5157  IN THIS ISSUE

LETTERS TO THE EDITOR
5159  Comment on “Dendritic Cells and Monocyte/Macrophages That Create the IL-6/APRIL-Rich Lymph Node Microenvironment Where Plasmablasts Mature”
Elodie Belnoue, Thomas Matthes, Claire-Anne Siegrist, and Bertrand Huard

5160  Response to Comment on “Dendritic Cells and Monocyte/Macrophages That Create the IL-6/APRIL-Rich Lymph Node Microenvironment Where Plasmablasts Mature”
Elodie Mohr, Karine Serre, and Ian MacLennan

5160  Comment on “Engineering Antibody Heavy Chain CDR3 to Create a Phage Display Fab Library Rich in Antibodies That Bind Charged Carbohydrates”
Alexander H. Lucas and Donald C. Reason

PILLARS OF IMMUNOLOGY
5163  Identification of the Last Cog in a Ligand-Independent Signaling Machine?
David L. Wiest

Claude Saint-Ruf, Katharina Ungewiss, Marcus Groettrup, Ludovica Bruno, Hans Joerg Fehling, and Harald von Boehmern

BRIEF REVIEWS
5171  World Malaria Day 2009: What Malaria Knows about the Immune System That Immunologists Still Do Not
Susan K. Pierce and Louis H. Miller

CUTTING EDGE
5179  Cutting Edge: Phosphatidylinositol 4,5-Bisphosphate Concentration at the APC Side of the Immunological Synapse Is Required for Effector T Cell Function
David Robert Fooksman, Saame Raza Shaikh, Sarah Boyle, and Michael Edidin

On the cover: A developing brachial lymph node, present in an embryo at day 16.5 of gestation, is depicted. The hematopoietic cells, stained with anti-CD45 (blue), within the developing lymph node are tightly clustered with the stromal lymphoid tissue organizer cells which are characterized by ICAM-1 (green) and VCAM-1 (red) expression. Vondenhoff, M. F., M. Greuter, G. Goverse, D. Elewaut, P. Dewint, C. F. Ware, K. Hoorweg, G. Kraal, and R. E. Mebius. 2009. LTβR signaling induces cytokine expression and up-regulates lymphangiogenic factors in lymph node anlagen. J. Immunol. 182: 5439–5445.
CELLULAR IMMUNOLOGY AND IMMUNE REGULATION

5203 CD59 Blockade Enhances Antigen-Specific CD4+ T Cell Responses in Humans: A New Target for Cancer Immunotherapy
Baalasubramanian Sivasankar, M. Paula Longhi, Kathleen M. E. Gallagher, Gareth J. Betts, B. Paul Morgan, Andrew J. Godkin, and Awen M. Gallimore

5208 Ig-Like Transcript 3 Regulates Expression of Proinflammatory Cytokines and Migration of Activated T Cells
Chih-Chao Chang, Zhurui Liu, George Vlad, Haiyan Qin, Xugang Qiao, Donna M. Mancini, Charles C. Marboe, Raffaello Cortesini, and Nicole Suciu-Foca

5217 Locally Administered TLR7 Agonists Drive Systemic Antitumor Immune Responses That Are Enhanced by Anti-CD40 Immunotherapy
Steve A. Broomfield, Robbert G. van der Most, Amy C. Pissios, Sathish Mahendran, Michael G. Tovey, Mark J. Smyth, Bruce W. S. Robinson, and Andrew J. Currie

5225 PI3K p110+ Positively Regulates Lipopolysaccharide-Induced IL-12 Production in Human Macrophages and Dendritic Cells and JNK1 Plays a Novel Role
Mitsuyoshi Utugi, Kunio Dobashi, Akihiro Ono, Tamotsu Ishizuka, Shin-Ichi Matsuzaki, Takeshi Hisada, Yasuo Shimizu, Tadayoshi Kawata, Haruka Aoki, Yosuke Kamide, and Masatomo Mori

