IN THIS ISSUE

PILLARS OF IMMUNOLOGY

Antibody Wars: Extreme Diversity
Patricia J. Gearhart

Sydney Brenner and César Milstein

BRIEF REVIEWS

The Inflammatory Caspases: Key Players in the Host Response to Pathogenic Invasion and Sepsis
Amal Nadiri, Melissa K. Wolinski, and Maya Saleh

CUTTING EDGE

Cutting Edge: IL-7-Independent Regulation of IL-7 Receptor α Expression and Memory CD8 T Cell Development
Kimberly D. Klonowski, Kristina J. Williams, Amanda L. Marzo, and Leo Lefrançois

Cutting Edge: ASC Mediates the Induction of Multiple Cytokines by Porphyromonas gingivalis via Caspase-1-Dependent and -Independent Pathways
Debra J. Taha, Linghua Zhang, Catherine Champagne, Daniel T. Bergstralh, Heather A. Iocca, John D. Lich, and Jenny Pan-Yun Ting

Cutting Edge: Paracrine, but Not Autocrine, IL-2 Signaling Is Sustained during Early Antiviral CD4 T Cell Response
Meixiao Long and Adam J. Adler

Cutting Edge: T Cell Requirement for CD28 Costimulation Is Due to Negative Regulation of TCR Signals by PTEN
Jodi L. Buckler, Patrick T. Walsh, Paige M. Porrett, Yongwun Choi, and Laurence A. Turka

Cutting Edge: IL-1β Mediates the Proangiogenic Activity of Osteopontin-Activated Human Monocytes
Antonella Naldini, Daria Leali, Annalisa Pucci, Emilia Morena, Fabio Carraro, Beatrice Nico, Domenico Ribatti, and Marco Presta

4271 Cutting Edge: Rho Activation and Actin Polarization Are Dependent on Plexin-A1 in Dendritic Cells
So-Young Eun, Brian P. O'Connor, Athena W. Wong, Hendrick W. van Deventer, Debra J. Taxman, William Reed, Ping Li, Janice S. Blum, Karen P. McKinnon, and Jenny P.-Y. Ting

4276 Cutting Edge: Uniqueness of Lymphoid Chemokine Requirement for the Initiation and Maturation of Nasopharynx-Associated Lymphoid Tissue Organogenesis
Satohiro Fukuyama, Takahiro Nagatake, Dong-Young Kim, Kaoru Takamura, Eun Jeong Park, Tsnuyasu Kaito, Norimitsu Tanaka, Yuichi Kurono, and Hiroshi Kiyono

CELLULAR IMMUNOLOGY AND IMMUNE REGULATION

4281 Preferential Involvement of Tim-3 in the Regulation of Hepatic CD8\(^{+}\) T Cells in Murine Acute Graft-versus-Host Disease
Tsunekazu Oikawa, Youke Kamimura, Hisay Akiha, Hideo Yagita, Ko Okumura, Hiroki Takahashi, Mikio Zeniya, Hisao Tajiri, and Miyuki Azuma

4288 Combination of Vaccination and Chimeric Receptor Expressing T Cells Provides Improved Active Therapy of Tumors
Hui-Rong Jiang, David E. Gilham, Kate Mulryan, Natalia Kirillova, Robert E. Hawkins, and Peter L. Stern

4299 Dual Ligand Stimulation of RAW 264.7 Cells Uncovers Feedback Mechanisms That Regulate TLR-Mediated Gene Expression
Xiaocui Zhu, Mi Sook Chang, Robert C. Hsueh, Ron Taussig, Kelly D. Smith, Melvin I. Simon, and Sangdun Choi

4311 T Cell, Ig Domain, Mucin Domain-2 Gene-Deficient Mice Reveal a Novel Mechanism for the Regulation of Th2 Immune Responses and Airway Inflammation
Paul D. Rennert, Takaharu Ichimura, Irene D. Sizing, Veronique Bailly, Zhifang Li, Rachel Rennard, Patricia McCoon, Lourdes Pablo, Steven Mikiasz, Leticia Tarilonte, and Joseph V. Bonventre

