



179 (3)

J Immunol 2007; 179:1411-2022; ;
<http://www.jimmunol.org/content/179/3>

This information is current as
of November 16, 2018.

Why *The JI*? Submit online.

- **Rapid Reviews! 30 days*** from submission to initial decision
- **No Triage!** Every submission reviewed by practicing scientists
- **Fast Publication!** 4 weeks from acceptance to publication

**average*

Subscription Information about subscribing to *The Journal of Immunology* is online at:
<http://jimmunol.org/subscription>

Permissions Submit copyright permission requests at:
<http://www.aai.org/About/Publications/JI/copyright.html>

Email Alerts Receive free email-alerts when new articles cite this article. Sign up at:
<http://jimmunol.org/alerts>



1411 **IN THIS ISSUE****PILLARS OF IMMUNOLOGY**

- 1413 IL-2: More Than a T Cell Growth Factor
Joost J. Oppenheim

- 1415 Pillars Article: Functional and Morphologic Characterization of Human T Cells Continuously Grown In Vitro. *J. Immunol.* 1977. 119: 131–138.
Francis W. Ruscetti, Doris A. Morgan, and Robert C. Gallo

CUTTING EDGE

- 1423 Cutting Edge: Opposite Effects of IL-1 and IL-2 on the Regulation of IL-17⁺ T Cell Pool IL-1 Subverts IL-2-Mediated Suppression
Ilona Kryczek, Shuang Wei, Linhua Vatan, June Escara-Wilke, Wojciech Szeliga, Evan T. Keller, and Weiping Zou
- 1427 Cutting Edge: OX40 Inhibits TGF- β - and Antigen-Driven Conversion of Naive CD4 T Cells into CD25⁺Foxp3⁺ T cells
Takanori So and Michael Croft

CELLULAR IMMUNOLOGY AND IMMUNE REGULATION

- 1431 Lack of Reactive Oxygen Species Breaks T Cell Tolerance to Collagen Type II and Allows Development of Arthritis in Mice
Malin Hultqvist, Johan Bäcklund, Kristin Bauer, Kyra A. Gelderman, and Rikard Holmdahl
- 1438 Controls for Lung Dendritic Cell Maturation and Migration during Respiratory Viral Infection
Mitchell H. Grayson, Madeleine S. Ramos, Michelle M. Roblfing, Robert Kitchens, Howard D. Wang, Aaron Gould, Eugene Agapov, and Michael J. Holtzman
- 1449 TNF- α Drives Human CD14⁺ Monocytes to Differentiate into CD70⁺ Dendritic Cells Evoking Th1 and Th17 Responses
Sanju Iwamoto, Shin-ichi Iwai, Kazuko Tsujiyama, Chika Kurahashi, Kumiko Takeshita, Michio Naoe, Atsuko Masunaga, Yoshio Ogawa, Katsuji Oguchi, and Akira Miyazaki
- 1458 A Fusion Protein Consisting of IL-16 and the Encephalitogenic Peptide of Myelin Basic Protein Constitutes an Antigen-Specific Tolerogenic Vaccine That Inhibits Experimental Autoimmune Encephalomyelitis
Mark D. Mannie and Derek J. Abbott

On the cover: Confocal microscopy of murine mesenchymal stem cells isolated from C57BL/6 mice expressing the green fluorescent protein (GFP) transgene. The cells express GFP (green) in culture. Staining for actin (red) with a rhodamine-labeled Ab is shown as a reference. Staining of nuclei with DAPI is shown in blue. Gupta, N., X. Su, B. Popov, J. W. Lee, V. Serikov, and M. A. Matthay. 2007. Intrapulmonary delivery of bone marrow-derived mesenchymal stem cells improves survival and attenuates endotoxin-induced acute lung injury in mice. *J. Immunol.* 179: 1855–1863.