5232 The Role of TCR Specificity and Clonal Competition During Reconstruction of the Peripheral T Cell Pool
Catarina Leitão, António A. Freitas, and Sylvie Garcia

5240 PD-1 Is a Regulator of NY-ESO-1-Specific CD8+ T Cell Expansion in Melanoma Patients

5250 TRBP Homolog Interacts with Eukaryotic Initiation Factor 6 (eIF6) in Fenneropenaeus chinensis
Shuai Wang, Ning Liu, An-Jing Chen, Xiao-Fan Zhao, and Jin-Xing Wang

5259 Regulation of NK Cell Function by Human Granulocyte Arginase
Johanna Oberlies, Carsten Watzl, Thomas Giese, Claudia Luckner, Pascale Kropf, Ingrid Müller, Anthony D. Ho, and Markus Munder

5268 Autoantigen Immunization at Different Sites Reveals a Role for Anti-Inflammatory Effects of IFN-γ in Regulating Susceptibility to Experimental Autoimmune Encephalomyelitis
Silvia Pastor, Alfredo Minguella, Wentao Mi, and E. Sally Ward

5276 Liver X Receptors Control IgE Expression in B Cells
Guido Heine, Anja Dahmen, Kerstin Hilt, Dennis Ernst, Milena Milovanovic, Björn Hartmann, and Margitta Worm

5283 Galectin-1 Tunes TCR Binding and Signal Transduction to Regulate CD8 Burst Size
Scott D. Liu, Tamar Tomanian, Kevin W. Brubin, Jeff F. Miller, Françoise Poirier, and M. Carrie Miceli

5296 IL-23 Drives Pathogenic IL-17-Producing CD8+ T Cells
Bogoljub Ciric, Mohamed El-behi, Rosalyn Cabrera, Guang-Xian Zhang, and Abdolmohamad Rostami
5306  Id3 Restricts the Developmental Potential of γδ Lineage during Thymopoiesis
Ikuko Ueda-Hayakawa, Josh Mahlios, and Yuan Zhuang

5317  A Functional IL-13 Receptor Is Expressed on Polarized Murine CD4+ Th17 Cells and IL-13 Signaling Attenuates Th17 Cytokine Production

5322  Lipopolysaccharide Potentiates Effector T Cell Accumulation into Nonlymphoid Tissues through TRIF
Jeremy P. McAleer, Robert J. Rossi, and Anthony T. Vella

5331  Experimental Autoimmune Encephalomyelitis in Lewis rats: IFN-β Acts As a Tolerogenic Adjuvant for Induction of Neuroantigen-Dependent Tolerance
Mark D. Mannie, Derek J. Abbott, and J. Lori Blanchfield

5342  Surface CD152 (CTLA-4) Expression and Signaling Dictates Longevity of CD28null T Cells
Holger Hoff, Karin Knieke, Zulema Caball, Heike Hirsland, George Vratsanos, Gerd-Rüdiger Burmester, Gerhard Jorch, Steven G. Nadler, Barbara Bröker, Katrin Hebdl, and Monika C. Brunner-Weinzierl

5352  Protective CD8 T Cell Memory Is Impaired during Chronic CD70-Driven Costimulation
Klaas P. J. M. van Gisbergen, Ronald W. van Olffen, Josine van Beek, Koenraad F. van der Sluijs, Ramon Arens, Martijn A. Nolte, and Rene A. van Lier

5363  Pathogenic Natural Antibodies Recognizing Annexin IV Are Required to Develop Intestinal Ischemia-Reperfusion Injury

5374  ATLa, an Aspirin-Triggered Lipoxin A4 Synthetic Analog, Prevents the Inflammatory and Fibrotic Effects of Bleomycin-Induced Pulmonary Fibrosis

5382  Developmental Acquisition of the Lyn-CD22-SHP-1 Inhibitory Pathway Promotes B Cell Tolerance
Andrew J. Gross, Julia R. Lyandres, Anil K. Panigrahi, Eline T. Luning Prak, and Anthony L. DeFranco

