

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

B Cells: Mechanisms in Immunity and Autoimmunity (E4)

June 17-21, 2018 • Maritim Hotel & International Congress Center Dresden • Dresden, Germany

Scientific Organizers: Lars Nitschke, Michael Reth, Roberta Pelanda and David M. Tarlinton

Sponsored by Genentech, Inc., MSD, and Roche

Abstract & Scholarship Deadline: February 14, 2018 / Abstract Deadline: March 14, 2018 / Discounted Registration Deadline: April 17, 2018

SUNDAY, JUNE 17

Arrival and Registration

MONDAY, JUNE 18

Welcome and Keynote Address

- ***Roberta Pelanda**, University of Colorado Denver, USA
- Mark J. Shlomchik**, University of Pittsburgh School of Medicine, USA
Germinal Centers and Memory B Cells

B Cell Differentiation

- ***Lill Martensson**, University of Gothenburg, Sweden
- ***Anja Erika Hauser**, Charité-Universitätsmedizin, Germany
- Martin Turner**, Babraham Institute, UK
Regulation of B Cell Development by RNA Binding Proteins
- Meinrad Busslinger**, Research Institute of Molecular Pathology, Austria
Suppression of Autoimmunity by the Transcription Factor Ikaros
- Marion Pepper**, University of Washington, USA
Memory B Cells in Malaria Infections
- Anselm Enders**, John Curtin School of Medical Research, Australia
Short Talk: Deregulation of PAX5 Causes Abnormal B Cell Lymphopoiesis and Spontaneous Precursor B Cell Lymphoma Development in Mice
- Klaus D. Fischer**, Medical Faculty Magdeburg, Germany
Short Talk: The Opposing Forces of Shear Flow and Sphingosine-1-Phosphate Control Marginal Zone B Cell Shuttling

Workshop 1: Signals Driving Development of Conventional and Innate B Cells

- ***Joao Pereira**, Yale University School of Medicine, USA
- ***Nicole Baumgarth**, University of California, Davis, USA
- Duane R. Wesemann**, Harvard Medical School, USA
Stochastic B Cell Diversification in Germinal Centers
- Meihong Deng**, University of Pittsburgh, USA
TLR9 Regulates Host Defense via Modulation of Peritoneal B1 Cell Pathobiology during Intra-Abdominal Sepsis
- Stijn Vanhee**, Lund University, Sweden
B Cell Positive Selection Is Developmentally Regulated during Ontogeny by the Heterochronic Protein Lin28b
- Wenxia Song**, University of Maryland, USA
BCR-Antigen Interaction Causes Wounding and Repair of the B Cell Membrane, Promoting BCR Activation
- Sandra Eva Zehentmeier**, Yale School of Medicine, USA
Get Your Motor Runnin': Control of B Cell Receptor Signaling through Gai Protein-Mediated Chemoattractant Sensing
- Carolyn Ulbricht**, Charité Universitätsmedizin Berlin, Germany
Tracking B Cell Receptor Signaling during Germinal Center Reactions in vivo
- Daniela Giordano**, University of Washington, USA
Expression of and Requirement for B Cell Activating Factor (BAFF) during West Nile Virus (WNV) and Salmonella Infection

Simar Pal Singh, Erasmus MC, Netherlands
T Cells Shape the Immunoglobulin Repertoire of Murine Chronic Lymphocytic Leukemia while B Cell Receptor Signaling Strength Controls Age of Onset

Innate Functions of B Cells

- ***Michelle A. Linterman**, Babraham Institute, UK
- ***Randall S. Davis**, University of Alabama, Birmingham, USA
- Nicole Baumgarth**, University of California, Davis, USA
Regulation of B-1 Cell Functions
- Simon Fillatreau**, Institut Necker Enfants Malades, France
Regulatory Roles of B Cells in Autoimmune and Infectious Diseases
- Claudia Mauri**, University College London, UK
How Regulatory B Cells Bridge the Innate and the Adaptive Immune Response
- Yoontae Lee**, Pohang University of Science and Technology, South Korea
Short Talk: Transcriptional Regulation of B-1 and B-2 Cell Fates by Capicua
- Marc Seifert**, University of Duisburg-Essen, Germany
Short Talk: Molecular and Functional Characterization of Human B-1a Cells

