



Join Keystone Symposia
for the 2016 conference on:

NF- κ B and MAP Kinase Signaling in Inflammation

March 13–17, 2016

Whistler Conference Centre | Whistler, British Columbia | Canada

Scientific Organizers:

Steven C. Ley, Zhijian 'James' Chen and Jenny P.Y. Ting

Joint with the conference on Ubiquitin Signaling

Gene expression during inflammatory responses is controlled by NF- κ B transcription factors, IRF transcription factors, and each of the major MAP kinase subtypes (ERK1/2, JNK and p38) in innate immune cells. This symposium will focus on the role of ubiquitination in regulating NF- κ B and MAP kinase activation, and how NF- κ B-dependent transcription is coordinated with IRF activation and MAP kinase signaling to control innate immunity. Progress in the therapeutic targeting of NF- κ B and MAP kinase activation pathways for treatment of chronic inflammatory diseases and cancer will also be discussed.

Session Topics:

- NF- κ B Signaling in Cancer
 - NF- κ B Signaling in Immunity
 - Ubiquitination-Dependent Modulation of NF- κ B Signaling I & II (Joint)
 - Transcriptional Regulation in Inflammation
 - NLR Signaling to NF- κ B and IRF
 - MAP Kinase Signaling in Inflammation
 - Therapeutic Targeting of Inflammation
 - Meeting Wrap-Up: Outcomes and Future Directions
- Plus three workshops*



Submitting an abstract is a great way of participating in the conference through poster presentation and possible selection for a short talk.

Scholarship & Discounted Abstract Deadline: Nov 11, 2015

Abstract Deadline: Dec 14, 2015

Discounted Registration Deadline: Jan 13, 2016

For additional details, visit www.keystonesymposia.org/16X4.

KEYSTONE SYMPOSIA™
on Molecular and Cellular Biology
Accelerating Life Science Discovery

www.keystonesymposia.org/meetings | 1.800.253.0685 | 1.970.262.1230

a 501(c)(3) nonprofit educational organization

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

NF-kappaB and MAP Kinase Signaling in Inflammation (X4)

Scientific Organizers: Steven C. Ley, Zhijian 'James' Chen and Jenny P.Y. Ting

Sponsored by Genentech, Inc.

Ubiquitin Signaling (X3)

Scientific Organizers: Philip Cohen, Michael Rape and Titia K. Sixma

March 13-17, 2016 • Whistler Conference Centre • Whistler, British Columbia, Canada

Sponsored by Cell Research and Genentech, Inc.

Abstract & Scholarship Deadline: November 11, 2015 / Abstract Deadline: December 14, 2015 / Discounted Registration Deadline: January 13, 2016

SUNDAY, MARCH 13

Arrival and Registration

MONDAY, MARCH 14

Keynote Session (Joint)

***Steven C. Ley**, Francis Crick Institute, UK

***Michael Rape**, University of California, Berkeley, USA

Louis M. Staudt, NCI, National Institutes of Health, USA

Blocking NF-kappaB Activation as a Therapeutic Approach in Cancer

Ning Zheng, University of Washington, USA

Targeting Regulatory Enzymes in Ubiquitin Signaling

NF-kappaB Signaling in Cancer (X4)

***Louis M. Staudt**, NCI, National Institutes of Health, USA

Michael Karin, University of California, San Diego, USA

How NF-kappaB Orchestrates Inflammation

Daniel Krappmann, Helmholtz Zentrum München, Germany

CARMA1-BCL10-MALT1 Signaling in Adaptive Immunity and Lymphoma

Dinis P. Calado, Francis Crick Institute, UK

NF-kappaB Cooperating Events in Mature B Cell-Derived Malignancies

Regulation of the Ubiquitin System by Deubiquitylases and Phosphorylation (X3)