4322 Transient Receptor Potential Vanilloid Subtype 1 Mediates Microglial Cell Death In Vivo and In Vitro via Ca\(^{2+}\)-Mediated Mitochondrial Damage and Cytochrome c Release
Sang R. Kim, Seung U. Kim, Uhtaek Oh, and Byung K. Jin

4330 Three Memory Subsets of Human CD8\(^{+}\) T Cells Differently Expressing Three Cytolytic Effector Molecules
Hiroshi Takata and Masafumi Takiguchi

4341 The Human CD77\(^{+}\) B Cell Population Represents a Heterogeneous Subset of Cells Comprising Centroblasts, Centrocytes, and Plasmablasts, Prompting Phenotypical Revision
Carl-Magnus Högerkorp and Carl A. K. Borrebaek

4350 Cigarette Smoke-Induced Pulmonary Inflammation and Emphysema Are Attenuated in CCR6-Deficient Mice

4360 Identification and Characterization of the Precursors Committed to Osteoclasts Induced by TNF-Related Activation-Induced Cytokine/Receptor Activator of NF-\(\kappa\)B Ligand
Ayako Machizaki, Masamichi Takami, Tadaharu Kawawaa, Reina Suzunoto, Takahisa Sasaki, Akihiko Shiba, Hiroaki Tsukasaki, Baohong Zhao, Rika Yasuhara, Tetsuo Suzawa, Yoichi Miyamoto, Yongwu Choi, and Ryutaro Kamijo

4369 Inhibitory Role of IFN-\(\gamma\)-Inducible Lysosomal Thiol Reductase in T Cell Activation
Igor Barjaktarević, Ayman Rahman, Sasa Radoja, Branka Bogunović, Alison Vollmer, Stanislav Vukmanović, and Maja Marić

4376 Blockade of CTLA-4 on CD4\(^{+}\)CD25\(^{+}\) Regulatory T Cells Abrogates Their Function In Vivo
Simon Read, Rebecca Greenwald, Ana Izcue, Nicholas Robinson, Didier Mandelbrot, Loise Francisco, Arlene H. Sharpe, and Fiona Powrie

4384 Induction of Autoimmunity by Expansion of Autoreactive CD4\(^{+}\)CD62L\(^{low}\) Cells In Vivo
Bastian Amend, Hong Doster, Christian Lange, Evelyn Dubois, Hubert Kalbacher, Arthur Melms, and Felix Bischof

4391 The Effects of Age, Thymectomy, and HIV Infection on \(\alpha\) and \(\beta\) TCR Excision Circles in Naive T Cells
Carline van den Dool and Rob J. de Boer
A Large T Cell Invagination with CD2 Enrichment Resets Receptor Engagement in the Immunological Synapse
Kentner Singleton, Nadia Parvaze, Kavyya R. Dama, Kenneth S. Chen, Paula Jennings, Bozidar Puric, Michael D. Sjaastad, Christopher Gilpin, Mark M. Davis, and Christoph Wulfing

Host-Derived Langerhans Cells Persist after MHC-Matched Allografting Independent of Donor T Cells and Critically Influence the Alloresponses Mediated by Donor Lymphocyte Infusions
Nadira Durakovic, Karl B. Bezek, Mario Skarica, Vedran Radojcic, Ephraim J. Fuchs, George F. Murphy, and Leo Luznik

Early Exposure to IL-4 Stabilizes IL-4 mRNA in CD4+ T Cells via RNA-Binding Protein HuR
Timur O. Yarovinsky, Noah S. Butler, Martha M. Monick, and Gary W. Hunninghake

Regulatory Role of γδ T Cells in the Recruitment of CD4+ and CD8+ T Cells to Lung and Subsequent Pulmonary Fibrosis
Philip L. Simonian, Christina L. Roark, Fernando Diaz del Valle, Brent E. Palmer, Ivor S. Douglas, Koichi Ikuta, Willi K. Born, Rebecca L. O’Brien, and Andrew P. Fontenot