Poster Session 1

TUESDAY, JUNE 19

Checkpoint Control of B Cell Signaling

- ***Raul M. Torres**, University of Colorado School of Medicine, USA
- ***Victor L.J. Tybulewicz**, Francis Crick Institute, UK
- Julia Jellusova**, University of Freiburg, Germany
The Role of the B Cell Receptor in Regulating Metabolic Fitness
- Michael Reth**, Albert-Ludwigs University Freiburg, Germany
The Nanoscale Organization of the BCR and the B Cell Membrane
- Jürgen Wienands**, Georg August University of Goettingen, Germany
The Scaffolding Protein CIN85 Controls BCR Responsiveness and Subsequent Antibody Responses in Humans
- Markus Müschen**, Beckman Research Institute, USA
Autoimmunity Checkpoints in B Cell Malignancies
- Kerstin Nündel**, University of Massachusetts Medical School, USA
Short Talk: Divergent Roles for TLR7 and TLR9 in Modulating the NFkB Pathway in B Cells
- Susana Minguet**, Biology III and BIOS, Germany
Short Talk: Caveolin-1-Dependent Nanoscale Organization of the BCR Regulates B Cell Tolerance

Poster Session 2

Workshop 2: Germinal Centers and Humoral Immune Response

- ***Kai-Michael Toellner**, University of Birmingham Medical School, UK
- ***Hedda Wardemann**, German Cancer Research Center, Germany
- Michelle A. Mintz**, University of California, San Francisco, USA
The HVEM-BTLA Interaction Restrains the Germinal Center Response

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Floriana Cremasco, Università Vita Salute San Raffaele, Italy
Autophagy-Independent Control of the Germinal Center Reaction by the Adapter SQSTM1/p62

Michelle A. Linterman, Babraham Institute, UK
Type I Interferon Induces CXCL13-Driven B Cell Recruitment to the Lung to Enable Tertiary Germinal Centre Formation

Imogen Moran, Garvan Institute of Medical Research, Australia
Where and How Memory Cells Are Reactivated in the Secondary Antibody Response in the Lymph Node

Dessi Malinova, Francis Crick Institute, UK
Genome-Wide CRISPR/Cas9 Screens Identify Components of B Cell Antigen Internalization

Yuezhou Chen, Brigham and Women's Hospital, USA
Primary Ig Repertoire Control as a Demand-Driven Process

Kim Good-Jacobson, Monash University, Australia
Histone-Modifying Complexes Differentially Regulate B Cell Fate Decisions during Acute and Chronic Infection

Ian A. Cockburn, Australian National University, Australia
New Approaches to Track B Cells Specific for a Major Malaria Vaccine Candidate

Diversification of Antibodies and Humoral Immune Response

***Gabriel D. Victora**, Rockefeller University, USA

***Berit Jungnickel**, Friedrich Schiller University Jena, Germany

Javier M. Di Noia, Institut de Recherches Cliniques de Montreal, Canada
Structure-Function of AID Uncovers a Licensing Step for Antibody Gene Diversification

Tomohiro Kurosaki, WPI Immunology Frontier Research Center, Osaka University, Japan
Fate Decision of Germinal Center B Cells

Daisuke Kitamura, Tokyo University of Science, Japan
Regulatory Mechanisms for Memory B Cell Development and Function

Robert Abbott, La Jolla Institute for Allergy and Immunology, USA
Short Talk: Precursor Frequency and Affinity Determine B Cell Competitive Fitness in Germinal Centers, Tested with Germline-Targeting HIV Vaccine Immunogens

Berit Jungnickel, Friedrich Schiller University Jena, Germany
Short Talk: Regulation of AID Activity and DNA Repair during Somatic Hypermutation

WEDNESDAY, JUNE 20

Germinal Centers and B Cell Memory Formation

***Marion Pepper**, University of Washington, USA

***Oliver Bannard**, University of Oxford, UK

Gabriel D. Victora, Rockefeller University, USA
Clonal and Cellular Dynamics of Germinal Center Selection

Carola G. Vinuesa, Australian National University, Australia
T Follicular Helper Cells in the Germinal Center

David M. Tarlinton, Monash University, Australia
Germinal Center-Derived Plasma Cells

Shannon J. Turley, Genentech, Inc., USA

Fibroblastic Reticular Cells and the Maintenance of B Cell Follicles

Ziv Shulman, Weizmann Institute, Israel

Short Talk: Germinal Centers: Arrivals, Departures and the T Cell Border Control

Hedda Wardemann, German Cancer Research Center, Germany
Short Talk: The Role of Clonal Selection Versus Affinity Maturation in the Human B Cell Response to a Repetitive Malaria Parasite Antigen

B Cell Metabolism and Intersection with the Microbiome

***Ziv Shulman**, Weizmann Institute, Israel

***Mark J. Shlomchik**, University of Pittsburgh School of Medicine, USA

Andreas Radbruch, Deutsches Rheuma-Forschungszentrum, Germany
Regulation of Intestinal TGF β and IgA by a Distinct Microbiota