The Journal of Immunology (ISSN 0022-1767) is published twice each month by The American Association of Immunologists, Inc., 9650 Rockville Pike, Bethesda, MD 20814-3994. Subscription term: New subscriptions and renewals begin January 1 and expire one year later (see <http://www.jimmunol.org/subscriptions> for prices and details). A special rate is available to members of The American Association of Immunologists, Inc. (see <http://www.aai.org/membership>). Periodicals postage paid at Bethesda, MD 20814-3998, and at additional mailing offices. Country of origin U.S.A. Printed on acid-free recyclable paper. Postmaster: Send address changes to *The Journal of Immunology*, Subscription Department, Room L-3407A, 9650 Rockville Pike, Bethesda, MD 20814-3998. Copyright © 2007 by The American Association of Immunologists, Inc.

- 1466 Xenogenic β_2 -Microglobulin Substitution Alters NK Cell Function
Loralyn A. Benoit and Rusung Tan
- 1475 Molecular and Functional Characterization of IL-15 in Rainbow Trout *Oncorhynchus mykiss*: A Potent Inducer of IFN- γ Expression in Spleen Leukocytes
Tiehui Wang, Jason W. Holland, Allison Carrington, Jun Zou, and Christopher J. Secombes
- 1489 CD8⁺ Dendritic Cells Use LFA-1 to Capture MHC-Peptide Complexes from Exosomes In Vivo
Elodie Segura, Coralie Guérin, Nancy Hogg, Sebastian Amigorena, and Clotilde Théry
- 1497 Prostaglandin E₂ Is a Major Inhibitor of Dendritic Cell Maturation and Function in *Ixodes scapularis* Saliva
Anderson Sá-Nunes, André Bafica, David A. Lucas, Thomas P. Conrads, Timothy D. Veenstra, John F. Andersen, Thomas N. Mather, José M. C. Ribeiro, and Ivo M. B. Franciscetti
- 1506 Immunomodulatory Dendritic Cells Inhibit Th1 Responses and Arthritis via Different Mechanisms
Leonie M. van Duivenvoorde, Wanda G. H. Han, Aleida M. Bakker, Pascale Louis-Plence, Louis-Marie Charbonnier, Florence Apparailly, Ellen I. H. van der Voort, Christian Jorgensen, Tom W. J. Huizinga, and René E. M. Toes
- 1516 CD86 Regulates IgG₁ Production via a CD19-Dependent Mechanism
Nicholas W. Kin and Virginia M. Sanders
- 1524 Steady State Dendritic Cells Present Parenchymal Self-Antigen and Contribute to, but Are Not Essential for, Tolerization of Naive and Th1 Effector CD4 Cells
Adam T. Hagymasi, Aaron M. Slaiby, Marianne A. Mihalyo, Harry Z. Qui, David J. Zammit, Leo Lefrançois, and Adam J. Adler
- 1532 Listeriolysin O Expressed in a Bacterial Vaccine Suppresses CD4⁺CD25^{high} Regulatory T Cell Function In Vivo
Josianne Nitcheu-Tefit, Ming-Shen Dai, Rebecca J. Critchley-Thorne, Francisco Ramirez-Jimenez, Man Xu, Sophie Conchon, Nicolas Ferry, Hans J. Stauss, and Georges Vassaux
- 1542 Both Infiltrating Regulatory T Cells and Insufficient Antigen Presentation Are Involved in Long-Term Cardiac Xenograft Survival
Wenhao Chen, Jun Diao, Stanislaw M. Stepkowski, and Li Zhang
- 1549 Regulation of MHC Class II Expression and Antigen Processing in Murine and Human Mesenchymal Stromal Cells by IFN- γ , TGF- β , and Cell Density
Raphaëlle Romieu-Mourez, Moïra François, Marie-Noëlle Boivin, John Stagg, and Jacques Galipeau
- 1559 Spontaneous and Prostatic Steroid Binding Protein Peptide-Induced Autoimmune Prostatitis in the Nonobese Diabetic Mouse
Giuseppe Penna, Susana Amuchastegui, Chiara Cossetti, Francesca Aquilano, Roberto Mariani, Nadia Giarratana, Elena De Carli, Benedetta Fibbi, and Luciano Adorini
- 1568 Cross-Talk between T Cells and Innate Immune Cells Is Crucial for IFN- γ -Dependent Tumor Rejection
Zhiguang Li, Felicia Pradera, Thomas Kammertoens, Bing Li, Shubai Liu, and Zhibai Qin
- 1577 Sphingosine 1-Phosphate-Mediated Trafficking of Pathogenic Th2 and Mast Cells for the Control of Food Allergy
Yosuke Kurashima, Jun Kunisawa, Morio Higuchi, Masashi Gohda, Izumi Ishikawa, Naoko Takayama, Miki Shimizu, and Hiroshi Kiyono
- 1586 Ca²⁺ Signals in CD4⁺ T Cells during Early Contacts with Antigen-Bearing Dendritic Cells in Lymph Node
Sindy H. Wei, Olga Safrina, Ying Yu, Kym R. Garrod, Michael D. Cahalan, and Ian Parker
- 1595 Adult Human Fibroblasts Are Potent Immunoregulatory Cells and Functionally Equivalent to Mesenchymal Stem Cells
Muzlifah A. Haniffa, Xiao-Nong Wang, Udo Holtick, Michelle Rae, John D. Isaacs, Anne M. Dickinson, Catharien M. U. Hilkens, and Matthew P. Collin

