IN THIS ISSUE

1  B Cells Boost Tregs See article p. 170
   Too Young To Remember Well See article p. 177
   AID Needs Aid See article p. 252
   GAS M Protein Fuels IgA Nephropathy See article p. 317
   WC1 Domains Alter Signal Strength See article p. 379

PILLARS OF IMMUNOLOGY

3  Hunting Autoimmune Disease Genes in NOD: Early Steps on a Long Road to Somewhere Important (Hopefully)
   Edward K. Wakeland

   John A. Todd, Timothy J. Airman, Richard J. Cor nell, Soumitra Ghosh, Jennifer R. S. Hall, Catherine M. Hearne, Andrew M. Knight, Jennifer M. Love, Marcia A. McAleer, Jan-Bas Prins, Nanda Rodrigues, Mark Lathrop, Alison Pressey, Nicole H. DeLarato, Laurence B. Peterson, and Linda S. Wicker

BRIEF REVIEWS

13  The Ground State of Innate Immune Responsiveness Is Determined at the Interface of Genetic, Epigenetic, and Environmental Influences
   Edward Huang and Christine Anne Wells

CUTTING EDGE

21  Cutting Edge: Antigen-Specific Thymocyte Feedback Regulates Homeostatic Thymic Conventional Dendritic Cell Maturation
   Nicholas A. Spidale, Bo Wang, and Roland Tisch

26  Cutting Edge: Parathyroid Hormone Facilitates Macrophage Efferocytosis in Bone Marrow via Proresolving Mediators Resolvin D1 and Resolvin D2
   Laurie K. McCauley, Jesmond Dalli, Amy J. Koh, Nan Chiang, and Charles N. Serhan

Cutting Edge: Vitamin D Regulates Lipid Metabolism in Mycobacterium tuberculosis Infection
Hugh Salamon, Natalie Bruiners, Karim Lakehal, Lanbo Shi, Janani Ravi, Ken D. Yamaguchi, Richard Pine, and Maria Laura Gennaro

Cutting Edge: Dexamethasone Potentiates the Responses of Both Regulatory T Cells and B-1 Cells to Antigen Immunization in the ApoE^{-/-} Mouse Model of Atherosclerosis
Aoshuang Chen, Yajun Geng, Hanzhong Ke, Laura Constant, Zhaqi Yan, Yue Pan, Patricia Lee, Jiajia Tan, Kurt Williams, Samantha George, Gnanasekar Munirathamam, Catherine A. Reardon, Godfrey S. Getz, Bin Wang, and Guoxing Zheng

ALLERGY AND OTHER HYPERSENSITIVITIES

Aspirin Activation of Eosinophils and Mast Cells: Implications in the Pathogenesis of Aspirin-Exacerbated Respiratory Disease
John W. Steinke, Julie Negri, Lixia Liu, Spencer C. Payne, and Larry Borish

ANTIGEN RECOGNITION AND RESPONSES

Tofacitinib Suppresses Antibody Responses to Protein Therapeutics in Murine Hosts
Masanori Onda, Kamran Ghoreschi, Scott Steward-Tharp, Craig Thomas, John J. O'Shea, Ira H. Pastan, and David J. FitzGerald

TCR Microclusters Pre-Exist and Contain Molecules Necessary for TCR Signal Transduction
Travis J. Crites, Kartika Padhan, James Muller, Michelle Krogsgaard, Prabhakar R. Gudla, Stephen J. Lockett, and Rajat Varma

Accumulation of Serial Forces on TCR and CD8 Frequently Applied by Agonist Antigenic Peptides Embedded in MHC Molecules Triggers Calcium in T Cells
Sergey Prshchep, Veronika I. Zarnitsyna, Jinsung Hong, Brian D. Eavolto, and Cheng Zhu

Superimposed Epitopes Restricted by the Same HLA Molecule Drive Distinct HIV-Specific CD8^+ T Cell Repertoires
Xiaoming Sun, Mamoru Fujiwara, Yi Shi, Nozomi Kuse, Hiroyuki Gatanaga, Victor Appay, George F. Gao, Shinichi Oka, and Masafumi Takiguchi

