany

Xenophagy and Autophagy in Immunity (Z2)

*__Eric H. Baehrecke__, University of Massachusetts Medical School, USA

Vojo Deretic, University of New Mexico Health Sciences Center, USA
GALTOR Regulates mTOR and AMPK and Links Metabolic and Quality Control Functions of Autophagy in Endomembrane Damage

John Hunter Brumell, Hospital for Sick Children, Canada
How ATG Proteins Limit Listeria Spread

Laure-Anne Ligeon, University of Zürich – Institute of Experimental Immunology, Switzerland
Short Talk: Mechanisms of LC3-Associated Phagocytosis for MHC Class II Presentation

Rachel Ulferts, University of Cambridge, UK
Short Talk: Influenza A Infection Triggers a Cellular Response that Resembles Autophagy but has a Distinct Molecular Basis

Mitochondrial Motility and Distribution (Z1)

*__Luca Scorrano__, University of Padova, Italy

Thomas L. Schwarz, Children's Hospital Boston and Harvard Medical School, USA
Mitochondrial Motility

Benoit Kornmann, ETH Zurich, Switzerland
Mechanical Force Induces Mitochondrial Fission via the Canonical Fission Machinery

Laura L. Lackner, Northwestern University, USA
Mitochondrial Anchors: Positioning Mitochondria and More

Guillermo López-Doménech, University College London, UK
Short Talk: Miro Proteins Coordinate Microtubule and Actin-Dependent Mitochondrial Transport and Distribution

Dane M. Wolf, University of California, Los Angeles, USA
Short Talk: Milton1 Coordinates Mitochondrial Motility, Form, and Function with Nutrient Status in β Cells

Poster Session 2

WEDNESDAY, APRIL 25

Metabolism (Joint)

*__Marja Jäättelä__, Danish Cancer Society Research Center, Denmark

*__Jared Rutter__, University of Utah, USA

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Andrea Ballabio, Telethon Institute of Genetics and Medicine, Italy
An mTOR-TFEB Feedback Loop Controls the Response to Starvation and Physical Exercise and Is Deregulated in Cancer

Masaaki Komatsu, School of Medicine Niigata University, Japan
Selective Autophagy Regulates Lipid Metabolism

Anu Suomalainen Wartiovaara, University of Helsinki, Finland
Metabolic Basis of Mitochondrial Disease

Norbert Perrimon, Harvard Medical School, USA
Physiological Regulation of Organismal Homeostasis

Myung-Shik Lee, Yonsei University College of Medicine, South Korea
Short Talk: Role of Mitophagy in Pancreatic Beta Cell Function

Martin Graef, Max Planck Institute for Biology of Aging, Germany
Short Talk: Autophagy Functions in Mitochondrial DNA Maintenance and Copy Number Regulation

Workshop 2: Communication (Z1)

*__Adam L. Hughes__, University of Utah, USA

Yusuke Hirabayashi, Columbia University, USA
ER-Mitochondria Tethering by PDZD8 Regulates Ca2+ Dynamics in Mammalian Neurons

Yvette C. Wong, Northwestern University, USA
Mitochondria-Lysosome Contacts Regulate Mitochondrial Fission via Rab7 GTP Hydrolysis

Thomas Ryan Hurd, New York University School of Medicine, USA
Mitochondrial Fragmentation Drives the Selective Removal of Deleterious Mitochondrial DNA in the Drosophila Germline

Lena Pernas, University of Padua, Italy
Mitochondria Limit Toxoplasma Growth by Competing for Fatty Acids

Keisuke Takeda, Tokyo University of Pharmacy and Life Sciences, Japan
MITOL Prevents ER Stress-Induced Apoptosis via IRE1α Ubiquitylation at ER-Mitochondria Contact Sites

Michal Turek, University of Warsaw, Poland
Spatial Relationship between Mitochondria and the Protein Quality Control System

Magali R. VanLinden, University of Bergen, Norway
Mitochondrial NAD is a Key Determinant of the Metabolic Profile of Human Cells and is Connected to the Peroxisomal NAD Pool

David A. Stroud, University of Melbourne, Australia
Systems Approaches to Understanding the Assembly of Mitochondrial Machines

Organellophagy Other than Mitophagy (Z2)

*__Vojo Deretic__, University of New Mexico Health Sciences Center, USA

Hitoshi Nakatogawa, Tokyo Institute of Technology, Japan
Molecular Mechanisms of Organellophagy in Yeast

Eric H. Baehrecke, University of Massachusetts Medical School, USA
Novel Regulators of Organelle Autophagy

Tamotsu Yoshimori, Osaka University, Japan
Dissection of Molecular Mechanisms in Lysophagy

Heeseon An, Harvard Medical School, USA
Short Talk: Systematic Analysis of Ribophagy in Human Cells Reveals Bystander Degradation during Selective Autophagy

Mitochondrial Communication I (Z1)

