

LEAD THE RACE

Comprehensive **flow cytometry** solutions designed to accelerate your work



Learn More

MILLIPORE
SIGMA



The Journal of
Immunology

195 (6)

J Immunol 2015; 195:2505-2918; ;
<http://www.jimmunol.org/content/195/6>

This information is current as
of January 22, 2018.

Why *The JI*?

- **Rapid Reviews! 30 days*** from submission to initial decision
- **No Triage!** Every submission reviewed by practicing scientists
- **Speedy 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>

The Journal of Immunology is published twice each month by
The American Association of Immunologists, Inc.,
1451 Rockville Pike, Suite 650, Rockville, MD 20852
All rights reserved.
Print ISSN: 0022-1767 Online ISSN: 1550-6606.



IN THIS ISSUE

- 2505 **Diverse NKTs Love *Listeria*** See article p. 2540
B Cells Buddy Up in Lupus See article p. 2571
Mitochondria Misfire in Old Age See article p. 2624
RANKing mTEC Activity See article p. 2675

BRIEF REVIEWS

- 2507 Control of Regulatory T Cell Migration, Function, and Homeostasis
Daniel J. Campbell

CUTTING EDGE

- 2515 Cutting Edge: miR-17-92 Is Required for Both CD4 Th1 and T Follicular Helper Cell Responses during Viral Infection
Tuoqi Wu, Andreas Wieland, Judong Lee, J. Scott Hale, Jin-Hwan Han, Xiaojin Xu, and Rafi Ahmed
- 2520 Cutting Edge: AhR Is a Molecular Target of Calcitriol in Human T Cells
Mariko Takami, Kotaro Fujimaki, Michael I. Nishimura, and Makio Iwashima
- 2524 Cutting Edge: Hematopoietic Stem Cell Expansion and Common Lymphoid Progenitor Depletion Require Hematopoietic-Derived, Cell-Autonomous TLR4 in a Model of Chronic Endotoxin
Ailing Liu, Yujuan Wang, Ying Ding, Ineavelly Baez, Kimberly J. Payne, and Lisa Borghesi

ALLERGY AND OTHER HYPERSENSITIVITIES

- 2529 IL-3 Maintains Activation of the p90S6K/RPS6 Pathway and Increases Translation in Human Eosinophils
Stephane Esnault, Elizabeth A. B. Kelly, Zhong-Jian Shen, Mats W. Johansson, James S. Malter, and Nizar N. Jarjour

On the cover: Picosirius Red staining of kidney sections from CX3CR1^{gfp/gfp} mice treated with unilateral ureteral obstruction. In bright-field microscopy, collagen is red on a pale yellow background. Picosirius Red staining exhibited deposition of collagen (red) in the renal interstitium of CX3CR1^{gfp/gfp} mice. Peng, X., J. Zhang, Z. Xiao, Y. Dong, and J. Du. 2015. CX3CL1–CX3CR1 interaction increases the population of Ly6C[−]CX3CR1^{hi} macrophages contributing to unilateral ureteral obstruction–induced fibrosis. *J. Immunol.* 195: 2797–2805.

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, Phone: 301-634-7197, Fax: 301-634-7829. Subscription terms: 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>). The American Association of Immunologists, Inc., is not responsible for undeliverable issues. Replacement issues can be obtained, if available, at the regular price of single issues (see http://www.jimmunol.org/pdf/single_issue_purchase.pdf). Reprints of individual articles are available only from authors. Periodicals postage paid at Bethesda, MD 20814-3994, and at additional mailing offices. Country of origin U.S.A. Printed on acid-free recyclable paper. Postmaster: Send address changes 60 days in advance to *The Journal of Immunology*, Subscription Department, 9650 Rockville Pike, Bethesda, MD 20814-3994. Copyright © 2015 by The American Association of Immunologists, Inc.

ANTIGEN RECOGNITION AND RESPONSES

- 2540 Identification of a Potent Microbial Lipid Antigen for Diverse NKT Cells
Benjamin J. Wolf, Raju V. V. Tatituri, Catarina F. Almeida, Jérôme Le Nours, Veemal Bhowruth, Darryl Johnson, Adam P. Uldrich, Fong-Fu Hsu, Manfred Brigl, Gurdyal S. Besra, Jamie Rossjohn, Dale I. Godfrey, and Michael B. Brenner

AUTOIMMUNITY

- 2552 Th Cell Diversity in Experimental Autoimmune Encephalomyelitis and Multiple Sclerosis
Kevin S. Carbajal, Yevgeniya Mironova, Justin T. Ulrich-Lewis, Deven Kulkarni, Heather M. Grifka-Walk, Amanda K. Huber, Peter Shrager, Roman J. Giger, and Benjamin M. Segal
- 2560 Loss of Phosphatase and Tensin Homolog in APCs Impedes Th17-Mediated Autoimmune Encephalomyelitis
Emine Sabin, Julia S. Brunner, Julia B. Kral, Mario Kuttke, Leslie Hanzl, Hannes Datler, Hannah Paar, Nick Neuwinger, Victoria Saferding, Elisabeth Zinser, Angela Halfmann, Klara Soukup, Eva Hainzl, Tobias Lohmeyer, Birgit Niederreiter, Thomas Haider, Alexander M. Dohnal, Gerhard Krönke, Stephan Blüml, and Gernot Schabbauer
- 2571 B Cell–Specific MHC Class II Deletion Reveals Multiple Nonredundant Roles for B Cell Antigen Presentation in Murine Lupus
Josephine R. Giles, Michael Kashgarian, Pandelakis A. Koni, and Mark J. Shlomchik