Lysophosphatidic Acid Receptor 5 Inhibits B Cell Antigen Receptor Signaling and Antibody Response

AUTOIMMUNITY

The Thyroxine-Containing Thyroglobulin Peptide (aa 2549–2560) Is a Target Epitope in Iodide-Accelerated Spontaneous Autoimmune Thyroiditis
Panayota Kolypetri, Karen Carayanniotis, Shofiur Rahman, Paris E. Gerogiou, Vassiliki Magafa, Paul Cordopatis, and George Carayanniotis

CLINICAL AND HUMAN IMMUNOLOGY

Hemin Controls T Cell Polarization in Sickle Cell Alloimmunization
Hui Zhong, Weili Bao, David Friedman, and Karina Yazdanbakhsh

Endogenously Expressed IL-13Rα2 Attenuates IL-13–Mediated Responses but Does Not Activate Signaling in Human Lung Fibroblasts

IL-1β Promotes the Differentiation of Polyfunctional Human CCR6^+CXCR3^+ Th1/17 Cells That Are Specific for Pathogenic and Commensal Microbes
Thomas Duhen and Daniel J. Campbell
130 The Inhibitory Effect of IFN-γ on Protease HTRA1 Expression in Rheumatoid Arthritis

Yuzhu Hou, Haijiang Lin, Linnan Zhu, Zhaoting Liu, Fanles Hu, Jianfeng Shi, Tao Yang, Xiaoyun Shi, Huifang Guo, Xiaotian Tan, Lianfeng Zhang, Qiang Wang, Zhanguo Li, and Yong Zhao

IMMUNE REGULATION

139 Astrocytic TGF-β Signaling Limits Inflammation and Reduces Neuronal Damage during Central Nervous System Toxoplasma Infection

Egle Cekanaviciute, Hans K. Dietrich, Robert C. Axtell, Aaron M. Williams, Roann Egusquiza, Karen M. Wai, Anita A. Koshy, and Marion S. Buckwalter

150 Nuclear Role of WASp in Gene Transcription Is Uncoupled from Its ARP2/3-Dependent Cytoplasmic Role in Actin Polymerization

Sanjoy Sadhukhan, Konstav Sarkar, Matthew Taylor, Fabio Candotti, and Yatin M. Vyas

161 Unique Temporal and Spatial Expression Patterns of IL-33 in Ovaries during Ovulation and Estrous Cycle Are Associated with Ovarian Tissue Homeostasis

Colin I. Carlock, Jean Wu, Cindy Zhou, Kiana Tatsum, Henry P. Adams, Filemon Tan, and Yahuan Lou

170 A Role for Intrathymic B Cells in the Generation of Natural Regulatory T Cells

Stacey N. Walters, Kylie E. Webster, Stephen Daley, and Shane T. Grey

177 Rapid Proliferation and Differentiation Impairs the Development of Memory CD8+ T Cells in Early Life

Norah L. Smith, Erin Wissink, Jocehyn Wang, Jennifer F. Pinello, Miles P. Davenport, Andrew Grimson, and Brian D. Rudd

185 Modeling the Clinical Phenotype of BTK Inhibition in the Mature Murine Immune System

Micah J. Benson, Varenka Rodriguez, David von Schack, Sean Keegan, Tim A. Cook, Jason Edmonds, Stephen Benoit, Nilufer Seth, Sarah Du, Dean Messing, Cheryl L. Nickerson-Nutter, Kyri Dunwasi-Joannopoulo, Andrew L. Rankin, Melanie Ruzek, Mark E. Schnute, and John Douhan, III

198 BCL6 Controls Th9 Cell Development by Repressing IL9 Transcription

Ribal Basil, William Orent, Marta Olah, Ahmed T. Karidi, Michael Frangieh, Thomas Buttrick, Samia J. Khoury, and Wassim Elyaman