Joseph E. Craft, Yale University, USA
The Role of Tfh Cells in B-Cell Selection

Nicola L. Harris, Monash University, Australia
B Cell-Stomach Cell Interactions Drive Lymphoid Remodeling and Are Required for Efficient Adaptive Immune Responses against Intestinal Helminths

Lieselotte S.M. Kreuk, University of California, Berkeley, USA
Short Talk: B Cell Receptor and Toll-Like Receptor Signaling Integrate to Control B1-Derived Anti-Commensal IgM, IgG, and IgA

Romain Ballet, Stanford University, USA
Short Talk: CD22 Positively Controls α 4 β 7-Dependent B Cell Homing to the Peyer's Patches

Poster Session 3

THURSDAY, JUNE 21

B Cell Tolerance and Autoimmunity

***Julie Zikherman**, University of California, San Francisco, USA

***Lars Nitschke**, University of Erlangen, Germany

Roberta Pelanda, University of Colorado Denver, USA
Dual Antibody B Cells in Lupus, Mice and Humans

Takeshi Tsubata, Tokyo Medical and Dental University, Japan
The Inhibitory B Cell Co-Receptor CD72 Regulates Tolerance to Self Nucleic Acids Crucial for Development of Systemic Lupus Erythematosus

Julie Zikherman, University of California, San Francisco, USA
Regulation of B Cell Tolerance by Nur77

Lars Nitschke, University of Erlangen, Germany
CD22 and Siglec-G Are Inhibitory Receptors on B Cells and Prevent Autoimmunity

Jeremy F. Brooks, University of Queensland, Australia
Short Talk: Characterizing Self-Reactive B Cell Responses in a Polyclonal Repertoire

Joanne H. Reed, Garvan Institute of Medical Research, Australia
Short Talk: Single Cell Analysis of Self-Reactive B Cells in Autoimmune Disease

Workshop 3: Autoimmunity

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***John C. Cambier**, University of Colorado, USA

***Simon Fillatreau**, Institut Necker Enfants Malades, France

Betsy J. Barnes, Feinstein Institute for Medical Research, USA
Targeting IRF5 Hyper-Activation in SLE B Cells Inhibits Disease Onset and Severity

Chih-Yeh Chen, Regensburg Center for Interventional Immunology, Germany

Bone Marrow Aire-Expressing Plasma Cells Ectopically Express Tissue-Restricted Self-Antigens and Drive Peripheral Tolerance by Inducing Autoreactive Regulatory T Cells

Amanda E. Agazio, University of Colorado Anschutz Medical Campus, USA

The Contribution of Anergic B Cells to Protective Immunity

Carlos Castrillon, Institut Pasteur, France
A Novel Technology to Follow Antibody Affinity Maturation during Autoimmunity

Roza I. Nurieva, University of Texas MD Anderson Cancer Center, USA

Role of E3 Ubiquitin Ligase GRAIL in B Cell Activation and Tolerance

Zia Rahman, Penn State Hershey Medical College, USA

Crosstalk between TLR7 and IFN γ Signaling via STAT1 in B Cells Controls Spontaneous Germinal Center and Autoimmune Responses

Jamie van Langelaar, Erasmus University Medical Center, Netherlands

Human T-bet+ B Cells: Induction and Effector Functions from a Multiple Sclerosis Perspective

Yang Yang, Stanford University School of Medicine, USA
Expression of CTLA4 in B-1 B Cells Acts as A Key Regulating Mechanism in Maintaining the Immune Homeostasis

B Cells in Autoimmune Diseases and Targeting Strategies

***David M. Tarlinton**, Monash University, Australia

***Roberta Pelanda**, University of Colorado Denver, USA

Reinhard E. Voll, University Freiburg, Germany
Targeting Plasma Cells in Systemic Lupus by Proteasome Inhibitors: From Mice to Men

Deborah L. Burnett, Garvan Institute of Medical Research, Australia
Short Talk: Antibodies Cross-Reacting with Self and Foreign Proteins Evolve on Consistent Trajectories to Shed Self-Binding, then Enhance Foreign-Binding

John C. Cambier, University of Colorado, USA
Loss of Energy in Human Autoimmunity; Underlying Mechanisms

Nicholas Sanderson, University of Basel, Switzerland
Short Talk: High Dimensional Characterization of Cell Phenotypes, Soluble Signaling Molecules and Antibodies in the Cerebrospinal Fluid of Patients with Multiple Sclerosis

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

FRIDAY, JUNE 22

Departure