- 1605 Noninvasive Intravital Imaging of Thymocyte Dynamics in Medaka
Jie Li, Norimasa Iwanami, Vu Quynh Hoa, Makoto Furutani-Seiki, and Yousuke Takahama
- 1616 LFA-1-Mediated T Cell Costimulation through Increased Localization of TCR/Class II Complexes to the Central Supramolecular Activation Cluster and Exclusion of CD45 from the Immunological Synapse
Beth Graf, Timothy Bushnell, and Jim Miller
- 1625 Detection of KIR3DS1 on the Cell Surface of Peripheral Blood NK Cells Facilitates Identification of a Novel Null Allele and Assessment of KIR3DS1 Expression during HIV-1 Infection
Véronique Pascal, Eriko Yamada, Maureen P. Martin, Galit Alter, Marcus Altfeld, Julia A. Metcalf, Michael W. Baseler, Joseph W. Adelsberger, Mary Carrington, Stephen K. Anderson, and Daniel W. McVicar
- 1634 Modulatory Effects of 1,25-Dihydroxyvitamin D₃ on Human B Cell Differentiation
Sheng Chen, Gary P. Sims, Xiao Xiang Chen, Yue Ying Gu, Shunle Chen, and Peter E. Lipsky
- 1648 Respiratory Syncytial Virus Synergizes with Th2 Cytokines to Induce Optimal Levels of TARC/CCL17
Martha M. Monick, Linda S. Powers, Ihab Hassan, Dayna Groskreutz, Timur O. Yarovinsky, Christopher W. Barrett, Elaine M. Castilow, Delia Tifrea, Steven M. Varga, and Gary W. Hunninghake
- 1659 Ig Heavy Chain Promotes Mature B Cell Survival in the Absence of Light Chain
Pedro Geraldes, Michelle Rebrovich, Kai Herrmann, Jamie Wong, Hans-Martin Jäck, Matthias Wabl, and Marilia Cascalho
- 1669 IFN- γ and Fas Ligand Are Required for Graft-versus-Tumor Activity against Renal Cell Carcinoma in the Absence of Lethal Graft-versus-Host Disease
Teresa Ramirez-Montagut, Andrew Chow, Adam A. Kochman, Odette M. Smith, David Suh, Hamad Sindhi, Sydney Lu, Chiara Borsotti, Jeremy Grubin, Neel Patel, Theis H. Terwey, Theo D. Kim, Glenn Heller, George F. Murphy, Chen Liu, Onder Alpdogan, and Marcel R. M. van den Brink
- 1681 Functional Role for I κ BNS in T Cell Cytokine Regulation As Revealed by Targeted Gene Disruption
Maki Touma, Valeria Antonini, Manoj Kumar, Stephanie L. Osborn, April M. Bobenchik, Derin B. Keskin, John E. Connolly, Michael J. Grusby, Ellis L. Reinherz, and Linda K. Clayton
- 1693 Eosinophils from Lineage-Ablated Δ dblGATA Bone Marrow Progenitors: The dblGATA Enhancer in the Promoter of GATA-1 Is Not Essential for Differentiation Ex Vivo
Kimberly D. Dyer, Meggan Czapiga, Barbara Foster, Paul S. Foster, Elizabeth M. Kang, Courtney M. Lappas, Jennifer M. Moser, Nora Naumann, Caroline M. Percopo, Steven J. Siegel, Jonathan M. Swartz, SukSee Ting-De Ravin, and Helene F. Rosenberg
- 1700 Neonatal B Cells Suppress Innate Toll-Like Receptor Immune Responses and Modulate Alloimmunity
Wendy E. Walker and Daniel R. Goldstein
- 1711 Triggering of Dendritic Cell Responses after Exposure to Activated, but Not Resting, Apoptotic PBMCs
Ulrika Johansson, Lilian Walther-Jallow, Anna Smed-Sörensen, and Anna-Lena Spetz
- 1721 Myeloid and Plasmacytoid Dendritic Cells Are Susceptible to Recombinant Adenovirus Vectors and Stimulate Polyfunctional Memory T Cell Responses
Karin Loré, William C. Adams, Menzo J. E. Havenga, Melissa L. Precopio, Lennart Holterman, Jaap Goudsmit, and Richard A. Koup