Induction of C3 and CCL2 by C3a in Keratinocytes: A Novel Autocrine Amplification Loop of Inflammatory Skin Reactions
Rahul Purwar, Miriam Wittmann, Jörg Zwirner, Martin Oppermann, Michael Kracht, Oliver Dittrich-Breiholz, Ralf Gutzmer, and Thomas Werfel

Cell-Autonomous CCL5 Transcription by Memory CD8 T Cells Is Regulated by IL-4
Antoine Marc, Charles-Antoine Coupet, Thierry Walzer, Martine Tomkowiak, Raffaella Ghittoni, and Jacqueline Marvel

Augmented IL-7 Signaling during Viral Infection Drives Greater Expansion of Effector T Cells but Does Not Enhance Memory
Joseph C. Sun, Sophie M. Lehar, and Michael J. Bevan

Functional Dichotomy between OX40 and 4-1BB in Modulating Effector CD8 T Cell Responses
Seung-Woo Lee, Yunji Park, Aihua Song, Hilde Cheroutre, Byoung S. Kwon, and Michael Croft

CpG DNA Activates Survival in Murine Macrophages through TLR9 and the Phosphatidylinositol 3-Kinase-Akt Pathway
David P. Sester, Kristian Brion, Angela Trieu, Helen S. Goodridge, Tara L. Roberts, Jasmyn Dunn, David A. Hume, Katryn J. Stacey, and Matthew J. Sweet

B Cells Drive Early T Cell Autoimmunity In Vivo prior to Dendritic Cell-Mediated Autoantigen Presentation
Jun Yan, Bohdan P. Harvey, Renelle J. Gee, Mark J. Shlomchik, and Mark J. Mamula

The Majority of Human Peripheral Blood CD4+CD25highFoxp3+ Regulatory T Cells Bear Functional Skin-Homing Receptors
Kazuki Hirahara, Luzheng Liu, Rachael A. Clark, Kei-ichi Yamanaka, Robert C. Fuhlbrigge, and Thomas S. Kupper

Ligation of CD80 Is Critical for High-Level CD25 Expression on CD8+ T Lymphocytes
Sharmila Pejawar-Gaddy and Martha A. Alexander-Miller

A Novel Role for Viral-Defective Interfering Particles in Enhancing Dendritic Cell Maturation
Jacob S. Yount, Thomas A. Kraus, Curt M. Horvath, Thomas M. Moran, and Carolina B. López

Trauma-Hemorrhage Induces Depressed Splenic Dendritic Cell Functions in Mice
Takashi Kawasaki, William J. Hubbard, Mashkoor A. Choudhry, Martin G. Schwacha, Kirby I. Bland, and Irshad H. Chaudry
Homeostatic Proliferation as an Isolated Variable Reverses CD8\(^+\) T Cell Anergy and Promotes Tumor Rejection
Ian E. Brown, Christian Blank, Justin Kline, Aalok K. Kacha, and Thomas F. Gajewski

STAT1-Independent Cell Type-Specific Regulation of Antiviral APOBEC3G by IFN-\(\alpha\)
Phuong Thi Nguyen Sarkis, Songcheng Ying, Rongzhen Xu, and Xiao-Fang Yu

Intracellular Protein Modification Associated with Altered T Cell Functions in Autoimmunity
Mei-Ling Yang, Hester A. Doyle, Renelle J. Gre, Jonathan D. Louvoun, Steven Clarke, Brian R. Lawson, Dana W. Aswad, and Mark J. Mamula

Rac1 Negatively Regulates Lipopolysaccharide-Induced IL-23 p19 Expression in Human Macrophages and Dendritic Cells and NF-\(\kappa B\) p65 \(\text{trans}\) Activation Plays a Novel Role
Mitsuyoshi Usugi, Kunio Dohashi, Tamotsu Ishizuka, Tadayoshi Kawata, Takeshi Hisada, Yasuo Shimizu, Akihiro Ono, and Masatomo Mori

