



Join Keystone Symposia
for the 2016 conference on:

Immunometabolism in Immune Function and Inflammatory Disease

February 21–25, 2016

Fairmont Banff Springs | Banff, Alberta | Canada

Scientific Organizers:

Jeffrey C. Rathmell, Jonathan D. Powell and Amira Klip

Joint with the conference on **New Frontiers in Understanding Tumor Metabolism**

This meeting addresses how immune cells and functions rely upon and are controlled by specific metabolic pathways and nutrient availability and will bridge systemic and cellular metabolic regulation of immune function. Metabolic reprogramming in the activation of adaptive and innate immune cells and the regulation and role of specific metabolic programs in distinct lymphocyte or macrophage subsets will be addressed. The conference will also present new findings on signaling pathways and the influence of immune cell metabolism on anti-tumor immunity, autoimmunity and metabolic diseases. It is anticipated this meeting will be of broad interest to the immunology and metabolic communities. The focus of this meeting on how factors that influence immune cell metabolism impact a variety of inflammatory disorders will provide new fundamental insight into normal immune function as well as opportunities to treat immunological and metabolic diseases.

Session Topics:

- Metabolic Basis for Cell Proliferation and Regulation (Joint)
- Metabolic Regulation of Macrophage Function
- Effector and Regulatory T Cell Metabolism and Function
- The AMPK/mTOR Axis in Metabolism, Inflammation and Immunity
- Metabolism of Inflammation and Innate Immune Responses
- Cell-Cell Communication in Immunometabolism
- Metabolic Reprogramming in Lymphocyte Cell Activation and Memory
- Tumor Immunology and Metabolic Immunotherapy



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: Oct 22, 2015

Abstract Deadline: Nov 23, 2015

Discounted Registration Deadline: Dec 21, 2015

For additional details, visit www.keystonesymposia.org/16Q8.

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

Immunometabolism in Immune Function and Inflammatory Disease (Q8)

Scientific Organizers: Jeffrey C. Rathmell, Jonathan D. Powell and Amira Klip

Sponsored by AbbVie Inc., Astellas Pharma Inc. and Boehringer Ingelheim Pharmaceuticals, Inc.

New Frontiers in Understanding Tumor Metabolism (Q7)

Scientific Organizers: Chi Van Dang, Katharine Yen and Navdeep S. Chandel

February 21-25, 2016 • Fairmont Banff Springs • Banff, Alberta, Canada

Sponsored by Bayer HealthCare Pharmaceuticals, Pfizer Inc. and Takeda Pharmaceutical Company Limited

Abstract & Scholarship Deadline: October 22, 2015 / Abstract Deadline: November 23, 2015 / Discounted Registration Deadline: December 21, 2015

SUNDAY, FEBRUARY 21

Arrival and Registration

MONDAY, FEBRUARY 22

Welcome and Keynote Session (Joint)

Luke A. J. O'Neill, Trinity College Dublin, Ireland
Metabolic Reprogramming as a Driver of Macrophage-Mediated Inflammation

Joan S. Brugge, Harvard Medical School, USA
Talk Title to be Announced

Metabolic Basis for Cell Proliferation and Regulation (Joint)

Michael Karin, University of California, San Diego, USA
Signaling in Inflammatory Pathways

Tak W. Mak, Campbell Family Institute for Breast Cancer Research at Princess Margaret Hospital, University Health Network, Canada
IDH Mutations in Human Cancers

Lewis C. Cantley, Weill Cornell Medical College, USA
PI3K and Cancer Metabolism

Short Talk(s) Chosen from Abstracts

Workshop 1 (Q8)

Short Talks Chosen from Abstracts

Workshop 1 (Q7)

Short Talks Chosen from Abstracts

Metabolic Regulation of Macrophage Function (Q8)

Ajay Chawla, University of California, San Francisco, USA
Macrophage Polarization and Systemic Metabolism

Anthony W. Ferrante, Columbia University, USA
Metabolic Diseases and Macrophage Populations

Amira Klip, Hospital for Sick Children, Canada
Crosstalk between Muscle and Macrophages

Short Talk Chosen from Abstracts

Fundamentals of Cell Metabolism: Metabolic Wiring and in vivo Studies (Q7)

Joshua D. Rabinowitz, Princeton University, USA
Quantitative Analysis of Metabolic Activity

Christian M. Metallo, University of California, San Diego, USA
Understanding and Exploiting Metabolic Flexibility in Human Cells