MOLECULAR AND STRUCTURAL IMMUNOLOGY

- 1730 Genetic Engineering of the Major Timothy Grass Pollen Allergen, Phl p 6, to Reduce Allergenic Activity and Preserve Immunogenicity
Susanne Vrtala, Margarete Focke, Jolanta Kopec, Petra Verdino, Arnulf Hartl, Wolfgang R. Sperr, Alexander A. Fedorov, Tanja Ball, Steve Almo, Peter Valent, Josef Thalhamer, Walter Keller, and Rudolf Valenta
- 1740 Coordinated Involvement of Mast Cells and T Cells in Allergic Mucosal Inflammation: Critical Role of the CC Chemokine Ligand 1:CCR8 Axis
Jose-Angel Gonzalo, Yubin Qiu, Jose M. Lora, Amal Al-Garawi, Jean-Luc Villeval, Joshua A. Boyce, Carlos Martínez-A, Gabriel Marquez, Iñigo Goya, Qutayba Hamid, Christopher C. Fraser, Dominic Picarella, Javier Cote-Sierra, Martin R. Hodges, Jose-Carlos Gutierrez-Ramos, Roland Kolbeck, and Anthony J. Coyle

- 1751 NF- κ B p50/p65 Affects the Frequency of *Ly49* Gene Expression by NK Cells
Véronique Pascal, Neera R. Nathan, Estefania Claudio, Ulrich Siebenlist, and Stephen K. Anderson
- 1760 *OX40* Gene Expression Is Up-Regulated by Chromatin Remodeling in Its Promoter Region Containing Sp1/Sp3, YY1, and NF- κ B Binding Sites
Yukiko Tone, Yoshitsugu Kojima, Keiji Furuuchi, Maya Brady, Yumi Yashiro-Ohtani, Mark L. Tykocinski, and Masahide Tone
- 1768 The Related Adaptors, Adaptor in Lymphocytes of Unknown Function X and Rlk/Itk-Binding Protein, Have Nonredundant Functions in Lymphocytes
Claire E. Perchonock, Anthony G. Pajeroski, Chau Nguyen, Michael J. Shapiro, and Virginia Smith Shapiro
- 1776 Despite Inhibition of Nuclear Localization of NF- κ B p65, c-Rel, and RelB, 17- β Estradiol Up-Regulates NF- κ B Signaling in Mouse Splenocytes: The Potential Role of Bcl-3
Rujuan Dai, Rebecca A. Phillips, and S. Ansar Ahmed

IMMUNOGENETICS

- 1784 A Natural Hypomorphic Variant of the Apoptosis Regulator Gimap4/IAN1
Christine Carter, Carine Dion, Silke Schnell, W. John Coadwell, Margaret Graham, Lucy Hepburn, Geoffrey Morgan, Amanda Hutchings, John C. Pascall, Heinz Jacobs, J. Ross Miller, and Geoffrey W. Butcher