CD25\(^+\)CD4\(^+\) Regulatory T Cells and Memory T Cells Prevent Lymphopenia-Induced Proliferation of Naïve T Cells in Transient States of Lymphopenia
Christine Bourgeois and Brigitta Stockinger

MOLECULAR AND STRUCTURAL IMMUNOLOGY

PKB Rescues Calcineurin/NFAT-Induced Arrest of Rag Expression and Pre-T Cell Differentiation
Amiya K. Patra, Thomas Drewes, Swen Engelmann, Sergei Chevpiolo, Hiroyuki Kishi, Thomas Hünig, Edgar Serfling, and Ursula H. Bommhardt

Structural Characterization of Mycobacterial Phosphatidylinositol Mannoside Binding to Mouse CD1d
Dirk M. Zajonc, Gary D. Ainge, Gavin F. Painter, Wayne B. Severn, and Ian A. Wilson

Repression of IFN-\(\gamma\) Induction of Class II Transactivator: A Role for PRDM1/Blimp-1 in Regulation of Cytokine Signaling
Reuben M. Tooze, Sophie Stephenson, and Gina M. Doody

Characterization of a Novel C-Type Lectin, \textit{Bombyx mori} Multibinding Protein, from the \textit{B. mori} Hemolymph: Mechanism of Wide-Range Microorganism Recognition and Role in Immunity
Ayako Watanabe, Sousui Miyazawa, Madoka Kitami, Hiroko Tabunoki, Kenjiro Ueda, and Ryoichi Sato

Molecular Mechanisms for Transcriptional Regulation of Human High-Affinity IgE Receptor \(\beta\)-Chain Gene Induced by GM-CSF
Kyoko Takahashi, Natsuko Hayashi, Shuichi Kaminogawa, and Chisei Ra

IMMUNOGENETICS

Identification of Susceptibility Loci for Skin Disease in a Murine Psoriasis Model

MHC Class II Molecules Control Murine B Cell Responsiveness to Lipopolysaccharide Stimulation
Joana Rodo, Lígia A. Gonçalves, Jocelyne Demengeot, António Coutinho, and Carlos Penha-Gonçalves

HOST DEFENSE

Restoration of Natural IgM Production from Liver B Cells by Exogenous IL-18 Improves the Survival of Burn-Injured Mice Infected with \textit{Pseudomonas aeruginosa}
Manabu Kinoshita, Nariyoshi Shimomiya, Satoshi Ono, Hironori Tsujimoto, Tochinobu Kawahta, Anushi Matsumoto, Hoshio Hiraide, and Shubji Seki

Inhibition of IL-2 Induced IL-10 Production as a Principle of Phase-Specific Immunotherapy
Manish Bodas, Nitia Jain, Amit Awasthi, Sunil Martin, Raghv Kumar Penke Loka, Dineshkumar Dandekar, Debasis Mitra, and Bhaskar Saha

Fatal Recall Responses Mediated by CD8 T cells during Intracellular Bacterial Challenge Infection
Constantine Bitsakis and Gary Winslow
Immunologic Homeostasis during Infection: Coexistence of Strong Pulmonary Cell-Mediated Immunity to Secondary Cryptococcus neoformans Infection While the Primary Infection Still Persists at Low Levels in the Lungs
Dennis M. Lindell, Megan N. Ballinger, Roderick A. McDonald, Galen R. Toews, and Gary B. Huffnagle

IL-17 Production Is Dominated by γδ T Cells rather than CD4 T Cells during Mycobacterium tuberculosis Infection
Euan Lockhart, Angela M. Green, and JoAnne L. Flynn

Murine γ-Herpesvirus 68 Limits Naturally Occurring CD4+CD25+ T Regulatory Cell Activity following Infection
Nancy Gasper-Smith, Ian Marriott, and Kenneth L. Bost