Ralph J. DeBerardinis, University of Texas Southwestern Medical Center, USA
In vivo Analysis of Human Cancer

Teresa W. M. Fan, University of Kentucky Markey Cancer Center, USA

In vivo Metabolomics of Human Lung Cancer

Short Talk Chosen from Abstracts

Poster Session 1

TUESDAY, FEBRUARY 23

Effector and Regulatory T Cell Metabolism and Function (Q8)

Jeffrey C. Rathmell, Duke University, USA
Glucose Uptake and Fueling T Cell Immunity

Hongbo Chi, St. Jude Children's Research Hospital, USA
Interplay between Immune Signaling and Cell Metabolism in Effector and Treg Cells

Steven J. Bensinger, University of California, Los Angeles, USA
Transcriptional Programming of Lipid Metabolism in Immune Cells

Laurence A. Turka, Massachusetts General Hospital, USA
Metabolic Control of Treg Function

Short Talk(s) Chosen from Abstracts

Metabolic Adaptation (Q7)

M. Celeste Simon, HHMI/University of Pennsylvania, USA
Hypoxia, Metabolism, and Renal Cancer

Peter F. Carmeliet, University of Leuven, VIB, Belgium
Angiogenesis Revisited: Role and (Therapeutic) Implications of Endothelial Metabolism

Navdeep S. Chandel, Northwestern University, USA
Mitochondrial Function in Tumor Metabolism

Matthew G. Vander Heiden, Massachusetts Institute of Technology, USA

Insights from Metabolism Studies in Mouse Cancer Models

Short Talk(s) Chosen from Abstracts

The AMPK/mTOR Axis in Metabolism, Inflammation and Immunity (Q8)

Russell G. Jones, McGill University, Canada
LKB1: Links Between Inflammation and Tumor Development

Jonathan D. Powell, Johns Hopkins University School of Medicine, USA

The mTOR Pathway in T Cell Metabolism and Subsets

Tiffany Horng, Harvard School of Public Health, USA
Control of Macrophage Activation by the mTOR Pathway

Short Talk Chosen from Abstracts

Oncogenes and Tumor Suppressors and Metabolism (Q7)

Robert N. Eisenman, Fred Hutchinson Cancer Research Center, USA
Role of MYC & MondoA in Tumor Metabolism

Mariia Yuneva, National Institute for Medical Research, UK
Metabolic Lessons from in vivo Tumor Models

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Immunometabolism in Immune Function and Inflammatory Disease (Q8)

Scientific Organizers: Jeffrey C. Rathmell, Jonathan D. Powell and Amira Klip

Sponsored by AbbVie Inc., Astellas Pharma Inc. and Boehringer Ingelheim Pharmaceuticals, Inc.

New Frontiers in Understanding Tumor Metabolism (Q7)

Scientific Organizers: Chi Van Dang, Katharine Yen and Navdeep S. Chandel

February 21-25, 2016 • Fairmont Banff Springs • Banff, Alberta, Canada

Sponsored by Bayer HealthCare Pharmaceuticals, Pfizer Inc. and Takeda Pharmaceutical Company Limited

Abstract & Scholarship Deadline: October 22, 2015 / Abstract Deadline: November 23, 2015 / Discounted Registration Deadline: December 21, 2015

Karen H. Vousden, Beatson Institute for Cancer Research, UK
P53, Homeostasis and Tumor Metabolism

Short Talk Chosen from Abstracts

Poster Session 2

WEDNESDAY, FEBRUARY 24

Metabolism of Inflammation and Innate Immune Responses (Q8)

Edward J. Pearce, Washington University in St. Louis School of Medicine, USA

Metabolism of Dendritic Cell Activation

Helen C. Su, NIAID, National Institutes of Health, USA
Proteolysis and Metabolism in Human Immunodeficiency

Melinda A. Beck, University of North Carolina, USA
Viral Infection and Metabolism

Richard M. Siegel, NIAMS, National Institutes of Health, USA
Fueling the Fire: Mitochondria and Metabolism in Autoinflammatory Disease

Short Talk(s) Chosen from Abstracts

Signaling and Metabolic Enzymes (Q7)

Nika N. Danial, Dana-Farber Cancer Institute, USA
Metabolic Aberrations in Lymphoma

David M. Sabatini, Whitehead Institute for Biomedical Research, USA
Nutrient Sensing and Tumor Metabolism