HOST DEFENSE

- 1796 Early Innate Immune Responses to Sin Nombre Hantavirus Occur Independently of IFN Regulatory Factor 3, Characterized Pattern Recognition Receptors, and Viral Entry
Joseph B. Prescott, Pamela R. Hall, Virginie S. Bondu-Hawkins, Chunyan Ye, and Brian Hjelle
- 1803 Efficient Cross-Presentation by Heat Shock Protein 90-Peptide Complex-Loaded Dendritic Cells via an Endosomal Pathway
Takehiro Kurotaki, Yasuaki Tamura, Gosei Ueda, Jun Oura, Goro Kutomi, Yoshihiko Hirohashi, Hiroeki Sahara, Toshihiko Torigoe, Hiroyoshi Hiratsuka, Hajime Sunakawa, Koichi Hirata, and Noriyuki Sato
- 1814 The p47 GTPases *Iigp2* and *Irgb10* Regulate Innate Immunity and Inflammation to Murine *Chlamydia psittaci* Infection
Isao Miyairi, Venkat R. R. Arva Tatireddigari, Olaimatu S. Mahdi, Lorne A. Rose, Robert J. Belland, Lu Lu, Robert W. Williams, and Gerald I. Byrne
- 1825 Inhibition of Phagosome Maturation by Mycobacteria Does Not Interfere with Presentation of Mycobacterial Antigens by MHC Molecules
Laleh Majlessi, Benoit Combaluzier, Imke Albrecht, Jessica E. Garcia, Clémence Nouze, Jean Pieters, and Claude Leclerc

INFLAMMATION

- 1834 The Intrinsic Apoptotic Pathway Is Required for Lipopolysaccharide-Induced Lung Endothelial Cell Death
Helena L. Wang, I. Ozkan Akinci, Christina M. Baker, Daniela Urich, Amy Bellmeyer, Manu Jain, Navdeep S. Chandel, Gökhan M. Mutlu, and G. R. Scott Budinger
- 1842 *Streptococcus suis* Serotype 2, an Important Swine and Human Pathogen, Induces Strong Systemic and Cerebral Inflammatory Responses in a Mouse Model of Infection
María C. Domínguez-Punaro, Mariela Segura, Marie-Michèle Plante, Sonia Lacouture, Serge Rivest, and Marcelo Gottschalk
- 1855 Intrapulmonary Delivery of Bone Marrow-Derived Mesenchymal Stem Cells Improves Survival and Attenuates Endotoxin-Induced Acute Lung Injury in Mice
Naveen Gupta, Xiao Su, Boris Popov, Jae Woo Lee, Vladimir Serikov, and Michael A. Matthay

- 1864 Inhalation of Toluene Diisocyanate Vapor Induces Allergic Rhinitis in Mice
Victor J. Johnson, Berran Yucesoy, Jeff S. Reynolds, Kara Fluharty, Wei Wang, Diana Richardson, and Michael I. Luster
- 1872 Dominant-Negative Inhibitors of Soluble TNF Attenuate Experimental Arthritis without Suppressing Innate Immunity to Infection
Jonathan Zalevsky, Thomas Secher, Sergei A. Ezhevsky, Laure Janot, Paul M. Steed, Christopher O'Brien, Araz Eivazi, James Kung, Duc-Hanh T. Nguyen, Stephen K. Doberstein, François Erard, Bernhard Ryffel, and David E. Szymkowski
- 1884 Adenosine Deamination Sustains Dendritic Cell Activation in Inflammation
Melanie D. Desrosiers, Katherine M. Cembrola, Michael J. Fakir, Leslie A. Stephens, Fatimina M. Jama, Afshin Shameli, Wajahat Z. Mehal, Pere Santamaria, and Yan Shi
- 1893 FOXP3 Regulates TLR10 Expression in Human T Regulatory Cells
Michael P. Bell, Phyllis A. Svingen, Meher K. Rahman, Yuning Xiong, and William A. Faubion, Jr.
- 1901 Multiple Chemokine Receptors, Including CCR6 and CXCR3, Regulate Antigen-Induced T Cell Homing to the Human Asthmatic Airway
Seddon Y. Thomas, Aleena Banerji, Benjamin D. Medoff, Craig M. Lilly, and Andrew D. Luster
- 1913 Nonclassical IL-1 β Secretion Stimulated by P2X7 Receptors Is Dependent on Inflammasome Activation and Correlated with Exosome Release in Murine Macrophages
Yan Qu, Luigi Franchi, Gabriel Nunez, and George R. Dubyak
- 1926 Targeted Deletion of *MKK4* Gene Potentiates TNF-Induced Apoptosis through the Down-Regulation of NF- κ B Activation and NF- κ B-Regulated Antiapoptotic Gene Products
Gautam Sethi, Kwang Seok Ahn, Dianren Xia, Jonathan M. Kurie, and Bharat B. Aggarwal
- 1934 Identification of Pur α as a New Hypoxia Response Factor Responsible for Coordinated Induction of the β_2 Integrin Family
Tianqing Kong, Melanie Scully, C. Simon Shelley, and Sean P. Colgan
- 1942 IFN- γ -Mediated Survival Enables Human Neutrophils to Produce MCP-1/CCL2 in Response to Activation by TLR Ligands
Teizo Yoshimura and Munehisa Takahashi
- 1950 Extracellular Acidosis Triggers the Maturation of Human Dendritic Cells and the Production of IL-12
Diego Martínez, Mónica Vermeulen, Erika von Eeuw, Juan Sabatté, Julian Maggini, Ana Ceballos, Analía Trevani, Karen Nahmod, Gabriela Salamone, Marcela Barrio, Mirta Giordano, Sebastian Amigorena, and Jorge Geffner