5393  Ym1/2 Promotes Th2 Cytokine Expression by Inhibiting 12/15(S)-Lipoxygenase: Identification of a Novel Pathway for Regulating Allergic Inflammation
Yeping Cai, Rakesh K. Kumar, Jianzheng Zhou, Paul S. Foster, and Dianne C. Webb

5400  Chronic Lymphocytic Leukemia and B and T Cells Differ in Their Response to Cyclic Nucleotide Phosphodiesterase Inhibitors
John A. Meyers, Derrick W. Su, and Adam Lerner

5412  The Regulation of Liver Cell Survival by Complement
Matej M. Markiewski, Robert A. DeAngelis, Christoph W. Strey, Periklis G. Foukas, Craig Gerard, Norma Gerard, Rick A. Wetsel, and John D. Lambris

5419  Galectin-2 Suppresses Contact Allergy by Inducing Apoptosis in Activated CD8+ T Cells
Karin Loser, Andreas Sturm, Maik Voikort, Verena Kupas, Sandra Balkov, Matteo Auriermann, Carlo Sternermann, Axel U. Dignan, Thomas A. Luger, and Stefan Beisert

5430  Target-Dependent B7-H1 Regulation Contributes to Clearance of Central Nervous System Infection and Dampens Morbidity
Timothy W. Pahre, Chandran Ramakrishna, Gabriel I. Parra, Alan Epstein, Lieping Chen, Roscoe Atkinson, Stephen A. Stohlman, and Cornelia C. Bergmann

5439  LTβR Signaling Induces Cytokine Expression and Up-Regulates Lymphangiogenic Factors in Lymph Node Anlagen
Mark F. Vonderhoff, Mascha Greuter, Gera Goverce, Dirk Elewaut, Pieter Dewint, Carl F. Ware, Kerim Hoorweg, Georg Kraal, and Reina E. Mebius

5445  ...
A Single Residue, Arginine 65, Is Critical for the Functional Interaction of Leukocyte-Associated Inhibitory Receptor-1 with Collagens
Xiaobin Tang, Sriram Narayanan, Giovanna Peruzzi, Akintomide Apara, Kannan Natarajan, David H. Margulies, John E. Coligan, and Francisco Borrego

Expression of CD226 Antagonizes Apoptotic Cell Death in Murine Thymocytes
Liang Fang, Xinbai Zhang, Jun Miao, Fang Zhao, Kun Yang, Ran Zhuang, Hermann Bujard, Yanzhang Wei, Angang Yang, Libhua Chen, and Boquan Jin

Conditional Gene Targeting in Mouse High Endothelial Venules
Hiroto Kawashima, Jotaro Hirakawa, Yuki Tohiawa, Minoru Fukuda, and Yumiko Saga

IL-4 Is Proangiogenic in the Lung under Hypoxic Conditions
Kazuyo Yamaji-Kegan, Qingning Su, Daniel J. Angelini, and Roger A. Johns

Cross-Presentation by Osteoclasts Induces FoxP3 in CD8⁺ T Cells
Jennifer R. Kiesel, Zachary S. Buchwald, and Rajeev Aurora

Human Chorionic Gonadotropin Attracts Regulatory T Cells into the Fetal-Maternal Interface during Early Human Pregnancy
Anne Schumacher, Nadja Brachwitz, Sindy Sohr, Kurt Engelaud, Stefanie Langwisch, Maria Dolaptchieva, Tobias Alexander, Andrei Taran, Sava Fill Malferttheiner, Serban-Dan Costa, Gerolf Zimmermann, Cindy Nitschke, Hans-Dieter Volk, Henry Alexander, Matthias Gunzer, and Ana Claudia Zitzenbusen

Oncoprotein Signaling Mediates Tumor-Specific Inflammation and Enhances Tumor Progression
Jeff S. Pufnock and Jay L. Roshstein

