IN THIS ISSUE

4891 Modulating To Escape Abs See article p. 5013
Approaches to NK Cell Education See article p. 5044
A Small Molecule Step toward Treating MS See article p. 5074
Provoking Platelets See article p. 5196

LETTERS TO THE EDITOR

4893 Comment on “Changes and Regulation of the C5a Receptor on Neutrophils during Septic Shock in Humans”
Andrew Conway Morris, Thomas S. Wilkinson, Timothy S. Walsh, and A. John Simpson

BRIEF REVIEWS

4895 Little Peptide, Big Effects: The Role of LL-37 in Inflammation and Autoimmune Disease
J. Michelle Kahlenberg and Mariana J. Kaplan

CUTTING EDGE

4903 Cutting Edge: Identification of the Thymic Stromal Lymphopoietin–Responsive Dendritic Cell Subset Critical for Initiation of Type 2 Contact Hypersensitivity
Masayuki Kitajima and Steven F. Ziegler

4908 Cutting Edge: Smad2 and Smad4 Regulate TGF-β–Mediated Il9 Gene Expression via EZH2 Displacement
Aibo Wang, Deng Pan, Young-Hee Lee, Gustavo J. Martinez, Xin-hua Feng, and Chen Dong

4913 Cutting Edge: Type 1 Diabetes Occurs despite Robust Anergy among Endogenous Insulin-Specific CD4 T Cells in NOD Mice
Kristen E. Pauken, Jonathan L. Linehan, Justin A. Spanier, Nathanael L. Sabli, Lakesh A. Kalekar, Bryce A. Binstadt, James J. Moon, Daniel L. Mueller, Marc K. Jenkins, and Brian T. Fife

ANTIGEN RECOGNITION AND RESPONSES

4919 Evolution of B Cell Responses to Clec9A-Targeted Antigen
Hae-Young Park, Amanda Light, Mireille H. Laboud, Irina Caminschi, David M. Tarlinton, and Ken Shortman

AUTOIMMUNITY

4926 Molecular Basis of 9G4 B Cell Autoreactivity in Human Systemic Lupus Erythematosus
Christopher Richardson, Anja Seema Chida, Diana Adlowitz, Lin Silver, Erin Fox, Scott A. Jenks, Elise Palmer, Youliang Wang, Jamie Heimburg-Molinario, Quan-Zhen Li, Chandra Mohan, Richard Cummings, Christopher Tipton, and Ignacio Sanz

4940 Reduced Effectiveness of CD4+Foxp3+ Regulatory T Cells in CD28-Deficient NOD.H-2h4 Mice Leads to Increased Severity of Spontaneous Autoimmune Thyroiditis
Jason S. Ellis, So-Hee Hong, Habib Zaghouani, and Helen Bralley-Mullen

4950 T Cell–Independent Modulation of Experimental Autoimmune Encephalomyelitis in ADAP-Deficient Mice
Swen Engelmann, Mauro Togni, Anja Thielitz, Peter Reichardt, Stefanie Kliche, Dirk Reinhold, Burkhardt Schraven, and Annekret Reinhold

4960 The Role of CD8+ T Cells and Their Local Interaction with CD4+ T Cells in Myelin Oligodendrocyte Glycoprotein35–55–Induced Experimental Autoimmune Encephalomyelitis
Tina Leuenberger, Magdalena Paterka, Eva Reuter, Josephine Herz, Raluca A. Nieseler, Helena Radbruch, Tobias Bopp, Frauke Zipp, and Volker Siffrin

4969 A Novel Disease-Modifying Antirheumatic Drug, Iguratimod, Ameliorates Murine Arthritis by Blocking IL-17 Signaling, Distinct from Methotrexate and Leflunomide
Qiong Luo, Yang Sun, Wen Liu, Cheng Qian, Biao Jin, Feifei Tao, Yanhong Gu, Xingxin Wu, Yan Shen, and Qiang Xu

4979 Reduced T Cell–Dependent Humoral Immune Response in Microsomal Prostaglandin E Synthase-1 Null Mice Is Mediated by Nonhematopoietic Cells
Fumiaki Kojima, Andrey Frolov, Rahul Matnani, Jerold G. Woodward, and Leslie J. Crofford

