IN THIS ISSUE

PILLARS OF IMMUNOLOGY

4299 The Peptide Cargo of Class I Molecules: Not Just Passive Passengers
Hidde L. Ploegh

Alain Townsend, Claes Öhleén, Judy Bastin, Hans-Gustaf Ljunggren, Linda Foster, and Klas Kärre

BRIEF REVIEWS

4307 A New Class of Reverse Signaling Costimulators Belongs to the TNF Family
Mingyi Sun and Pamela J. Fink

CUTTING EDGE

4313 Cutting Edge: An In Vivo Requirement for STAT3 Signaling in T117 Development and T117-Dependent Autoimmunity
Timothy J. Harris, Joseph F. Gross, Hung-Rong Yen, Hong Xin, Marcin Kortylewski, Emilia Albesiano, Edward L. Hipkiss, Dereeq Getnet, Monica V. Goldberg, Charles H. Maris, Franck Housseau, Hua Yu, Drew M. Pardoll, and Charles G. Drake

4318 Cutting Edge: Lack of Evidence for Connexin-43 Expression in Human Epidermal Langerhans Cells
Simone C. Zimmerli, Florence Maison, José Cancela, Paolo Meda, and Conrad Hauser

CELLULAR IMMUNOLOGY AND IMMUNE REGULATION

4323 CD8+CD28− T Regulatory Lymphocytes Inhibiting T Cell Proliferative and Cytotoxic Functions Infiltrate Human Cancers
Gilberto Filaci, Daniela Fenoglio, Marco Fravega, Gianluca Ansaldi, Giacomo Borgonovo, Paolo Traverso, Barbara Villaggio, Alessandra Ferrera, AnnaLisa Kunkl, Maria Rizzi, Francesca Ferrera, Piercesare Balestra, Massimo Ghio, Paola Contini, Maurizio Setti, Daniel Olive, Bruno Azzarone, Giorgio Carmignani, Jean Louis Ravetti, Giancarlo Torre, and Francesco Indiveri

On the cover: 40x H&E stain of paraformaldehyde-fixed and paraffin-embedded human skin grafted onto C.B-17 SCID/ beige mice that had been adoptively transferred with human effector memory CD4+ T cells (CD45RO+CCR7−CD62L−) and harvested after 3 wk. The dermis shows signs of significant rejection including extensive infiltration of leukocytes and thrombosis of the microvasculature. Shiao, S. L., N. C. Kirkiles-Smith, B. R. Shepherd, J. M. McNiff, E. J. Carr, and J. S. Pober. 2007. Human effector memory CD4+ T cells directly recognize allogeneic endothelial cells in vitro and in vivo. J. Immunol. 179: 4297–4944.
Natural Phosphorylation of CD5 in Chronic Lymphocytic Leukemia B Cells and Analysis of CD5-Regulated Genes in a B Cell Line Suggest a Role for CD5 in Malignant Phenotype
He´le`ne Gary-Gouy, Alexander Sainz-Perez, Jean-Brice Marteau, Anne Marfaing Koka, Jozo Delic, Hélène Merle-Beral, Pierre Galanaud, and Ali Dalloul

Copolymer-1 Induces Adaptive Immune Anti-inflammatory Glial and Neuroprotective Responses in a Murine Model of HIV-1 Encephalitis
Santhi Gorantla, Jianou Liu, Hannah Sneller, Huanyu Dou, Adelina Holguin, Lynette Smith, Tsuneyu Ikezu, David J. Volsky, Larisa Poluektova, and Howard E. Gendelman

TLR2 Signaling Renders Quiescent Naïve and Memory CD4+ T Cells More Susceptible to Productive Infection with X4 and R5 HIV-Type 1
Sandra Thibault, Mélanie R. Tardif, Corinne Barat, and Michel J. Tremblay

Ambient Ozone Primes Pulmonary Innate Immunity in Mice
John W. Hollingsworth, Shuichiro Marnoka, Zhuowei Li, Stavros Garantziotis, Erin N. Potts, David M. Brass, Alan Fong, W. Michael Foster, and David A. Schwartz