Brendan D. Manning, Harvard School of Public Health, USA
Linking Growth Signaling to Anabolic Metabolism

Kathryn E. Wellen, University of Pennsylvania, USA
Metabolism and Tumor Epigenetics

Short Talk(s) Chosen from Abstracts

Workshop 2 (Q8)

Short Talks Chosen from Abstracts

Workshop 2 (Q7)

Short Talks Chosen from Abstracts

Cell-Cell Communication in Immunometabolism (Q8)

Bente Klarlund Pedersen, Rigshospitalet, Denmark
Exercise-Induced Immunomodulation: Focus on Tumor Growth

Benedicte Chazaud, Université Claude Bernard Lyon, France
Monocytes and Macrophages as Drivers of Myogenesis

Vishwa Deep Dixit, Yale University, USA
Obesity and Adipose-Associated Inflammation

Short Talk Chosen from Abstracts

PI3K/AMPK (Q7)

Reuben J. Shaw, The Salk Institute for Biological Studies, USA
Role of AMPK in Tumor Metabolism

Nissim Hay, University of Illinois at Chicago, USA
Role of Hexokinase in Tumor Metabolism

Heather R. Christofk, University of California, Los Angeles, USA
Tumor Metabolism Lessons from Viruses

Short Talk Chosen from Abstracts

Poster Session 3

THURSDAY, FEBRUARY 25

Metabolic Reprogramming in Lymphocyte Cell Activation and Memory (Q8)

Erika L. Pearce, Max Planck Institute of Immunobiology and Epigenetics, Germany

Metabolic Pathways in Effector and Memory T Cells

Christoph Hess, University Hospital Basel, Switzerland
Metabolic Reprogramming in Immunodeficiency and T Cell Memory

Dhaval Kumar D. Patel, Novartis Institutes for BioMedical Research, Switzerland
Metabolic Reprogramming in Inflammatory Disease

Gary Glick, University of Michigan, USA
Mitochondrial Function in Immunity; Mechanisms and Therapeutic Potential

Short Talk(s) Chosen from Abstracts

Isocitrate Dehydrogenase (Q7)

Katharine Yen, Agios Pharmaceuticals, USA
New Developments in Targeting IDH Mutations

Craig B. Thompson, Memorial Sloan-Kettering Cancer Center, USA
Talk Title to be Announced

Nabeel Bardeesy, Massachusetts General Hospital, USA
Altered Metabolism in Pancreatic Cancer Models

Short Talk(s) Chosen from Abstracts

Tumor Immunology and Metabolic Immunotherapy (Q8)

David H. Munn, Georgia Regents University, USA
Molecular Mechanisms of Immune Suppression and Tolerance in Tumors

Nicholas P. Restifo, NCI, National Institutes of Health, USA
Metabolism and Terminal Differentiation in Anti-Tumor Immunity

Susan M. Kaech, Yale University School of Medicine, USA
T Cell Memory and Metabolism in Tumor Immunity

Targeting Metabolism (Q7)

Chi Van Dang, University of Pennsylvania, USA
A time for MYC, Metabolism, and Therapy

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Immunometabolism in Immune Function and Inflammatory Disease (Q8)

Scientific Organizers: Jeffrey C. Rathmell, Jonathan D. Powell and Amira Klip

Sponsored by AbbVie Inc., Astellas Pharma Inc. and Boehringer Ingelheim Pharmaceuticals, Inc.

New Frontiers in Understanding Tumor Metabolism (Q7)

Scientific Organizers: Chi Van Dang, Katharine Yen and Navdeep S. Chandel

February 21-25, 2016 • Fairmont Banff Springs • Banff, Alberta, Canada

Sponsored by Bayer HealthCare Pharmaceuticals, Pfizer Inc. and Takeda Pharmaceutical Company Limited

Abstract & Scholarship Deadline: October 22, 2015 / Abstract Deadline: November 23, 2015 / Discounted Registration Deadline: December 21, 2015

Susan Demo, Calithera Biosciences, USA

Targeting Amino Acid Metabolism for Cancer Treatment

Michael Pollak[†], McGill University and Lady Davis Research Institute,
Canada

Talk Title to be Announced

Alec Kimmelman, Dana-Farber Cancer Institute, USA

Identifying Metabolic Dependencies in Pancreatic Cancer

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)
(Q8)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)
(Q7)

FRIDAY, FEBRUARY 26

Departure