***Philip Cohen**, University of Dundee, UK

Titia K. Sixma, Netherlands Cancer Institute, Netherlands

Controlling the Isopeptidases: Regulation of Deubiquitination Reactions

Mads Gyrd-Hansen, University of Oxford, UK

CYLD limits Lys63- and Met1-linked Ubiquitin at Receptor Complexes to Regulate Innate Immune Signaling

Richard J. Youle, NINDS, National Institutes of Health, USA

Ubiquitin Signals on Mitochondria Promote Mitophagy via Autophagy Receptors

Workshop 1 (X4)

***Zhijian 'James' Chen**, University of Texas Southwestern Medical Center, USA

***Shao-Cong Sun**, University of Texas MD Anderson Cancer Center, USA

Jian Zhang, Ohio State University, USA

Anti-Fungal Innate Immune Response Mediated by C-Type Lectin Receptors Dectin-1 and Dectin-2 Is Regulated by E3 Ubiquitin Ligase Cbl-b

Claire Tocheny, National Institutes of Health, USA

Inflammatory Disease and Immunodeficiency due to Mutation in I kappaBalpha

Marc Riemann, Leibniz Institute on Aging - Fritz Lipmann Institute, Germany

Classical NF-kappaB Signaling via RelA and c-Rel Controls the Development of Medullary Thymic Epithelial Cells

Firaz Mohideen, Harvard Medical School, USA

Systematic Quantitative Proteomics in Response to TNFalpha Signaling Reveals Dynamic Alterations in the Architecture of the Cellular Phospho-proteome

Isabel Meininger, Helmholtz Zentrum München, Germany

Alternative Splicing of MALT1 is Critical for Signaling and Activation of CD4+ T Cells

Meri Kaustio, FIMM/University of Helsinki, Finland

Heterozygous Mutations in NFKB1 cause Immunodeficiency and Autoinflammation

Mélanie Juillard, University of Lausanne, Switzerland

CARMA1- and MyD88-Dependent Activation of Specific AP-1

Complexes is a Hallmark of ABC Diffuse Large B-cell Lymphomas

Workshop 1: Structural Biology and Biochemistry of Ubiquitylation (X3)

***Rachel Klevit**, University of Washington, USA

Maria Sunnerhagen, Linköping University, Sweden

Structure of a TRIM21 - UBE2E1 Complex Reveals the Specificity of E2, Ubiquitin and Substrate Recognition by TRIM E3 RINGs

Katrin E. Rittinger, Francis Crick Institute, UK

Structural and Functional Characterization of TRIM Family E3 Ligases

Catherine L. Day, University of Otago, New Zealand

Activation of Ubiquitin Transfer by Secondary Ubiquitin-RING Docking

Seth F. Harris, Genentech, Inc., USA

Structural Insights Into WD-Repeat 48 Activation of Ubiquitin Specific Protease 46

Aysegul Ozen, Genentech, Inc., USA

Engineering the USP7 Catalytic Domain for Activity

Hirotaaka Takahashi, Ehime University, Japan

Establishment of Deubiquitinating Enzyme Protein Array Based on Wheat Cell-Free System for a Novel Biochemical Tool

NF-kappaB Signaling in Immunity (X4)

***Manolis Pasparakis**, University of Cologne, Germany

The Interplay between NEMO, NF-kB and RIPK1 in Cell Death and Inflammation

Steve D. Gerondakis, Monash University, Australia

Is NF-kappaB1 a Tumor Suppressor?

Xiaoxia Li, Cleveland Clinic Foundation, USA

IRAK Regulation of NF-kappaB and MAP Kinase Activation

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

NF-kappaB and MAP Kinase Signaling in Inflammation (X4)

Scientific Organizers: Steven C. Ley, Zhijian 'James' Chen and Jenny P.Y. Ting

Sponsored by Genentech, Inc.

Ubiquitin Signaling (X3)

Scientific Organizers: Philip Cohen, Michael Rape and Titia K. Sixma

March 13-17, 2016 • Whistler Conference Centre • Whistler, British Columbia, Canada

Sponsored by Cell Research and Genentech, Inc.