Binding of Lymphoid Chemokines to Collagen IV That Accumulates in the Basal Lamina of High Endothelial Venules: Its Implications in Lymphocyte Trafficking
Bo-Gie Yang, Toshiyuki Tanaka, Myoung Ho Jang, Zhongbin Bai, Haruko Hayasaka, and Masayuki Miyasaka

Normal Establishment of Virus-Specific Memory CD8 T Cell Pool following Primary Infection during Pregnancy
Carolyn M. Constantin, David Masopust, Tania Gourley, Jason Grayson, Ora L. Strickland, Rafi Ahmed, and Elizabeth A. Bonney

Serine Protease Inhibitor 6-Deficient Mice Have Increased Neutrophil Immunity to Pseudomonas aeruginosa
Manling Zhang, Ni Liu, Sun-Mi Park, Yue Wang, Susan Byrne, Andrea E. Murmann, Scott Bahr, and Marcus E. Peter, Steven T. Olson, Abderrazzag Belaouaj, and Philip G. Ashton-Rickardt

Human Effector Memory CD4+ T Cells Directly Recognize Allogeneic Endothelial Cells In Vitro and In Vivo
Stephen L. Shiao, Nancy C. Kirkiler-Smith, Benjamin R. Shepherd, Jennifer M. McNiff, Edward J. Carr, and Jordan S. Pober

IL-27 Suppresses Th2 Cell Development and Th2 Cytokines Production from Polarized Th2 Cells: A Novel Therapeutic Way for Th2-Mediated Allergic Inflammation
Tomohiro Yoshimoto, Takayuki Yoshimoto, Koubun Yasuda, Junichiro Mizuguchi, and Kenji Nakanishi

Intercellular Transfer of Carcinoembryonic Antigen from Tumor Cells to NK Cells
Noam Stern-Ginossar, Shlomo Nedvetzki, Gal Markel, Roi Gazit, Gili Better-Cohen, Hagit Achdout, Memet Aker, Richard S. Blumberg, Daniel M. Davis, Ben Appelmelk, and Ofer Mandelboim

Ubiquitinylation of Ig Dictates the Endocytic Fate of the B Cell Antigen Receptor

TLR4 on Follicular Dendritic Cells: An Activation Pathway That Promotes Accessory Activity
Mobey Eldin M. El Shikh, Rania M. El Sayed, Yongzhong Wu, Andreas K. Szakal, and John G. Tew

Inhibition of Terminal Complement Components in Presensitized Transplant Recipients Prevents Antibody-Mediated Rejection Leading to Long-Term Graft Survival and Accommodation

B Cell Antigen Receptor-Induced Rac1 Activation and Rac1-Dependent Spreading Are Impaired in Transitional Immature B Cells Due to Levels of Membrane Cholesterol
Randall J. Brezski and John G. Monroe
Negative Regulation of CD40-Mediated B Cell Responses by E3 Ubiquitin Ligase Casitas-B-Lineage Lymphoma Protein-B
Guilin Qiao, Minxiang Lei, Zhenping Li, Yonglian Sun, Andrew Minto, Yang-Xin Fu, Haiyan Ying, Richard J. Quigg, and Jian Zhang

Surfactant Protein A Activation of Atypical Protein Kinase C ζ in IkB-α-Dependent Anti-Inflammatory Immune Regulation
Christina Moulakakis, Stefanie Adam, Ulrike Seitzer, Andrea B. Schromm, Michael Leitges, and Cordula Stamme

T Regulatory Cells Control Numbers of NK Cells and CD8α+ Immature Dendritic Cells in the Lymph Node Paracortex
Martin Giroux, Ekaterina Yurchenko, Jessica St.-Pierre, Ciriacio A. Piccirillo, and Claude Perreault

EAE Tolerance Induction with Hsp70-peptide Complexes Depends on H60 and NKG2D Activity
Grazyna Galazka, Anna Jurewicz, Wojciech Orlowski, Marius Stasiulek, Celia F. Brosnan, Cedric S. Raine, and Krzysztof Selmaj

The CD16+CD56bright NK Cell Subset Is Resistant to Reactive Oxygen Species Produced by Activated Granulocytes and Has Higher Antioxidative Capacity Than the CD16+CD56dim Subset
Helena Harlin, Mikael Hanson, C. Christian Johansson, Daiju Sakurai, Isabel Poschke, Håkan Norell, Karl-Johan Malmberg, and Rolf Kiessling