CLINICAL AND HUMAN IMMUNOLOGY

4989 A Distinct Subpopulation of Human NK Cells Restricts B Cell Transformation by EBV
Anna Lünemann, Liliana D. Vanoaica, Tarik Azzi, David Nadal, and Christian Münz

4996 STAT-3 Activation by Differential Cytokines Is Critical for Human In Vivo–Generated Plasma Cell Survival and Ig Secretion
Beatriz Rodríguez-Bayona, Ana Ramos-Amaya, Rubén López-Blanco, Antonio Campos-Caro, and José A. Brieva

IMMUNE REGULATION

5005 Targeting Uptake Receptors on Human Plasmacytoid Dendritic Cells Triggers Antigen Cross-Presentation and Robust Type I IFN Secretion
Jurjen Tel, Simone P. Sittig, Rebecca A. M. Blom, Luis J. Cruz, Gerty Schreibelt, Carl G. Figdor, and I. Jolanda M. de Vries

5013 Antigen Modulation Confers Protection to Red Blood Cells from Antibody through Fcγ Receptor Ligation
Sean R. Stowell, Justine S. Liepkalns, Jeanne E. Hendrickson, Kathryn R. Girard-Pierce, Nicole H. Smith, C. Maridith Arthur, and James C. Zimring

5026 Exogenous OX40 Stimulation during Lymphocytic Choriomeningitis Virus Infection Impairs Follicular Th Cell Differentiation and Diverts CD4 T Cells into the Effector Lineage by Upregulating Blimp-1
Tobias Boettler, Youn Soo Choi, Shahram Salek-Ardakani, Yang Cheng, Friedrich Moeckel, Michael Croft, Shane Crotty, and Matthias von Herrath

5036 SOCS3 Deletion in T Lymphocytes Suppresses Development of Chronic Ocular Inflammation via Upregulation of CTLA-4 and Expansion of Regulatory T Cells
Cheng-Rong Yu, Sung-Hye Kim, Rashid M. Mahdi, and Charles E. Egwuagu
IMMUNE SYSTEM DEVELOPMENT

5044 Education of Murine NK Cells Requires Both cis and trans Recognition of MHC Class I Molecules
Stéphanie Bessoles, Georgi S. Angelov, Jonathan Back, Georges Leclercq, Eric Vivier, and Werner Held

5052 Combined Deletion of Id2 and Id3 Genes Reveals Multiple Roles for E Proteins in Invariant NKT Cell Development and Expansion
Jia Li, Di Wu, Ning Jiang, and Yuan Zhuang

5065 Increased Level of E Protein Activity during Invariant NKT Development Promotes Differentiation of Invariant NKT2 and Invariant NKT17 Subsets
Taishan Hu, Hongcheng Wang, Anietie Simmons, Sandra Bajaña, Ying Zhao, Susan Kovats, Xiao-Hong Sun, and José Alberola-Illa

IMMUNOTHERAPY AND VACCINES

5074 Small Molecule Inhibitor of Antigen Binding and Presentation by HLA-DR2b as a Therapeutic Strategy for the Treatment of Multiple Sclerosis
Niannian Ji, Animesh Somanaboeina, Aakanksha Dixit, Kazuyuki Kawanuma, Neil J. Hayward, Christopher Self, Gary L. Olson, and Thomas G. Forsthuber

5085 Coadministration of Polyinosinic:Polycytidylic Acid and Immunostimulatory Complexes Modifies Antigen Processing in Dendritic Cell Subsets and Enhances HIV Gag-Specific T Cell Immunity
Kylie M. Quinn, Ayako Yamamoto, Andrea Costa, Patricia A. Darrah, Ross W. B. Lindsay, Sonia T. Hegde, Teresa R. Johnson, Barbara J. Flynn, Karin Lorè, and Robert A. Seder

