

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Tissue Immunity (A6)

January 26-29, 2020 • Embassy Suites by Hilton Boulder • Boulder, CO, USA

Scientific Organizers: Bana Jabri, Daniel Mucida and Ramnik Xavier

Sponsored by AbbVie Inc., Akebia Therapeutics, BioLegend, Inc., Merck & Co., Inc. and Pfizer Inc.

Discounted Abstract & Scholarship Deadline: September 26, 2019 / Abstract Deadline: October 24, 2019 / Discounted Registration Deadline: November 21, 2019

SUNDAY, JANUARY 26

Arrival and Registration

MONDAY, JANUARY 27

Welcome and Keynote Address

***Bana Jabri**, University of Chicago, USA

Richard M. Locksley, HHMI/University of California, San Francisco, USA

Type 2 Immunity and Tissue Resilience

Tissue-Resident T Cells

***Daniel Mucida**, Rockefeller University, USA

David B. Masopust, University of Minnesota, USA

Functions of Tissue Resident T Cells

Laura K. Mackay, University of Melbourne, Australia

Differential Targeting of IFN γ - and IL-17-Producing Tissue-Resident Memory CD8 $^+$ T Cells

Bana Jabri, University of Chicago, USA

Tissue Resident T Cells in Health and Disease

Ivaylo I. Ivanov, Columbia University, USA

Short Talk: Dissecting the Differential Roles of ILC3 and T Cells in Mucosal Immunity

Toufic Mayassi, University of Chicago, USA

Short Talk: Insights into Tissue-Resident Immunity and Intraepithelial gamma delta Biology from Celiac Disease

Workshop 1: Immune Responses across Tissues

***Daria Esterházy**, University of Chicago, USA

***Xingbin Ai**, Brigham & Women's Hospital, USA

Nicholas Bessman, Weill Cornell Medicine, USA

Dendritic Cell-Derived Heparin Sequesters Iron from the Microbiota to Promote Mucosal Healing

Quynh Nguyen, University of California, San Diego, USA

Transcriptional Programming of Intestinal CD4 $^+$ Tissue-Resident Memory T Cells

Susan Christo, University of Melbourne, Australia

The Local Microenvironment Drives the Identity of Tissue-Resident Memory T Cells

Jack McGinty, University of Washington, USA

Tuft Cell-Derived Leukotrienes Drive Rapid Activation of Anti-Helminth Immunity in the Small Intestine

Zachary Earley, University of Chicago, USA

GATA4 Controls Regionalization of Intestinal Immunity Through Restricting Bacterial Colonization

Angelina Bilate, Rockefeller University, USA

Instructive Role of the T Cell Receptor on Lymphocyte Plasticity at the Intestinal Border

Madelene W. Dahlgren, University of California, San Francisco, USA

Adventitial Stromal Cells Define Group 2 Innate Lymphoid Cell Tissue Niches

Emily E. Thornton, University of Oxford, UK

Commensal-Reactive, IL-23 Responsive T Cells Promote Gut Barrier Immunity

Innate Memory in Tissues

***Fiona M. Powrie**, University of Oxford, UK

Mihai G. Netea, Radboud University, Netherlands

Trained Immunity: A Memory for Innate Host Defense

Marco Colonna, Washington University School of Medicine, USA

Tissue Imprinting of Innate-Like-Lymphocytes

Shruti Naik, New York University, USA

Inflammatory Memory in Epithelial Stem Cells

Michael G. Constantinides, NIAID, National Institutes of Health, USA

Short Talk: MAIT Cells are Imprinted by the Microbiota in Early Life and Promote Tissue Repair

Judith Agudo, Dana-Farber Cancer Institute, USA

Short Talk: Quiescent Tissue-Resident Stem Cells Evade Immune Surveillance

Poster Session 1

TUESDAY, JANUARY 28

Neuronal Control of Tissue Immunity

***Bana Jabri**, University of Chicago, USA

Ramnik Xavier, Massachusetts General Hospital, USA

Microbial Metabolites in Health and Disease

Gloria Choi, Massachusetts Institute of Technology, USA

Neural Circuits and the Immune System

Daniel Mucida, Rockefeller University, USA

Adrenergic Signaling in Muscularis Macrophages Limits Neuronal Death Following Enteric Infection

Federica Sallusto, Università della Svizzera Italiana & ETH Zurich, Switzerland

T Cell Responses in Patients with Narcolepsy

William Khoury-Hanold, Yale University, USA

Short Talk: Bitter Taste Sensing in the Gastrointestinal Tract Controls Allergic Sensitization