Abstract & Scholarship Deadline: November 11, 2015 / Abstract Deadline: December 14, 2015 / Discounted Registration Deadline: January 13, 2016

***Ulrich K. Siebenlist**, NIAID, National Institutes of Health, USA
Short Talk: The B-Cell Tumor Promoter Bcl-3 Controls Inflammation-Associated Colon Tumorigenesis

Role of Ubiquitylation in Control of Autophagy (X3)

***Richard J. Youle**, NINDS, National Institutes of Health, USA

James H. Hurley, University of California, Berkeley, USA
Mechanistic and Structural Insights into Autophagy Initiation

J. Wade Harper, Harvard Medical School, USA
Ubiquitin Signaling for Mitophagy

Ivan Dikic, Goethe University Medical School, Germany
Ubiquitin Regulation of Selective Autophagy

Xavier Jacq, MISSION Therapeutics Ltd., UK
Short Talk: Inhibitors of USP30 as a Potential Treatment of Parkinson's disease and Other Mitochondrial Dysfunctions

Poster Session 1

TUESDAY, MARCH 15

Ubiquitination-Dependent Modulation of NF-kappaB Signaling (Joint)

***Vishva M. Dixit**, Genentech, USA

Zhijian 'James' Chen, University of Texas Southwestern Medical Center, USA
Regulation of Antiviral Innate Immunity by Ubiquitination and Phosphorylation

Pascal Meier, Institute of Cancer Research, UK
Tipping the Response to TNF in Favor of Death

Domagoj Vucic, Genentech, Inc., USA
Short Talk: Ubiquitin Ligase Activity of XIAP Regulates NOD2 Mediated Inflammatory Signaling

Michaela U. Gack, University of Chicago, USA
Regulation of Antiviral Signaling by TRIM E3 Ligases

David Komander, Walter and Eliza Hall Institute of Medical Research, Australia
Regulating Linear Ubiquitin Chains with OTULIN

Poster Session 2

Workshop 2: Physiology of Ubiquitin-Dependent Signaling (X3)

***Michael Rape**, University of California, Berkeley, USA

Pieter J. Eichhorn, National University Singapore, Singapore
USP15 Regulates SMURF2 Kinetics through C-Lobe Mediated Deubiquitination

Tohru Ishitani, Medical Institute of Bioregulation, Kyushu University, Japan
Ubiquitin-Mediated NF-kappaB Degradation Directs Dorsal-Ventral Patterning in Vertebrate Early Embryo

Brooke L. Latour, Radboudumc, Netherlands
De novo Loss of Function Mutations in the Deubiquitinating Enzyme USP9X cause a Female Specific Syndrome Characterized by Developmental Delay and Distinct Congenital Malformations

Eli Arama, Weizmann Institute of Science, Israel
Spatial Regulation of a CRL3 Complex by a Krebs Cycle Component Restricts Caspase Activation to the Vicinity of the Mitochondria during a Non-apoptotic Cellular Process in Drosophila

Steven H. Spoel, University of Edinburgh, UK
Transcriptional Activation by E3 and E4 Ubiquitin Ligases

Alexandra Greer, Genentech, Inc., USA
Ubiquitin 1 is Uniquely Required for Cell Cycle Entry and Proliferation Downstream of B-cell Receptor Signaling

Satpal Virdee, University of Dundee, UK
Engineered E2~Ub Conjugates as Probes of E3 ligase Transthiolation Activity

Transcriptional Regulation in Inflammation (X4)

***Michael Karin**, University of California, San Diego, USA

Alexander Hoffmann, University of California, Los Angeles, USA
Dynamic Control of NFkB

Irina A. Udalova, University of Oxford, UK
IRF5 Orchestrated Regulation of Inflammatory Programme in Macrophages