Specific Recognition of Candida albicans by Macrophages Requires Galectin-3 to Discriminate Saccharomyces cerevisiae and Needs Association with TLR2 for Signaling
Thierry Jouault, Miryam El Abed-El Behi, Maria Martinez-Esparza, Laetitia Breuila, Pierre-André Trinel, Matthias Chamailla, François Trottein, and Daniel Poulain

The Reduced Bactericidal Function of Complement C5-Deficient Murine Macrophages Is Associated with Defects in the Synthesis and Delivery of Reactive Oxygen Radicals to Mycobacterial Phagosomes
D. Sundarsingh, Guixiang Dai, Christopher R. Singh, Devin R. Lindsey, Amanda K. Smith, Subramanian Dhandayuthapani, Robert L. Hunter, Jr., and Chinnaswamy Jagannath

Differential Selection Pressure Exerted on HIV by CTL Targeting Identical Epitopes but Restricted by Distinct HLA Alleles from the Same HLA Supertype

High Vaccine Efficacy against Shigellosis of Recombinant Noninvasive Shigella Mutant That Expresses Yersinia Invasin
Toshihiko Suzuki, Yuko Yoshikawa, Hiroshi Ashida, Hiroki Iwai, Takahito Toyotome, Hidenori Matsuri, and Chihiro Sasakawa

Galectin-3 Induces Death of Candida Species Expressing Specific β-1,2-Linked Mannans
Luciana Kobatsu, Daniel K. Hsu, Armin G. Jegalian, Fu-Tong Liu, and Linda G. Baun

INFLAMMATION

Activation of the Lectin Pathway by Natural IgM in a Model of Ischemia/Reperfusion Injury

TLR3 Ligation Activates an Antiviral Response in Human Fetal Astrocytes: A Role for Viperin/cig5
Mark A. Rivieccio, Hyeon-Sook Suh, Yongmei Zhao, Meng-Liang Zhao, Keh Chung Chin, Sunhee C. Lee, and Celia F. Bronson

The Monoclonal Antibody CHO-131 Identifies a Subset of Cutaneous Lymphocyte-Associated Antigen T Cells Enriched in P-Selectin-Binding Cells
Zhenya Ni, James J. Campbell, Gloria Niewanz, and Bruce Walcheck

Basal Rather Than Induced Heme Oxygenase-1 Levels Are Crucial in the Antioxidant Cytoprotection
Sei-ichiro Tsuchihashi, Masha Livhits, Yuan Zhai, Ronald W. Busuttil, Jesi A. Arauso, and Jerzy W. Kapiec-Weglinski

Follistatin-Like Protein-1 Is a Novel Proinflammatory Molecule
Takako Miyamae, Anthony D. Marinov, Dawn Sowders, David C. Wilson, Jason Develin, Robert Boudreau, Paul Robbins, and Raphael Hirsch

TCR ξ Down-Regulation under Chronic Inflammation Is Mediated by Myeloid Suppressor Cells Differentially Distributed between Various Lymphatic Organs
Renal Collecting Duct Epithelial Cells React to Pyelonephritis-Associated Escherichia coli by Activating Distinct TLR4-Dependent and -Independent Inflammatory Pathways
Cécilia Chassin, Jean-Michel Goujon, Sylvie Dariche, Laurence du Merle, Marcelle Bens, Françoise Cluzeaud, Catherine Werts, Eric Ogier-Denis, Chantal Le Bouguénec, Dominique Buzoni-Gatel, and Alain Vandewalle

Cyclooxygenase-1 Overexpression Decreases Basal Airway Responsiveness but Not Allergic Inflammation
Jeffrey W. Card, Michelle A. Carey, J. Ayece Bradbury, Joan P. Graves, Fred B. Lih, Michael P. Moorman, Daniel L. Morgan, Laura M. DeGraff, Yun Zhao, Julie F. Foley, and Darryl C. Zeldin