5097 Structure-Based Design of Altered MHC Class II–Restricted Peptide Ligands with Heterogeneous Immunogenicity
Shuming Chen, Yili Li, Florence R. Depontieu, Tracee L. McMiller, A. Michelle English, Jeffrey Shabanowitz, Ferdynand Kos, John Sidney, Alessandro Sette, Steven A. Rosenberg, Donald F. Hunt, Roy A. Mariuzza, and Suzanne L. Topalian

5107 Selective Activation of Antigen-Experienced T Cells by Anti-CD3 Constrained on Nanoparticles
Ying-Chun Lo, Michael A. Edlin, and Jonathan D. Powell

INFECTIOUS DISEASE AND HOST RESPONSE

5115 Systemic Disease during Streptococcus pneumoniae Acute Lung Infection Requires 12-Lipoxygenase–Dependent Inflammation
Rudra Bhowmick, Nang H. Tin Maung, Bryan P. Hurley, Elsa Bou GHanem, Karsten Gronert, Beth A. McCormick, and John M. Leong

5124 Asymptomatic HLA-A*02:01–Restricted Epitopes from Herpes Simplex Virus Glycoprotein B Preferentially Recall Polyfunctional CD8+ T Cells from Seropositive Asymptomatic Individuals and Protect HLA Transgenic Mice against Ocular Herpes
Xavier Dervillez, Huma Qureshi, Azziz A. Chentoufi, Arif A. Khan, Elizabeth Kritzer, David C. Yu, Oscar R. Diaz, Chetan Gottimukkala, Mina Kalantari, Maria C. Villacres, Vanessa M. Scarpone, Denise M. McKinney, John Sidney, Alessandro Sette, Anthony B. Nesburn, Steven L. Wechsler, and Lbachir BenMohamed

5139 Disparate Epitopes Mediating Protective Heterologous Immunity to Unrelated Viruses Share Peptide–MHC Structural Features Recognized by Cross-Reactive T Cells
Zu T. Shen, Tina T. Nguyen, Keith A. Daniels, Raymond M. Welsh, and Lawrence J. Stern

5153 Influenza A Exacerbates Staphylococcus aureus Pneumonia by Attenuating IL-1β Production in Mice
Keven M. Robinson, Sun Mi Choi, Kevin J. McHugh, Sivanara Nayana Mandalapu, Richard I. Enelow, Jay K. Kolls, and John F. Alcorn

5160 IFN-γ–Induced Priming Maintains Long-Term Strain-Transcending Immunity against Blood-Stage Plasmodium chabaudi Malaria
Henrique Borges da Silva, Érika Machado de Salles, Raquel Hoffmann Panatieri, Silvia Beatriz Boccardin, Sérgio Marcelo Rodrigues-Málagá, Joë Maria Álvarez, and Maria Regina D'Império Lima
INNATE IMMUNITY AND INFLAMMATION

5170 Novel Regulatory Action of Ribosomal Inactivation on Epithelial Nod2-Linked Proinflammatory Signals in Two Convergent ATF3-Associated Pathways
Seong-Hwan Park, Kee Hun Do, Hye Jin Choi, Juil Kim, Ki-Hyung Kim, Jiyeon Park, Chang Gyu Oh, and Yuseok Moon

5182 Wnt6 Is Expressed in Granulomatous Lesions of Mycobacterium tuberculosis–Infected Mice and Is Involved in Macrophage Differentiation and Proliferation
Kolja Schaale, Julius Brandenburg, Andreas Kispert, Michael Leitges, Stefan Ehlers, and Norbert Reiling

5196 Lipopolysaccharide Stimulates Platelets through an IL-1β Autocrine Loop
G. Thomas Brown, Padmini Narayanan, Wei Li, Roy L. Silverstein, and Thomas M. McIntyre

5204 Phenotypic Polarization of Activated Astrocytes: The Critical Role of Lipocalin-2 in the Classical Inflammatory Activation of Astrocytes
Eunha Jang, Jong-Heon Kim, Shinuye Lee, Jae-Hong Kim, Jung-Wan Seo, Myungwon Jin, Maan-Gee Lee, Il-Sung Jang, Won-Ha Lee, and Kyoungbo Suk