Neal Silverman, University of Massachusetts Medical School, USA
Short Talk: Regulation of Drosophila Innate Immune NF-kappaB Signaling by Amyloid Proteins

Stephen T. Smale, University of California, Los Angeles, USA
Global Analysis of Transcriptional Cascades Induced by Inflammatory Stimuli

Large Machines (X3)

***Brenda A. Schulman**, Max Planck Institute of Biochemistry, Germany

Andreas Martin, University of California, Berkeley, USA
26S Proteasome Assembly and Conformational Changes Control Substrate Deubiquitination by Rpn11

Nicolas H. Thomä, Friedrich Miescher Institute for Biomedical Research, Switzerland
Regulation of Cullin-RING-ligase activity by CSN

Raymond J. Deshaies, Amgen, Inc., USA
Regulation of CRL Assembly: The Adaptive Exchange Hypothesis

Jessica A. Gasser, Broad Institute of MIT and Harvard, USA
Short Talk: Genome-Wide CRISPR-Cas9 Screen Reveals Genes Required for the Effect of Lenalidomide on the CRL4-CRBN Ubiquitin Ligase

WEDNESDAY, MARCH 16

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

NF-kappaB and MAP Kinase Signaling in Inflammation (X4)

Scientific Organizers: Steven C. Ley, Zhijian 'James' Chen and Jenny P.Y. Ting

Sponsored by Genentech, Inc.

Ubiquitin Signaling (X3)

Scientific Organizers: Philip Cohen, Michael Rape and Titia K. Sixma

March 13-17, 2016 • Whistler Conference Centre • Whistler, British Columbia, Canada

Sponsored by Cell Research and Genentech, Inc.

Abstract & Scholarship Deadline: November 11, 2015 / Abstract Deadline: December 14, 2015 / Discounted Registration Deadline: January 13, 2016

NLR Signaling to NF-kappaB and IRF (X4)

***Rudi Beyaert**, Ghent University - VIB, Belgium

Jenny P.Y. Ting, University of North Carolina at Chapel Hill, USA
NLRs as Regulators of NFkappaB and MAPK Signaling

Feng Shao, National Institute of Biological Sciences, China
Pyroptosis in Anti-Bacterial Immunity: Sensing and Execution

Benedict Seddon, University College London, UK
Short Talk: TNF Activation of NF-kappaB is Essential for Development of Single Positive Thymocytes

Thirumala-Devi Kanneganti, St. Jude Children's Research Hospital, USA
Regulators of Inflammatory Responses

Vishva M. Dixit, Genentech, USA
RIPK3: Role of the Kinase Activity in Necroptosis

Ubiquitylation and Human Disease (X3)

***Ingrid E. Wertz**, Genentech, Inc., USA

Michael Rape, University of California, Berkeley, USA
Ubiquitin-Dependent Regulation of Craniofacial Development

Dario Alessi, University of Dundee, UK
Control of Blood Pressure

Noam Zelcer, Academic Medical Center, University of Amsterdam, Netherlands
Short Talk: USP2 Regulates the LDLR Pathway through Ubiquitylation of the E3-ubiquitin Ligase IDOL

Heran Darwin, New York University School of Medicine, USA
Proteasomal Regulation of Mycobacterium tuberculosis Pathogenesis

Jeffery S. Cox, University of California, Berkeley, USA
Discrimination of Pathogens from Non-Pathogens by Innate Immune Cells

Workshop 2 (X4)

***Steve D. Gerondakis**, Monash University, Australia

***Jenny P.Y. Ting**, University of North Carolina at Chapel Hill, USA

Simon Rousseau, McGill University, Canada
Differential Contributions of the TPL2-MKK1/MKK2-ERK1/ERK2 and NFkB Pathways to Oncogenic Transformation in Lymphoid Neoplasms

Nadine Mikuda, Max-Delbrück-Center for Molecular Medicine, MDC, Germany
The IkkappaB Kinase Complex is a Universal Regulator of mRNA Stability in Response to Stress

