KEYSTONE SYMPOSIA
on Molecular and Cellular Biology

Targeted Protein Degradation (X8)

Scientific Organizers: Rajesh Chopra, Nathanael Gray, Anita Gandhi and Georg Winter

Sponsored by Incyte Corporation, Merck & Co., Inc. and Novartis Institutes for BioMedical Research

Ubiquitin Biology (X7)

Scientific Organizers: Eric J. Bennett, Nicolas H. Thomä and Niels Mailand

March 29-April 1, 2020 • Snowbird Resort • Snowbird, UT, USA

Supported by a grant from Genentech

Discounted Abstract & Scholarship Deadline: November 21, 2019 / Abstract Deadline: December 19, 2019 / Discounted Registration Deadline: January 29, 2020

SUNDAY, MARCH 29

Arrival and Registration

MONDAY, MARCH 30

Welcome and Keynote Address (X8)

James E. Bradner, Novartis Institutes for BioMedical Research, USA
Targeted Protein Degradation: Chemical Biology and Therapeutics

Welcome and Keynote Address (X7)

Ivan Dikic, Goethe University Medical School, Germany
Serine Ubiquitination in Host-Pathogen Interactions

Proteolysis Targeting Chimeras (PROTACs) (X8)

Craig M. Crews, Yale University, USA
PROTACs: Two Decades of Targeted Protein Degradation

Alessio Ciulli, University of Dundee, School of Life Sciences, UK
Structural Chemical Biology and Insights into PROTAC Mechanism of Action

Nathanael Gray, Dana-Farber Cancer Center, USA
Targeting Kinases Via Protein Degradation

Short Talks Chosen from Abstracts

Regulating Nuclear Function with Ubiquitin (X7)

Niels Mailand, University of Copenhagen, Denmark
Exploring the Cellular Functions of K27 Linkage-Specific Ubiquitylation

Jo R. Morris, University of Birmingham, UK
Sticky Notes: The Role of SUMO in DNA Double-Strand Break Repair

Karim Labib, University of Dundee, UK
Destroying the Eukaryotic Replisome

Ning Zheng, University of Washington, USA
Short Talk: Mechanism of COMPASS-Mediated Histone H2B Ubiquitination and H3K4 Methylation Crosstalk

Olga Kochenova, Harvard Medical School, USA
Short Talk: The Mechanism of Vertebrate Replisome Disassembly by 97

Workshop 1 (X8)

Short Talks Chosen from Abstracts

Mechanisms of Protein Ubiquitylation and Degradation (Joint)

Brenda A. Schulman, Max Planck Institute of Biochemistry, Germany
Cullin-RING E3 Ligation Mechanisms

Nicolas H. Thomä, Friedrich Miescher Institute for Biomedical Research, Switzerland
The Zinc-Finger Degrome

Kylie J. Walters, NCI, National Institutes of Health, USA
Outskirts of the Proteasome: Substrate Receptors and Beyond

Moritz Hunkeler, Dana-Farber Cancer Institute, USA
Short Talk: Structural and Functional Studies of HECT Ubiquitin Ligases

Poster Session 1

TUESDAY, MARCH 31

Strategies for Therapeutic Targeting of the Ubiquitin Proteasome System (Joint)

David Komander, Walter and Eliza Hall Institute of Medical Research, Australia
Novel Tools and Methods to Study Ubiquitin Modifications

Ingrid E. Wertz, Genentech, Inc., USA
Identification, Development, and Characterization of Inhibitors for Deubiquitinating Enzymes

Kyle R. Simonetta, Nurix Therapeutics, USA
Targeted Protein Degradation through the Prospective Identification of Molecular Glue

Sara Buhrlage, Dana-Farber Cancer Institute, USA
Approaches to Identify New DUB Inhibitors

Ann Morgan Cathcart, Dana Farber Cancer Institute, USA
Short Talk: Global Inhibition of Ubiquitin Thioester Transfer by Targeting a Helix-in-Groove Interaction between E1 and E2

DCAFs as Targets for Protein Degradation (X8)

Anita K. Gandhi, Bristol-Myers Squibb, USA
Emerging CELMoDs in Hematological Malignancies

Deepak Nijhawan, University of Texas Southwestern Medical Center, USA
Molecular Glues for DCAF15 Dependent Protein Degradation

Georg E. Winter, CeMM Research Center for Molecular Medicine, Austria
Chemical Genomics Approaches to Targeted Protein Degradation

Short Talks Chosen from Abstracts

Ubiquitin-Dependent Quality Control Mechanisms (X7)

Thibault Mayor, University of British Columbia, Canada
Global Analysis of Ubiquitination Associated to Cytosolic Protein Quality Control

Michael Rape, University of California, Berkeley, USA
Structural Basis of Dimerization Quality Control

Eric J. Bennett, University of California, San Diego, USA
Targeting the Leftovers: Integrative Characterization of Orphan Protein Degradation