CLINICAL IMMUNOLOGY

- 1960 Targeting the Primary Tumor to Generate CTL for the Effective Eradication of Spontaneous Metastases
Ping Yu, Youjin Lee, Yang Wang, Xiaojuan Liu, Sogyong Auh, Thomas F. Gajewski, Hans Schreiber, Zhaoyang You, Campbell Kaynor, Xinzhong Wang, and Yang-Xin Fu
- 1969 Exosomes with Immune Modulatory Features Are Present in Human Breast Milk
Charlotte Admyre, Sara M. Johansson, Khaleda Rahman Qazi, Jan-Jonas Filén, Riitta Lahesmaa, Mikael Norman, Etienne P. A. Neve, Annika Scheynius, and Susanne Gabrielsson
- 1979 Programmed Death 1 Expression on HIV-Specific CD4⁺ T Cells Is Driven by Viral Replication and Associated with T Cell Dysfunction
Michelle D'Souza, Andrew P. Fontenot, Doug G. Mack, Catherine Lozupone, Stephanie Dillon, Amie Meditz, Cara C. Wilson, Elizabeth Connick, and Brent E. Palmer
- 1988 Human CD8⁺ T Cell Memory Generation in Puumala Hantavirus Infection Occurs after the Acute Phase and Is Associated with Boosting of EBV-Specific CD8⁺ Memory T Cells
Tamara Tuuminen, Eliisa Kekäläinen, Satu Mäkelä, Ilpo Ala-Houhala, Francis A. Ennis, Klaus Hedman, Jukka Mustonen, Antti Vaheri, and T. Petteri Arstila
- 1996 CCR4-Expressing T Cell Tumors Can Be Specifically Controlled via Delivery of Toxins to Chemokine Receptors
Dolgor Baatar, Purevdorj Olkhanud, Dianne Newton, Kenya Sumitomo, and Arya Biragyn

- 2005 Identification and Characterization of ErbB-3-Binding Protein-1 as a Target for Immunotherapy
Saskia J. A. M. Santegoets, Marco W. J. Schreurs, Anneke W. Reurs, Jelle J. Lindenberg, Esther W. M. Kueter, Alfons J. M. van den Eertwegh, Erik Hooijberg, Ricardo J. Brandwijk, Simon E. Hufton, Hennie R. Hoogenboom, Rik J. Scheper, Veerle A. Somers, and Tanja D. de Gruijl
- 2013 Molecular Analysis of Alloreactive CTL Post-Hemopoietic Stem Cell Transplantation
Christine L. O'Keefe, Lukasz Gondek, Randall Davis, Elizabeth Kuczkowski, Ronald M. Sobecks, Alexander Rodriguez, Yadira Narvaez, Zachariah McIver, Ralph Tuthill, Mary Laughlin, Brian Bolwell, and Jaroslaw P. Maciejewski
- 2023 Author Index
- 2027 AAI Membership Application
- 2028 AAI Trainee Membership Application