Pathogen-Specific CD8 T Cell Responses Are Directly Inhibited by IL-10
Partha Sarathi Biswas, Virginia Pedicord, Alexander Plou, Ewa Menet, Ingrid Leiner, and Eric G. Pamer

Defective Alloreactive CD8 T Cell Function and Memory Response in Allograft Recipients in the Absence of CD4 Help
Yuan Zhai, Yue Wang, Zheng Wu, and Jerzy W. Kapiec-Weglinski

Skin-Derived Dendritic Cells Can Mediate Deletional Tolerance of Class I-Restricted Self-Reactive T Cells

IFN-γ Mediates TNF-α-Induced STAT1 Phosphorylation and Induction of Retinoic Acid-Inducible Gene-I in Human Cervical Cancer Cells
Tomoh Matsumiya, Stephen M. Prescott, and Diana M. Stafforini

CD83 Expression Is a Sensitive Marker of Activation Required for B Cell and CD4+ T Cell Longevity In Vivo
Charlene M. Prazna, Norihito Yazawa, Yoko Fujimoto, Manabu Fujimoto, and Thomas F. Tedder

Characterization of the Functional Properties of the Voltage-Gated Potassium Channel Kv1.3 in Human CD4+ T Lymphocytes
Lina Hu, Michael Pennington, Qiong Jiang, Katharine A. Whartenby, and Peter A. Calabresi

Killing Kinetics of Simian Immunodeficiency Virus-Specific CD8+ T Cells: Implications for HIV Vaccine Strategies
Erik Rollman, Miranda Z. Smith, Andrew G. Brooks, Damian F. J. Purcell, Bartek Zuber, Ian A. Ramsbaw, and Stephen J. Kent

Neonatal FcR Expression in Bone Marrow-Derived Cells Functions to Protect Serum IgG from Catabolism
Shreeram Akilesh, Gregory J. Christianson, Derry C. Roopenian, and Andrey S. Shaw

Phosphatidylinositol 3-Kinase/Akt Activation by Integrin-Tumor Matrix Interaction Suppresses Fas-Mediated Apoptosis in T Cells
Chung-Chen Su, Yu-Ping Lin, Yu-Jung Cheng, Jyun-Yuan Huang, Woei-Jer Chuang, Yan-Shen Shan, and Bei-Chang Yang

Calcineurin Negatively Regulates TLR-Mediated Activation Pathways
Young Jun Kang, Brenda Kusler, Motoyuki Otuka, Michael Hughes, Nobutaka Suzuki, Shinobu Suzuki, Wen-Chen Yeh, Shizuo Akira, Jiabnai Han, and Patricia P. Jones
Molecular and Structural Immunology

Early Growth Response 1 and NF-ATc1 Act in Concert to Promote Thymocyte Development beyond the β-Selection Checkpoint
Ekaterina K. Kolosova, Maria Ciofani, Robert Beneza, Toru Miyazaki, Neil Clipstone, Juan Carlos Zúñiga-Pflücker, and David L. Wiest

Immunogenetics

Genetic Variation in PTPN22 Correlates to Altered Function of T and B Lymphocytes
Mary Rieck, Adrian Arechiga, Sana Onengut-Gumuscu, Carla Greenbaum, Patrick Concannon, and Jane H. Buckner

Host Defense

Differential Role of TLR- and RLR-Signaling in the Immune Responses to Influenza A Virus Infection and Vaccination
Shohei Koyama, Ken J. Ishii, Himanuhi Kumar, Takeshi Tanimoto, Cesayir Coban, Satoshi Uematsu, Taro Kawai, and Shizuo Akira

Alternatively Activated Macrophages in Intestinal Helminth Infection: Effects on Concurrent Bacterial Colitis
Meiqian Weng, Deke Huntley, I-Fei Huang, Ondulla Faye-Jackson, Lijian Wang, Aliese Sarkisian, Qingping Zhou, W. Allan Walker, Bobby J. Cherayil, and Hai Ning Shi
Live Attenuated Lentivirus Infection Elicits Polyfunctional Simian Immunodeficiency Virus Gag-Specific CD8+ T Cells with Reduced Apoptotic Susceptibility in Rhesus Macaques that Control Virus Replication after Challenge with Pathogenic SIVmac239
Meritxell Genesic, Tracy Rourke, Jun Li, Kristen Bost, Barinderpaul Chohan, Michael B. McChesney, and Christopher J. Miller