Bone Marrow-Derived Mast Cells Accumulate in the Central Nervous System During Inflammation but Are Dispensable for Experimental Autoimmune Encephalomyelitis Pathogenesis
Jami L. Bennett, Marie-Renée Blanchet, Linlin Zhao, Lori Zbytnuik, Frann Antignano, Matthew Gold, Paul Kubek, and Kelly M. McNagny

Impaired CD4 and CD8 Effector Function and Decreased Memory T Cell Populations in ICOS-Deficient Patients
Naomi Takahashi, Kenji Matsumoto, Hiroshi Saito, Toshihiro Nanski, Nobuyuki Miyasaka, Tetsuji Kobata, Miyuki Azuma, Sang-Kyou Lee, Shuki Mizutani, and Tomohiro Morio

Impact of Intrinsic Cooperative Thermodynamics of Peptide-MHC Complexes on Antiviral Activity of HIV-Specific CTL
Chihiro Motozono, Saeo Yanaka, Koubei Tsumoto, Masafumi Takiguchi, and Takamasa Ueno

An Anti-Vascular Endothelial Growth Factor Receptor 2/Fetal Liver Kinase-1 Listeria monocytogenes Anti-Angiogenesis Cancer Vaccine for the Treatment of Primary and Metastatic Her-2/neu⁺ Breast Tumors in a Mouse Model
Matthew M. Seavey, Paulo C. Maciag, Nada Al-Rawi, Duane Sewell, and Yvonne Paterson

TLR Agonists Prevent the Establishment of Allogeneic Hematopoietic Chimerism in Mice Treated with Costimulation Blockade
David M. Miller, Thomas B. Thorley, Todd Pearson, Annie J. Kruger, Masahiro Yamazaki, Leonard D. Shultz, Raymond M. Welsh, Michael A. Brehm, Aldo A. Rossini, and Dale L. Greiner

Rapid Up-Regulation and Granule-Independent Transport of Perforin to the Immunological Synapse Define a Novel Mechanism of Antigen-Specific CD8⁺ T Cell Cytotoxic Activity
George Makedonas, Pinaki P. Banerjee, Rabul Panadey, Adam R. Herperger, Keri B. Sanborn, Garrett A. D. Hardy, Jordan S. Orange, and Michael R. Betts

MOLECULAR AND STRUCTURAL IMMUNOLOGY

Molecular Dissection of Antibody Responses against Pneumococcal Surface Protein A: Evidence for Diverse D14-Less Heavy Chain Gene Usage and Avidity Maturation
Soma Rohatgi, Debjani Dutta, Subhajit Tahir, and Devinder Sehgal
Assembled DJβ Complexes Influence TCRβ Chain Selection and Peripheral Vβ Repertoire
Andrea C. Carpenter, Katherine S. Yang-Iott, Linda H. Chao, Beth Nuskey, Scott Whitlow, Frederick W. Alt, and Craig H. Bassing

The Essential Role of LAT in Thymocyte Development during Transition from the Double-Positive to Single-Positive Stage
Shudan Shen, Minghua Zhu, Jasmine Lau, Mariana Chuck, and Weiguo Zhang

Patterns of Receptor Revision in the Immunoglobulin Heavy Chains of a Teleost Fish
Miles D. Lange, Geoffrey C. Waldhuieter, and Craig J. Lobb

IMMUNOGENETICS

IL-6 Modulates CD5 Expression in B Cells from Patients with Lupus by Regulating DNA Methylation
Soizic Garaud, Christelle Le Daniec, Sandrine Jousse-Joulin, Catherine Hanrot-Saliou, Alain Sarraux, Rizgar A. Mageed, Pierre Youinou, and Yves Renaudineau