A Novel C5a Receptor-Tissue Factor Cross-Talk in Neutrophils Links Innate Immunity to Coagulation Pathways
Kontstantinos Ritis, Michael Doumas, Dimitrios Mastelios, Anastasia Micheli, Stavros Giaglis, Paola Magotti, Stavros Rafail, Georgios Kartalis, Pavchalis Sideras, and John D. Lambris

Complement-Dependent Control of Teratoma Formation by Embryonic Stem Cells
Cody A. Koch, Corinne E. Jordan, and Jeffrey L. Platt

A Role for Inflammatory Mediators in the Induction of Immunoregulatory B Cells
Yumi Matsumura, Scott N. Byrne, Dat X. Nghiem, Yasuko Miyahara, and Stephen E. Ullrich

Regulation of IL-1 and TNF Receptor Expression and Function by Endogenous Macrophage Migration Inhibitory Factor
Myeu-Ling Toh, Daniel Aebeler, Derek Lacey, Yuan Yang, LeiLani L. Santos, Michael Clarkson, Laverne Sharma, Colin Clyne, and Eric F. Morand

A Microbial TLR2 Agonist Imparts Macrophage-Activating Ability to Apolipoprotein A-1
Akira Hasebe, Nathan D. Pennock, Hong-Hua Mu, Fok V. Chan, Michael L. Taylor, and Barry C. Cole

Exposure of the Promonocytic Cell Line THP-1 to Escherichia coli Induces IFN-γ-Inducible Lysosomal Thiol Reductase Expression by Inflammatory Cytokines
Rebecca L. Lackman and Peter Cresswell

Collaborative Action of NF-κB and p38 MAPK Is Involved in CpG DNA-Induced IFN-α and Chemokine Production in Human Plasmacytoid Dendritic Cells
Youko Otsawa, Samiko Iho, Ramiko Takaiji, Hisakazu Takatsuka, Saburo Yamamoto, Takayuki Takahashi, Satomi Horiguchi, Yoshimasa Urakaki, Takasumi Matsuki, and Shigeharu Fujieda

Caveolin-1 Regulates NF-κB Activation and Lung Inflammatory Response to Sepsis Induced by Lipopolysaccharide
Sean Garrean, Xiao-Pei Gao, Victor Brovkovych, Jun Shimizu, You-Yang Zhao, Stephen M. Vogel, and Asrar B. Malik

Eosinophil-Derived Cationic Proteins Activate the Synthesis of Remodeling Factors by Airway Epithelial Cells
Sophie Pégorier, Lori A. Wagner, Gerald J. Gleich, and Marina Pretolani

Novel Approach to Inhibit Asthma-Mediated Lung Inflammation Using Anti-CD147 Intervention
William M. Guinn, Jesse M. Dansker, Rustum Falahati, Ifeanyi Okwumabua, Ann Kelly-Welch, Achisah D. Keegan, Christophe Vanpouille, James J. Lee, Lindsay A. Dent, David Leitenberg, Michael I. Bukrinsky, and Stephanie L. Constant

Native High-Density Lipoprotein Augments Monocyte Responses to Lipopolysaccharide (LPS) by Suppressing the Inhibitory Activity of LPS-Binding Protein
Patricia A. Thompson and Richard L. Kitchens

Reference

CLINICAL IMMUNOLOGY

Essential Role for IL-10 in Resistance to Lipopolysaccharide-Induced Preterm Labor in Mice
Sarah A. Robertson, Rebecca J. Skinner, and Alison S. Care

Functional Reversion of Antigen-Specific CD8+ T Cells from Patients with Hodgkin Lymphoma following In Vitro Stimulation with Recombinant Polyepitope
Corey Smith, Leanne Cooper, Melinda Burgess, Michael Riz, Natasha Webb, Eleonore Lambley, Judy Tellam, Paula Marston, John F. Seymour, Maber Gandhi, and Rajiv Khanna