Marina Kolesnichenko, Max Delbrueck Center for Molecular Medicine, Germany
Senescence Associated NFkappaB Inflammatory Response is Driven by an mRNA Destabilization Mechanism

Benjamin E. Gewurz, Brigham and Women's Hospital, Harvard Medical School, USA
The NF-kB Genomic Landscape in CD40-Stimulated Primary Human B-cells

Anetta Svitorka Härtlova, Newcastle University, UK
Scavenger Receptor MSR-JNK Pathway Control Phenotypic Switch of Alternatively Activated Macrophages

Ricardo Antonia, University of North Carolina, USA
IKK Promotes AMPK Activity by Phosphorylating Threonine 172 in Response to IL-1beta

Ruaidhri Carmody, University of Glasgow, UK
Control of MAP Kinase and NF-kappaB Pathways by the Nuclear IkkappaB-like factor Bcl-3

Workshop 3: The Interplay between Ubiquitylation and Phosphorylation in Cell Regulation (X3)

***David Komander**, Walter and Eliza Hall Institute of Medical Research, Australia

Maria Isabel Acosta Lopez, University of Nice Sophia Antipolis, France
New Regulatory Mechanism and Cellular Function of the Tumor Suppressor HACE1

Niall Dillon, Medical Research Council, UK
Phosphorylation of the E2 Ubiquitin Conjugating Enzyme UBE2D3 Regulates Polycomb-Mediated Gene Priming in Pluripotent ES Cells

Jeffrey R. Johnson, University of California, San Francisco, USA
Ubiquitin Remnant Profiling Identifies a Novel Substrate of HIV-Mediated Ubiquitination and Degradation

R. Jeremy Nichols, Parkinson's Institute, USA
The LRRK2 Phosphorylation-Ubiquitination Cycle

Camillo Palmieri, Università Magna Grecia of Catanzaro, Italy
Regulation of IBtk-alpha Activity by mTOR-Mediated Phosphorylation

Nicolas Bidère, INSERM, France
The Paracaspase MALT1 Cleaves the LUBAC Subunit HOIL1 during Antigen Receptor Signaling

MAP Kinase Signaling in Inflammation (X4)

***Xiaoxia Li**, Cleveland Clinic Foundation, USA

Steven C. Ley, Francis Crick Institute, UK
Regulation of Inflammation by TPL-2 MAP 3-kinase

Ana Cuenda, Spanish National Biotechnology Centre, Spain
Regulation of Inflammation by p38gamma/delta

Mathieu JM Bertrand, VIB / Ghent University, Belgium
Short Talk: NF-kB-Independent Role of IKKa/IKKb in Preventing RIPK1 Kinase-Dependent Apoptotic and Necroptotic Cell Death during TNF Signaling

Roger J. Davis, HHMI/University of Massachusetts Medical School, USA
Role of JNK in Metabolic Stress Signaling

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

NF-kappaB and MAP Kinase Signaling in Inflammation (X4)

Scientific Organizers: Steven C. Ley, Zhijian 'James' Chen and Jenny P.Y. Ting

Sponsored by Genentech, Inc.

Ubiquitin Signaling (X3)

Scientific Organizers: Philip Cohen, Michael Rape and Titia K. Sixma

March 13-17, 2016 • Whistler Conference Centre • Whistler, British Columbia, Canada

Sponsored by Cell Research and Genentech, Inc.

Abstract & Scholarship Deadline: November 11, 2015 / Abstract Deadline: December 14, 2015 / Discounted Registration Deadline: January 13, 2016

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

NF-kappaB and MAP Kinase Signaling in Inflammation (X4)

Scientific Organizers: Steven C. Ley, Zhijian 'James' Chen and Jenny P.Y. Ting

Sponsored by Genentech, Inc.