Direct Hematological Toxicity and Illegitimate Chromosomal Recombination Caused by the Systemic Activation of CreERT²
Atsuko Yoshioka Higashi, Tomokatsu Ikawa, Masamichi Muramatsu, Aris N. Economides, Akira Niwa, Tomohiko Okuda, Andrew J. Murphy, Jose Rojas, Toshio Heike, Tatsutoshi Nakahata, Hiroshi Kawamoto, Toru Kita, and Motoko Yanagita

HOST DEFENSE

Transcriptome Profiling and Functional Analyses of the Zebrafish Embryonic Innate Immune Response to Salmonella Infection
Oliver W. Stockhammer, Anna Zakrzewska, Zsólön Hegedűs, Herman P. Spanik, and Annemarie H. Meijer

Phagocytosis in Macrophages Lacking Cbl Reveals an Unsuspected Role for Fcγ Receptor Signaling and Actin Assembly in Target Binding
Benjamin M. Dale, Daniel Traum, Hedieye Erdjument-Bromage, Paul Tempst, and Steven Greenberg

Gastrointestinal Nematode Infection Exacerbates Malaria-Induced Liver Pathology
Helena Helmby

A Proviral Role for CpG in Cytomegalovirus Infection
Ann-Charlotte Iversen, Bjørg Steinkjer, Nadra Nilsen, Janne Bohnhorst, Siv Helen Moen, Randi Vik, Phil Stephens, David W. Thomas, Chris A. Benedict, and Terje Espevik

Actin and RIG-I/MAVS Signaling Components Translocate to Mitochondria upon Influenza A Virus Infection of Human Primary Macrophages
Tiina Öhman, Johanna Rintahakka, Nisse Kalkkinen, Sampsa Matikainen, and Tuula A. Nyman

Mechanism Regulating Reactive Oxygen Species in Tumor-Induced Myeloid-Derived Suppressor Cells

IL-7 Receptor Expression Provides the Potential for Long-Term Survival of Both CD62Lhigh Central Memory T Cells and Th1 Effector Cells during Leishmania major Infection
Sara L. Colpitts, Nicole M. Dalton, and Phillip Scott

The Innate Immune Response Affects the Development of the Autoimmune Response in Theiler’s Virus-Induced Demyelinating Disease
Julie K. Olson and Stephen D. Miller

The Avidity and Lytic Efficiency of the CTL Response to HTLV-1
Tarek Kattan, Aidan MacNamara, Aileen G. Rowan, Hirohsa Nose, Angelina J. Moyle, Yuetsu Tanaka, Graham P. Taylor, Becca Asquith, and Charles R. M. Bangham

Pertussis Toxin Signals through the TCR to Initiate Cross-Desensitization of the Chemokine Receptor CXCR4
Olivia D. Schneider, Alison A. Weiss, and William E. Miller
INFLAMMATION

5740 A Role for Bid in Eosinophil Apoptosis and in Allergic Airway Reaction
Marielle Maret, Claude Raffjé, Sérénine Létué, Aurélie Phelpe, Olivier Thibaudeau, Joëlle Marchal, Marina Pretolani, and Anne Druihlé

5748 IL-27 Blocks RORc Expression to Inhibit Lineage Commitment of Th17 Cells

5757 NF-κB p50 Regulates C/EBPα Expression and Inflammatory Cytokine-Induced Neutrophil Production
Dehua Wang, Ido Paz-Priel, and Alan D. Friedman

5763 Differential Regulation of Foxp3 and IL-17 Expression in CD4 T Helper Cells by IRAK-1
Urmila Maitra, Sarah Davis, Christopher M. Reilly, and Liwu Li

5770 α2-Macroglobulin Capture Allows Detection of Mast Cell Chymase in Serum and Creates a Reservoir of Angiotensin II-Generating Activity
Wilfred W. Raymond, Sharon Su, Anastasia Makarova, Todd M. Wilson, Melody C. Carter, Dean D. Metcalfe, and George H. Caughey