Lorena Rioli Blanco, Genentech, Inc., USA

Short Talk: Nodose Sensory Neurons Require TMC3 to Restrain Lung Damage

Mucosal B Cell Responses

***Federica Sallusto**, Università della Svizzera Italiana & ETH Zurich, Switzerland

Albert S. Bendelac, University of Chicago, USA

Role of Polyreactivity in Intestinal Immunity

Matteo Iannacone, Fondazione Centro San Raffaele, Italy

Spatiotemporal Dynamics and Genomic Landscape of CD8 $^+$ T Cells Undergoing Intrahepatic Priming

Ludvig M. Sollid, University of Oslo, Norway

Antigen-Specific B Cell Responses Implicated in Celiac Disease

Valerie Abadie, University of Chicago, USA

Short Talk: Contribution of the Humoral Response to the Pathogenesis of Celiac Disease

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Priyadharshini Devarajan, University of Massachusetts Medical School, USA
Short Talk: Generation of Tissue-Restricted CD4 Effectors, TFH and ThCTL, Requires Signals from Antigen in the Tissue Site and from Infection at an Effector Checkpoint

Poster Session 2

WEDNESDAY, JANUARY 29

Molecular and Metabolic Control of Inflammation

***Ramnik Xavier**, Massachusetts General Hospital, USA

Daria Esterházy, University of Chicago, USA
Compartmentalization of Intestinal Immune Responses

Fiona M. Powrie, University of Oxford, UK
Talk Title to be Announced

Luke A. J. O'Neill, Trinity Biomedical Sciences Institute, Ireland
Krebs Cycle Reborn in Macrophages

Matthew G. Vander Heiden, Massachusetts Institute of Technology, USA
Influence of Nutrient Availability on Tissue Metabolism

Graham Barlow, Stanford University, USA
Short Talk: Hierarchical Tissue Factors Orchestrate Autoimmune Insulinitis in Human Type 1 Diabetes

Jacqueline W. Mays, NIDCR, National Institutes of Health, USA
Short Talk: Tissue-Resident Memory T Cells May Drive the Pathogenesis of Exocrine Gland Chronic Graft-Versus-Host Disease

Eric Brown, Broad Institute of MIT and Harvard, USA
Short Talk: Intestinal Microbiome Sphingolipid Signaling Mediates Inflammation and Mucosal Immunity

Workshop 2: New Approaches to Target Tissue Immunity in Autoimmunity and Cancer

***Shruti Naik**, New York University, USA

***Ricardo R. Cibotti**, NIAMS, National Institutes of Health, USA

Rafael Sanguinetti Czepielewski, Washington University School of Medicine, USA
Mesenteric Tertiary Lymphoid Organs Block Leukocyte Migration from the Intestine in a Crohn's Disease-Like Mouse Model

Michel Enamorado, NIAID, National Institutes of Health, USA
Immunity - or Lack of - to Staphylococcus aureus

Yisu Gu, University of Oxford, UK
Spatial Compartmentalisation of Pathobiont-Reactive T Cell Differentiation in Gut Tissue

Duncan McKenzie, Francis Crick Institute, UK
A Two-Step Molecular Mechanism for Immune Discrimination of Tissue Dysregulation from Normality

Martina Damo, Yale University, USA
Tissue Type Determines the Outcome of Peripheral T Cell Tolerance Induction

Bernardo S. Reis, Rockefeller University, USA
Role of Intraepithelial gd Lymphocytes during Colon Cancer Development and Progression

Zuri Sullivan, Yale University, USA
Gammadelta T-Cells Regulate Intestinal Epithelial Response to Nutrient Sensing

Shiqun Zhang, University of Pittsburgh, USA
MrgprD-Expressing Neurons Maintain Cutaneous Mast Cell Homeostasis

Microbiota and Tissue Immunity

***Ivaylo I. Ivanov**, Columbia University, USA

Dan R. Littman, HHMI/New York University School of Medicine, USA
Gut Microbiota and Systemic Immunity

Jun R. Huh, Harvard Medical School, USA
Immune Modulatory Roles of Bile Acid Metabolites

Closing Keynote Address

Yasmine Belkaid, NIAID, National Institutes of Health, USA
Innate Resident T Cells in Skin Immunity

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

THURSDAY, JANUARY 30

Departure