Heeseon An, Harvard Medical School, USA
Short Talk: Systematic Quantitative Analysis of Ribosome Inventory During Nutrient Stress

Itay Koren, Bar Ilan University, Israel
Short Talk: The End of The End: Discovery of Degradation Pathways Recognizing Terminal Degrons

Poster Session 2

WEDNESDAY, APRIL 1

Novel Approaches to Protein Degradation/Homeostasis for Therapeutics (X8)

Leo James, MRC Laboratory of Molecular Biology, UK
Targeted Protein Depletion Using Cytosolic Antibodies

Titia K. Sixma, Netherlands Cancer Institute, Netherlands
Allosteric Regulation of DUBs in DNA Repair

Ryan Potts, St. Jude Children's Research Hospital, USA
A Cancer-Specific Ubiquitin Ligase Drives mRNA Alternative Polyadenylation

Shaomeng Wang, University of Michigan, USA
Targeted Degradation of STAT3 as a New Cancer Therapeutic Strategy

Short Talks Chosen from Abstracts

New Paradigms in Protein Ubiquitylation (X7)

Feng Shao, National Institute of Biological Sciences, China
A Salmonella Effector Reveals the V-ATPase-ATG16L1 Axis that Initiates Bacterial Autophagy

Emily Troemel, University of California, San Diego, USA
Characterization of the Intracellular Pathogen Response, a Novel Proteostasis Pathway in c. elegans

Heran Darwin, New York University School of Medicine, USA
Pup-Proteasome Regulation of Protein Quality Control

Katerina Artavanis-Tsakonas, University of Cambridge, UK
Control of Ubiquitination in Plasmodium Parasites

Miguel A. Prado, Harvard Medical School, USA
Short Talk: Global Remodeling of the Proteome in Terminal Differentiation

Olivia Rissland†, University of Colorado School of Medicine, USA
Short Talk: Egg Activation Triggers Clearance of Maternally Deposited RNA Binding Proteins

Rashmi Agrata, National Centre for Biological Sciences, TIFR, India
Short Talk: UBC13 Deamidation by Shigella Flexneri Disrupts Its Native and Transient Interactions with TRAF6 to Impair Ubiquitination

Workshop 2 (X8)

Short Talks Chosen from Abstracts

Workshop (X7)

Tasneem Bawa-Khalfe, University of Houston, USA
DeSUMOylase Activity of SENP7 Variants in Normal Development and Pathophysiology of the Mammary Gland

Johannes Bigenzahn, CeMM - Center for Molecular Medicine of the Austrian Academy of Science, Austria
The CUL3-LZTR1 E3 Ligase Complex Regulates RAS GTPase Ubiquitination and Signaling

Charlene M. Magtoto, La Trobe University, Australia
The ZYG11 Family – Deciphering How Highly Conserved E3 Ubiquitin Ligases Keep Cells in Shape

Fernando Rodriguez Perez†, University of California, Berkeley, USA
Ubiquitin-Dependent Regulation of Actin Dynamics During Cell Fusion

Melody M.H. Li, University of California, Los Angeles, USA
The Requirement for Ubiquitination in TRIM25-Mediated ZAP Antiviral Activity

Leo Kiss, MRC Laboratory of Molecular Biology, UK
The Mechanism for Specific Ube2N Recruitment & Catalysis by TRIM Ligases

Karen M. Dunkerley†, Western University, Canada
The E3 Ligase Parkin Recognizes a Ligated pUb to Efficiently Polyubiquitinate a Substrate

Achim Werner, NIDCR, National Institutes of Health, USA
Regulation of Human Development by Ubiquitin Chain Editing of Chromatin Remodelers

Methodologies and Technologies for the Investigation of Protein Degradation (X8)

Rajesh Chopra, Institute of Cancer Research, UK
Phenotypic Screens for Identifying Modulators of E3 Ligase Function

Takumi Ito, Tokyo Medical University, Japan
Analysis of Neosubstrates of CRL4CRBN in the Presence of Thalidomide and its Derivatives

Speaker to be Announced

Short Talk Chosen from Abstracts

Ubiquitin System Dysregulation in Disease (X7)

Richard J. Youle, NINDS, National Institutes of Health, USA
Familial Parkinson's Disease and ALS Linked to Mitochondrial Fidelity and Selective Autophagy

J. Wade Harper, Harvard Medical School, USA
Exploring Proteome Homeostasis Mechanisms Using Quantitative Proteomics

James A. Olzmann, University of California, Berkeley, USA
Ubiquitin-Dependent Regulation of Lipid Droplet Proteome Dynamics

Emily K. Cook, Johns Hopkins University School of Medicine, USA
Short Talk: Identifying Substrates of UBE3A and Understanding Their Roles in Neurodevelopmental Disease

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (X8)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (X7)

THURSDAY, APRIL 2

Departure