5778 Amyloid β Interaction with Receptor for Advanced Glycation End Products Up-Regulates Brain Endothelial CCR5 Expression and Promotes T Cells Crossing the Blood-Brain Barrier
Man Li, De-Shu Shang, Wei-Dong Zhao, Li Tian, Bo Li, Wen-Gang Fang, Li Zhu, Shu-Mei Man, and Yu-Hua Chen

5789 Inflammation Recapitulates the Ontogeny of Lymphoid Stromal Cells
Lucie Peduto, Sophie Dulauroy, Matthias Lochner, Gerald F. Spaeth, Miguel A. Morales, Ana Cumano, and Gérard Eberl

5800 HMGB1 Is Phosphorylated by Classical Protein Kinase C and Is Secreted by a Calcium-Dependent Mechanism
Young Joo Oh, Ju Ho Youn, Yeouju Jung Ji, Sang Eun Lee, Kook Jin Lim, Ji Eun Choi, and Jeon-Soo Shin

5810 An Atypical Protein Kinase C (PKCζ) Plays a Critical Role in Lipopolysaccharide-Activated NF-κB in Human Peripheral Blood Monocytes and Macrophages
XueSong Huang, Ling-Yu Chen, Astrid M. Doerner, Warren W. Pan, Laura Smith, Shuang Huang, Thomas J. Papadimos, and Zhixing K. Pan

5816 Deletion of PPARγ in Alveolar Macrophages Is Associated with a Th-1 Pulmonary Inflammatory Response
Anagha Malur, Almedia J. Mccoy, Sergio Arce, Barbara P. Barna, Mani S. Kavouru, Achut G. Malur, and Mary Jane Thomasen

5823 The Major Outer Membrane Protein of a Periodontopathogen Induces IFN-β and IFN-Stimulated Genes in Monocytes via Lipid Raft and TANK-Binding Kinase 1/IFN Regulatory Factor-3
Sung-Hoon Lee, Joong Su Kim, Hye-Kyoung Jun, Hae-Ri Lee, Daeil Lee, and Bong-Kyu Choi

5836 Imiquimod-Induced Psoriasis-Like Skin Inflammation in Mice Is Mediated via the IL-23/IL-17 Axis
Leslie van der Fits, Sabine Mourtz, Jane S. A. Voerman, Marius Kant, Louis Boon, Jon D. Laman, Ferry Cornelissen, Anne-Marie Mus, Edwin Florenca, Errol P. Prens, and Erik Lubberts

CLINICAL IMMUNOLOGY

5846 Luteinizing Hormone-Releasing Hormone Enhances T Cell Recovery following Allogeneic Bone Marrow Transplantation
Gabrielle L. Goldberg, Christopher G. King, Rebecca A. Nejat, David Y. Sub, Odette M. Smith, Jamison C. Bretz, Robert M. Samstein, Jarrod A. Dudakov, Ann P. Chidgey, Selina Chen-Kiang, Richard L. Boyd, and Marcel R. M. van den Brink

5855 Selective Oxidation of DNA Topoisomerase 1 Induces Systemic Sclerosis in the Mouse
Amélie Servetta, Claire Goulvestre, Niloofar Kavian, Carole Nicco, Philippe Guipquin, Christiane Chéreau, Vincent Viislet, Loïc Guillemin, Luc Mouthon, Bernard Weill, and Frédéric Batteux
5865  Matrix Metalloproteinase-1 Is Regulated in Tuberculosis by a p38 MAPK-Dependent, p-Aminosalicylic Acid-Sensitive Signaling Cascade
Lucinda Rand, Justin A. Green, Luísa Saraiva, Jon S. Friedland, and Paul T. G. Elkington

5873  Tumor Regression following DNA Vaccination and Regulatory T Cell Depletion in neu Transgenic Mice Leads to an Increased Risk for Autoimmunity
Jennifer B. Jacob, Yi-chi M. Kong, Ilke Nalbantoglu, Daniel P. Snower, and Wei-Zen Wei

5882  CORRECTIONS

5883  AUTHOR INDEX