208 Bovine γδ T Cells Are a Major Regulatory T Cell Subset

Efrain Guzman, Jayne Hope, Geraldine Taylor, Adrian L. Smith, Carolina Cubillo-Zapata, and Bryan Charleston

223 Inhibition of Bone Remodeling in Young Mice by Bisphosphonate Displaces the Plasma Cell Niche into the Spleen

Stefan Teufel, Bettina Gröntz, Julia Luther, Anja Derer, Thorsten Schinke, Michael Amling, Georg Schett, Dirk Mielenz, and Jean-Pierre David

234 Podocytes Regulate Neutrophil Recruitment by Glomerular Endothelial Cells via IL-6–Mediated Crosstalk

Sahithi J. Kuravi, Helen M. McGlennon, Simon C. Satchell, Moin A. Saleem, Lorraine Harper, Julie M. Williams, George Ed Rainier, and Caroline O. S. Savage

244 Differential Impact of CD27 and 4-1BB Costimulation on Effector and Memory CD8 T Cell Generation following Peptide Immunization

Jane E. Willoughby, Jonathan P. Kerr, Anne Rogel, Vadim Y. Taraban, Sarah L. Buchan, Peter W. M. Johnson, and Aymen Al-Shamkhani

IMMUNE SYSTEM DEVELOPMENT

252 Binding of AID to DNA Does Not Correlate with Mutator Activity

Allysia J. Matthews, Solomon Husain, and Jayanta Chaudhuri

258 Membrane Association of the CD3ε Signaling Domain Is Required for Optimal T Cell Development and Function

Matthew L. Bettini, Clifford Gay, Pradyot Dash, Kate M. Vignali, David E. Hamon, Jessica Dobbins, Etienne Gagnon, Paul G. Thomas, Kai W. Wucherpfennig, and Dario A. A. Vignali
The Role of the Syk/Shp-1 Kinase-Phosphatase Equilibrium in B Cell Development and Signaling
Ameera Alsadeq, Elias Hobeika, David Medgyesi, Kathrin Kläser, and Michael Reth

INFECTION AND HOST RESPONSE

NK Cell Responses to Simian Immunodeficiency Virus Vaginal Exposure in Naive and Vaccinated Rhesus Macaques
Liang Shang, Anthony J. Smith, Lijie Duan, Katherine E. Perkey, Lucy Qu, Stephen Wietgrefe, Mary Zupancic, Peter J. Southern, Katherine Masek-Hammerman, R. Keith Reeves, R. Paul Johnson, and Ashley T. Haase

IL-27 Limits Central Nervous System Viral Clearance by Promoting IL-10 and Enhances Demyelination
Maria Teresa P. de Aquino, Parul Kapil, David R. Hinton, Timothy W. Phares, Shweta S. Puntambekar, Carine Savarin, Cornelia C. Bergmann, and Stephen A. Stohlman

MYCOBACTERIUM TUBERCULOSIS Keto-Mycolic Acid and Macrophage Nuclear Receptor TR4 Modulate Foamy Biogenesis in Granulomas: A Case of a Heterologous and Noncanonical Ligand-Receptor Pair
Hedwin Kitdorlang Dkhar, Ravikanth Nanduri, Sahil Mahajan, Sandeep Dave, Anikta Saini, Arun Kumar Somavarapu, Ashish Arora, Raman Parkesh, Krishan Gopal Thakur, Shanmugam Mayilraj, and Pawan Gupta

Tetherin Promotes the Innate and Adaptive Cell–Mediated Immune Response against Retrovirus Infection In Vivo
Sam X. Li, Bradley S. Barrett, Karl J. Heilman, Ronald J. Meser, Rachel A. Liberatore, Paul D. Bieniasz, George Kassiotis, Kim J. Hasenkrug, and Mario L. Santiago