In Vivo Electroporation Enhances the Immunogenicity of Hepatitis C Virus Nonstructural 3/4A DNA by Increased Local DNA Uptake, Protein Expression, Inflammation, and Infiltration of CD3+ T Cells
Gustaf Ahlén, Jonas Söderholm, Torunn Tjelle, Rune Kjeken, Lars Fredin, Urban Höglund, Pontus Blomberg, Michael Fons, Iacob Mathiesen, and Matti Sällberg

TLR9 Activation Induces Normal Neutrophil Responses in a Child with IRAK-4 Deficiency: Involvement of the Direct PI3K Pathway
Cyrille Hoarau, Bénédicte Gérard, Emmanuel Lescanne, Dominique Henry, Stéphanie François, Jean-Jacques Lacapère, Jamel El Bennia, Pham My-Chan Dang, Bernard Grandchamp, Yvon Lebranchu, Marie-Anne Gougerot-Pocidalo, and Carole Elbim

Analysis of Eosinophil Turnover In Vivo Reveals Their Active Recruitment to and Prolonged Survival in the Peritoneal Cavity
Caspar Ohnmacht, Andrea Pullner, Nico van Rooijen, and David Voehringer

IFN Regulatory Factor 8 Mediates Apoptosis in Nonhemopoietic Tumor Cells via Regulation of Fas Expression
Dafeng Yang, Mutshuamy Thangaraju, Darren D. Browning, Zheng Dong, Borys Korchin, Dina C. Lev, Vadivel Ganapathy, and Kehin Liu

ASC/PYCARD and Caspase-1 Regulate the IL-18/IFN-γ Axis during Anaplasma phagocytophilum Infection
Joao H. F. Pedro, Fayyas S. Sutterwala, Bindu Sukumaran, Yasunori Ogura, Feng Qian, Ruth R. Montgomery, Richard A. Flavell, and Erol Fikrig

INFLAMMATION

The Role of the Prostaglandin D2 Receptor, DP, in Eosinophil Trafficking
Petra Schrauf, Julia F. Royer, Evi Kostenis, Trond Ulven, Eva M. Sturm, Maria Waldhoer, Gerald Hoefler, Rafsina Schuligoi, Irmgard Th. Lippe, Bernhard A. Peskar, and Akos Heinemann

Deletion of Secretory Group V Phospholipase A2 Attenuates Cell Migration and Airway Hyperresponsiveness in Immunosensitized Mice
Nilda M. Muñoz, Angelo Y. Melton, Jonathan P. Arnt, Joseph V. Bonventre, Wonhwa Cho, and Alan R. Leff

A Critical Role for TLR4 in the Pathogenesis of Necrotizing Enterocolitis by Modulating Intestinal Injury and Repair
Cynthia L. Leaphart, Jaime Cavallo, Steven C. Gribar, Selma Cetin, Jun Li, Maria F. Branca, Theresa D. Dubowski, Chhinder P. Soehbi, and David J. Hackam

TLR3-Dependent Induction of Nitric Oxide Synthase in RAW 264.7 Macrophage-Like Cells via a Cytosolic Phospholipase A2/Cyclooxygenase-2 Pathway
José Pindado, Jesús Balisinde, and María A. Balboa

Aging Up-Regulates Expression of Inflammatory Mediators in Mouse Adipose Tissue
Diyong Wu, Zhishong Ren, Munkypong Pae, Weimin Guo, Xuelin Cui, Alfred H. Merrill, and Simin Nikbin Meydani

Generation of Th1 and Th2 Chemokines by Human Eosinophils: Evidence for a Critical Role of TNF-α
Lin Ying Liu, Mary Ellen Bates, Nizar N. Jarjour, William W. Buse, Paul J. Bertics, and Elizabeth A. B. Kelly

A Novel Inflammatory Pathway Involved in Leukocyte Recruitment: Role for the Kinin B1 Receptor and the Chemokine CXCL5
Johan Duchene, Florence Leconte, Saleh Ahmed, Cecile Cayla, Joao Pesquero, Michael Bader, Mauro Perretti, and Amrita Ahluwalia