Ubiquitin Signaling (X3)

Scientific Organizers: Philip Cohen, Michael Rape and Titia K. Sixma

March 13-17, 2016 • Whistler Conference Centre • Whistler, British Columbia, Canada

Sponsored by Cell Research and Genentech, Inc.

Abstract & Scholarship Deadline: November 11, 2015 / Abstract Deadline: December 14, 2015 / Discounted Registration Deadline: January 13, 2016

Structural Analysis of E3 Ligases and DUBs (X3)

***Titia K. Sixma**, Netherlands Cancer Institute, Netherlands

Rachel Kleivit, University of Washington, USA

Mechanistic Strategies of RING-Between-RING (RBR) E3 Ligases

Bernhard Clemens Lechtenberg, Sanford Burnham Prebys Medical Discovery Institute, USA

Short Talk: Structure of the HOIP-RBR/E2~ubiquitin Transfer Complex Reveals a Universal Mechanism for RBR E3 Ubiquitin Ligases

Brenda A. Schulman, Max Planck Institute of Biochemistry, Germany

Cullin-RING E3 Ligation Mechanisms

Christopher D. Lima, Memorial Sloan Kettering Cancer Center, USA

E3 Ligases: Activities and Specificity

Poster Session 3

THURSDAY, MARCH 17

Therapeutic Targeting of Inflammation (X4)

***Daniel Krappmann**, Helmholtz Zentrum München, Germany

Stefan Knapp, University of Oxford, UK

Targeting Bromodomains in Inflammation

Vanessa C. Taylor, Rigel Inc., USA

R191, A Small Molecule IRAK1/4 Kinase Inhibitor for the Treatment of Autoimmune and Inflammatory Diseases

Eric P. Hanson, National Institutes of Health, USA

Short Talk: Recruitment of A20 by the C-Terminal Domain of NEMO Suppresses NF-kappaB Activation and Autoinflammatory Disease

Vikram R. Rao, Pfizer, USA

The Role of IRAK4 in NFkB and MAPK Signaling: Implications for Drug Development

Small Molecules and Therapeutics (X3)

***Raymond J. Deshaies**, Amgen, Inc., USA

Zhihao Zhuang, University of Delaware, USA

Targeting Deubiquitinase in DNA Damage Response for Anticancer Therapy

Alessio Ciulli, University of Dundee, College of Life Sciences, UK

Short Talk: Small Molecules for the VHL Cul2 E3 Ligase: VHL-HIF Inhibitors and Proteolysis Targeting Chimeras (PROTACs)

Georg Petzold, Friedrich Miescher Institute for Biomedical Research, Switzerland

Short Talk: Structural Basis of Lenalidomide-induced CK1alpha Degradation by the CRL4-CRBN Ubiquitin Ligase

Ingrid E. Wertz, Genentech, Inc., USA

Phosphorylation and Linear Ubiquitin Direct A20 Inhibition of Inflammation

Frank Sicheri, Lunenfeld-Tanenbaum Research Institute, Canada

The Structural basis for Poly-Ubiquitin Chain Cleavage and Regulation: Lessons Learned from BRCC36

Ubiquitin-Dependent Modulation of NF-kappaB Signaling II (Joint)

***Ivan Dikic**, Goethe University Medical School, Germany

Shao-Cong Sun, University of Texas MD Anderson Cancer Center, USA

Epigenetic Regulation of NF-kB Function and Inflammation by Ubiquitination

Shigeki Miyamoto, University of Wisconsin, Madison, USA

Investigation of NF-kappaB Signaling Induced by Genotoxic Agents and Potentially Novel Activators

Rudi Beyaert, Ghent University - VIB, Belgium

The Dual Faces of Paracaspase MALT1 in Inflammation and Immunity

Philip Cohen, University of Dundee, UK

Re-Writing the Interleukin-1 Signaling Network

Meeting Wrap-Up: Outcomes and Future Directions (Joint)

Philip Cohen, University of Dundee, UK

FRIDAY, MARCH 18

Departure