INNATE IMMUNITY AND INFLAMMATION

The Combined Role of Galactose-Deficient IgA1 and Streptococcal IgA–Binding M Protein in Inducing IL-6 and C3 Secretion from Human Mesangial Cells: Implications for IgA Nephropathy

miR-27a Regulates Inflammatory Response of Macrophages by Targeting IL-10
Na Xie, Huachun Cui, Sami Banerjee, Zheng Tan, Reinaldo Salomao, Mingui Fu, Edward Abraham, Victor J. Thannickal, and Gang Liu

A Critical Role for Human Caspase-4 in Endotoxin Sensitivity
Yuji Kajiwara, Tamar Schiff, Georgios Voloudakis, Miguel A. Gama Sooa, Gregory Elder, Ozlem Bozdagi, and Joseph D. Buchbaum

Infiltrating Monocyte-Derived Macrophages and Resident Kupffer Cells Display Different Ontogeny and Functions in Acute Liver Injury
Ehud Zigmond, Shany Samia-Grinberg, Metsada Pasmanik-Chor, Eli Brazowski, Oren Shibolet, Zamir Halpern, and Chen Varel

Proliferation Conditions Promote Intrinsic Changes in NK Cells for an IL-10 Response
Margaret L. Tarrio, Seung-Hwan Lee, Maria F. Fragoso, Hong-Wei Sun, Yuka Kanno, John J. O’Shea, and Christine A. Biron

Porcine Cathelicidins Efficiently Complex and Deliver Nucleic Acids to Plasmacytoid Dendritic Cells and Can Thereby Mediate Bacteria-Induced IFN-α Responses
Arnaud Baumann, Thomas Démoulins, Sylvie Python, and Artur Summerfield

Gcsef-Chr19 Promotes Neutrophil Migration to Damaged Tissue through Blood Vessels in Zebrafish
Jorge A. Galdames, Constanza Zuñiga-Traslaviña, Ariel E. Reyes, and Carmen G. Feijóo

MOLECULAR AND STRUCTURAL IMMUNOLOGY

Signal Transduction by Different Forms of the γδ T Cell–Specific Pattern Recognition Receptor WC1
Chuang Chen, Hauoting Hsu, Edward Hudgens, Janice C. Telfer, and Cynthia L. Baldwin

T Cell Activation Regulates CD6 Alternative Splicing by Transcription Dynamics and SRSF1
Vânia G. da Glória, Mafalda Martins de Araújo, Ana Mafalda Santos, Rafaela Leal, Sérgio F. de Almeida, Alexandre M. Carmo, and Alexandra Moreira
Characterization of Conventional and Atypical Receptors for the Chemokine CCL2 on Mouse Leukocytes
Laura B. Ford, Vuk Cerovic, Simon W. F. Milling, Gerard J. Graham, Chris A. H. Hansell, and Robert J. B. Nibbs

Coordinated Histone H3 Methylation and Acetylation Regulate Physiologic and Pathologic Fas Ligand Gene Expression in Human CD4+ T Cells
Smita S. Ghare, Swati Joshi-Barve, Akshata Moghe, Madhuvanti Patil, David F. Barker, Leila Gobejishvili, Guy N. Brock, Matthew Cave, Craig J. McClain, and Shirish S. Barve

T Cell–Intrinsic Function of the Noncanonical NF-κB Pathway in the Regulation of GM-CSF Expression and Experimental Autoimmune Encephalomyelitis Pathogenesis
Jiayi Yu, Xiaofei Zhou, Mako Nakaya, Wei Jin, Xubong Cheng, and Shao-Cong Sun

MUCOSAL IMMUNOLOGY

Specific Microbiota-Induced Intestinal Th17 Differentiation Requires MHC Class II but Not GALT and Mesenteric Lymph Nodes

Luminal Microbes Promote Monocyte–Stem Cell Interactions Across a Healthy Colonic Epithelium
Dagmara A. Skoczek, Petr Walczysko, Nikki Horn, Alyson Parris, Simon Clare, Mark R. Williams, and Anastasia Sobolewski

AUTHOR INDEX

INFORMATION FOR AUTHORS