*__Orian S. Shirihai__, University of California, Los Angeles, USA

Gia K. Voeltz, University of Colorado Boulder, USA
ER-Linked Mitochondrial Division

Jared Rutter, University of Utah, USA
Novel Mitochondrial Biochemistry

Peter Walter, HHMI/University of California, San Francisco, USA
Signaling in the Unfolded Protein Response

Peter Rehling, University Medical Centre Göttingen, Germany
Short Talk: Defective Mitochondrial Cardiolipin-Remodeling Dampens HIF1-alpha Transcription

Jakob Daniel Busch, Max-Planck-Institute for Biology of Ageing, Germany
Short Talk: MitoRibo-Tag Mice to Study the Mitochondrial Ribosome in vivo

Poster Session 3

THURSDAY, APRIL 26

Endo-Lysosome System (Z2)

*__Hitoshi Nakatogawa__, Tokyo Institute of Technology, Japan

Noboru Mizushima, University of Tokyo, Japan
ATG Genes in Zebrafish and Mice

Marja Jäättelä, Danish Cancer Society Research Center, Denmark
Lysosomal STAT3 Regulates Intracellular Proton Equilibrium

Enrique J. Garcia, Columbia University, USA
Short Talk: ESCRT-Mediated Microlipophagy during Lipid Imbalance

Harald Stenmark, Oslo University Hospital, Norway
Lysosome Repair vs Lysophagy

Roberto Zoncu, University of California, Berkeley, USA
A Nutrient-Induced Affinity Switch Controls mTORC1 Capture by its Lysosomal Scaffold

Arnold Y. Seo, Janelia Research Campus, USA
Short Talk: Macroautophagy Enhanced by Mitochondrial Respiration Remodels Vacuole Liquid-Ordered Membrane Domain to Control Micro-Lipophagy

Regulation of Mitochondrial Biogenesis (Z1)

*__Thomas Langer__, CECAD Research Center, Germany

Nikolaus Pfanner, University of Freiburg, Germany
Protein Biogenesis and Architecture of Mitochondria

Elena I. Rugarli, University of Cologne, Germany
Post-Transcriptional Control of Mitochondrial Function

Brendan J. Battersby, University of Helsinki, Finland
Selective Mitochondrial Proteotoxicity Triggers a Stress Response on Membrane Dynamics and Ribosomes

Eric A. Shoubridge, McGill University, Canada
Mitochondria 101: Mitochondrial Interaction Network

Stefan Jakobs, Max Planck Institute for Biophysical Chemistry, Germany
Short Talk: Spatial Distribution of Mitochondrial Translation and OXPHOS Complex Assembly

Sofia Zaganelli, University of Geneva, Switzerland
Short Talk: Identification of Mitochondrial RNA Granules Assembly Factors and Regulators using an Image-Based siRNA Screen

Poster Session 4

Workshop 2 (Z2)

*__Tamotsu Yoshimori__, Osaka University, Japan

Michael Joseph Munson, University of Oslo, Norway
The Regulation of Mitophagy by Lipid-Binding Proteins

Fumiyo Ikeda, IMBA – Institute of Molecular Biotechnology, Austria
The IAP Family Member BRUCE Regulates Autophagosome-Lysosome Fusion

Shigeomi Shimizu, Tokyo Medical and Dental University, Japan
Mechanisms and Biological Roles of Golgi-Stress-Induced Mitophagy

Martina B. Wirth, Francis Crick Institute, UK
Structural Determinants Mediating Selective Binding of Autophagy Adaptors and Receptors to Mammalian ATG8 Proteins

Elena Marcassa, University of Liverpool, UK
Regulation of Basal Mitophagy and Pexophagy by the Mitochondrial Deubiquitylase USP30

Therapeutic Regulation of Autophagy (Z2)

*__Ai Yamamoto__, Columbia University, USA

Jayanta Debnath, University of California, San Francisco, USA
NBR1, Selective Autophagy and Metastasis

Beat Nyfeler, Novartis Institutes for BioMedical Research, Switzerland
Phenotypic Screening Paradigms for Autophagy Pathway Regulators

Noriyuki Matsuda, Tokyo Metropolitan Institute of Medical Science, Japan
Mitochondria Quality Control Elucidated from Parkinson's Disease

Mitochondrial Communication II (Z1)

*__Benoit Kornmann__, ETH Zurich, Switzerland

Toshiya Endo, Kyoto Sangyo University, Japan
Mitochondrial Protein and Lipid Trafficking

William A. Prinz, NIDDK, National Institutes of Health, USA
Link between Lipid Synthesis and Transport to Mitochondria

Jodi Nunnari, University of California, Davis, USA
Mitochondrial Behavior

Christoph Uwe Mårtensson, University of Freiburg, Germany
Short Talk: Protein Quality Control at the Main Entry Gate for Precursor Proteins into Mitochondria

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (Z2)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (Z1)

FRIDAY, APRIL 27

Departure