5220 IL-13 Immunotoxin Accelerates Resolution of Lung Pathological Changes Triggered by Silica Particles in Mice

5230 Mitochondrial Reactive Oxygen Species Induces NLRP3-Dependent Lysosomal Damage and Inflammasome Activation
Michelle E. Heid, Peter A. Keyel, Christelle Kamga, Srutti Shiva, Simon C. Watkins, and Russell D. Salter

5239 Salmonella Infection Induces Recruitment of Caspase-8 to the Inflammasome To Modulate IL-1β Production
Si Ming Man, Panagiotis Tourloundis, Lee Hopkins, Tom P. Monie, Katherine A. Fitzgerald, and Clare E. Bryant

5247 Targeting F Box Protein Fbxo3 To Control Cytokine-Driven Inflammation
Rama K. Mallampalli, Tiffany A. Coon, Jennifer R. Glasser, Claire Wang, Sarah R. Dunn, Nathaniel M. Weathington, Jing Zhao, Chunbin Zou, Yutong Zhao, and Bill B. Chen

5256 Genome-Wide siRNA Screen Reveals a New Cellular Partner of NK Cell Receptor KIR2DL4: Heparan Sulfate Directly Modulates KIR2DL4-Mediated Responses
Michael Brusilovsky, Moti Cordoba, Benjamin Rosental, Oren Hershkovitz, Mark D. Andrade, Anna Pecherskaya, Margret B. Einarson, Yan Zhou, Alex Bratman, Kerry S. Campbell, and Angel Porgador

MOLECULAR AND STRUCTURAL IMMUNOLOGY

5268 MAIT Recognition of a Stimulatory Bacterial Antigen Bound to MR1
Jacinto López-Sagaseta, Charles L. Dulberger, Amanda McFedries, Mark Cushman, Alan Saghatelian, and Erin J. Adams

MUCOSAL IMMUNOLOGY

5278 Differential Uptake of Nanoparticles and Microparticles by Pulmonary APC Subsets Induces Discrete Immunological Imprints
Charles L. Hardy, Jeanne S. LeMasurier, Rohimah Mohamud, Jun Yao, Sue D. Xiang, Jennifer M. Rolland, Robyn E. O’Hehir, and Magdalena Plebanski

TRANSPLANTATION

5291 Induced Regulatory T Cells Promote Tolerance When Stabilized by Rapamycin and IL-2 In Vivo
Ping Zhang, Siok-Keen Tey, Motoko Koguma, Rachel D. Kuns, Stuart D. Olver, Katie E. Lineburg, Mary Lor, Bianca E. Teal, Neil C. Ruffels, Jyothy Raju, Lucie Leveque, Kate A. Markey, Antiopi Varelias, Andrew D. Clouston, Steven W. Lane, Kelli P. A. MacDonald, and Geoffrey R. Hill
Cooperativity of CD44 and CD49d in Leukemia Cell Homing, Migration, and Survival Offers a Means for Therapeutic Attack
Vibuthi Singh, Ulrike Erb, and Margot Zoller

Correction: Two Phases of Inflammatory Mediator Production Defined by the Study of IRAK2 and IRAK1 Knock-in Mice
Eduardo Pauls, Sambit K. Nanda, Hilary Smith, Rachel Toth, J. Simon C. Arthur, and Philip Cohen

Correction: T Cell–Derived IL-17 Mediates Epithelial Changes in the Airway and Drives Pulmonary Neutrophilia
Laura K. Fogli, Mark S. Sundrud, Swati Goel, Sofia Bajwa, Kari Jensen, Emmanuel Derudder, Amy Sun, Maryaline Coffre, Catherine Uyttenhove, Jacques Van Snick, Marc Schmidt-Supprian, Anjana Rao, Gabriele Grunig, Joan Durbin, Stefano S. Casola, Klaus Rajewsky, and Sergei B. Koralov

Correction: Tumor-Infiltrating Regulatory T Cells Inhibit Endogenous Cytotoxic T Cell Responses to Lung Adenocarcinoma
Anusha-Preethi Ganezan, Magnus Johansson, Brian Ruffell, Adam Yagui-Beltrán, Jonathan Lau, David M. Jablons, and Lisa M. Coussens

AUTHOR INDEX