B Cells Amplify IFN-γ Production By T Cells via a TNF-α-Mediated Mechanism
Laurence C. Menard, Laurie A. Minns, Sylvie Darche, Daniel W. Mielcarz, David M. Fourneau, David Roos, Florence Dzięszczak, Lloyd H. Kasper, and Dominique Buzoni-Gatel
Deficiency of the NF-kB Inhibitor Caspase Activating and Recruitment Domain 8 in Patients with Rheumatoid Arthritis Is Associated with Disease Severity
Ana Fontalba, Victor Martinez-Taboada, Olga Gutierrez, Carlos Pipaon, Natividad Benito, Alejandro Balsa, Ricardo Blanco, and Jose L. Fernandez-Luna

Clinical Immunology

Synergistic Induction of Antigen-Specific CTL by Fusions of TLR-Stimulated Dendritic Cells and Heat-Stressed Tumor Cells
Shigeo Koido, Eiichi Hara, Sadamu Homma, Makoto Mitsunaga, Akitaka Takahara, Eijiro Nagasaki, Hidejiro Kawahara, Michiaki Watanabe, Yoichi Toyama, Satoru Yanagisawa, Susumu Kobayashi, Katsuhiro Yanaga, Kiyotaka Fujita, Jianlin Gong, and Hisao Tajiri

Elf-1 Binds to GGAA Elements on the FcRn Promoter and Represses Its Expression
Yuang-Taung Juang, Laarni Sumibcay, Mate Tolnay, Ying Wang, Vasileios C. Kyttaris, and George C. Tsokos

Defective Expression of Ras Guanyl Nucleotide-Releasing Protein 1 in a Subset of Patients with Systemic Lupus Erythematosus
Shinsuke Yasuda, Richard L. Stevens, Tomoko Terada, Masumi Takeda, Toko Hashimoto, Jun Fukae, Tetsuya Horita, Hiroshi Kato, Taiki Asumi, and Takao Koike

Achieving Donor-Specific Hyporesponsiveness Is Associated with FOXP3+ Regulatory T Cell Recruitment in Human Renal Allograft Infiltrates
Oriol Bestard, Josep M. Cruzado, Mariona Mestre, Anna Caldes, Jordi Bas, Marta Carrera, Joan Torras, Inés Rama, Francesc Moreo, Daniel Serón, and Josep M. Grinyó

4-1BB Is Superior to CD28 Costimulation for Generating CD8+ Cytotoxic Lymphocytes for Adoptive Immunotherapy
Hua Zhang, Kristen M. Snyder, Megan M. Suboki, Marcela V. Maus, Veena Kapoor, Carl H. June, and Crystal L. Mackall

Administration of a CD25-Directed Immunotoxin, LMB-2, to Patients with Metastatic Melanoma Induces a Selective Partial Reduction in Regulatory T Cells In Vivo
Daniel J. Powell, Jr., Aloisio Felipe-Silva, Maria J. Merino, Mojgan Ahmadzadeh, Tamika Allen, Catherine Levy, Donald E. White, Sharon Mavroukakis, Robert J. Kreitman, Steven A. Rosenberg, and Ira Pastan

Activation-Induced Cytidine Deaminase Expression in Follicular Dendritic Cell Networks and Interfollicular Large B Cells Supports Functionality of Ectopic Lymphoid Neogenesis in Autoimmune Sialoadenitis and MALT Lymphoma in Sjögren’s Syndrome
Michele Bombardieri, Francesca Barone, Frances Humby, Stephen Kelly, Mark McGurk, Peter Morgan, Stephen Challacombe, Salvatore De Vita, Guido Valesini, Jo Spencer, and Costantino Pitzalis

Autoantibodies in Canine Masticatory Muscle Myositis Recognize a Novel Myosin Binding Protein-C Family Member
Xiaohua Wu, Zhi-fang Li, Randolph Brooks, Elizabeth A. Komives, Justin W. Torpey, Eva Engevall, Steven L. Gonias, and G. Diane Shelton

Author Index
AAI Membership Application
AAI Trainee Membership Application