CLINICAL AND HUMAN IMMUNOLOGY

- 2580 Defective NK Cells in Acute Myeloid Leukemia Patients at Diagnosis Are Associated with Blast Transcriptional Signatures of Immune Evasion
Zena Khaznadar, Nicolas Boissel, Sophie Agaugué, Guylaine Henry, Meyling Cheok, Marguerite Vignon, Daniela Geromin, Jean-Michel Cayuela, Sylvie Castaigne, Cécile Pautas, Emmanuel Raffoux, Joel Lachuer, François Sigaux, Claude Preudhomme, Hervé Dombret, Nicolas Dulphy, and Antoine Toubert
- 2591 IL-17A Contributes to the Pathogenesis of Endometriosis by Triggering Proinflammatory Cytokines and Angiogenic Growth Factors
Soo Hyun Ahn, Andrew K. Edwards, Sukhbir S. Singh, Steven L. Young, Bruce A. Lessey, and Chandrakant Tayade
- 2601 IRF4 Is a Critical Gene in Retinoic Acid–Mediated Plasma Cell Formation and Is Deregulated in Common Variable Immunodeficiency–Derived B Cells
Randi L. Indrevær, Jan Ø. Moskaug, Ingvild Paur, Siv K. Bøhn, Silje F. Jørgensen, Rune Blomhoff, Pål Aukrust, Børre Fevang, and Heidi K. Blomhoff

IMMUNE REGULATION

- 2612 Cellular FLIP Inhibits Myeloid Cell Activation by Suppressing Selective Innate Signaling
Yu-Jung Wu, Yung-Hsuan Wu, Shu-Ting Mo, Huey-Wen Hsiao, You-Wen He, and Ming-Zong Lai
- 2624 Loss of Phagocytic and Antigen Cross-Presenting Capacity in Aging Dendritic Cells Is Associated with Mitochondrial Dysfunction
Claire A. Chougnnet, Robert I. Thacker, Hesham M. Shehata, Cassandra M. Hennies, Maria A. Lehn, Celine S. Lages, and Edith M. Janssen
- 2633 Transmembrane TNF–TNFR2 Impairs Th17 Differentiation by Promoting *Il2* Expression
Patrick G. Miller, Michael B. Bonn, and Susan C. McKerns
- 2648 Hepatic Stellate Cells Inhibit T Cells through Active TGF- β 1 from a Cell Surface–Bound Latent TGF- β 1/GARP Complex
Yan Li, Byung-Gyu Kim, Shiguang Qian, John J. Letterio, John J. Fung, Lina Lu, and Feng Lin
- 2657 1,25(OH) $_2$ D $_3$ Promotes the Efficacy of CD28 Costimulation Blockade by Abatacept
David H. Gardner, Louisa E. Jeffery, Blagoje Soskic, Zoe Briggs, Tie Zheng Hou, Karim Raza, and David M. Sansom

IMMUNE SYSTEM DEVELOPMENT

- 2666 Inhibition of B Lymphopoiesis by Adipocytes and IL-1–Producing Myeloid-Derived Suppressor Cells
Domenick E. Kennedy and Katherine L. Knight

- 2675 Osteoprotegerin-Mediated Homeostasis of Rank⁺ Thymic Epithelial Cells Does Not Limit Foxp3⁺ Regulatory T Cell Development
Nicholas I. McCarthy, Jennifer E. Cowan, Kyoko Nakamura, Andrea Bacon, Song Baik, Andrea J. White, Sonia M. Parnell, Eric J. Jenkinson, William E. Jenkinson, and Graham Anderson
- 2683 Transcription Factor Repertoire of Homeostatic Eosinophilopoiesis
Carine Bouffi, Andrey V. Kartashov, Kaila L. Schollaert, Xiaoting Chen, W. Clark Bacon, Matthew T. Weirauch, Artem Barski, and Patricia C. Fulkerson
- 2696 Multiple Hecidins in a Teleost Fish, *Dicentrarchus labrax*: Different Hecidins for Different Roles
João V. Neves, Carolina Caldas, Inês Vieira, Miguel F. Ramos, and Pedro N. S. Rodrigues

IMMUNOTHERAPY AND VACCINES

- 2710 Colocalization of a CD1d-Binding Glycolipid with a Radiation-Attenuated Sporozoite Vaccine in Lymph Node-Resident Dendritic Cells for a Robust Adjuvant Effect
Xiangming Li, Akira Kawamura, Chasity D. Andrews, Jessica L. Miller, Douglass Wu, Tiffany Tsao, Min Zhang, Deena Oren, Neal N. Padte, Steven A. Porcelli, Chi-Huey Wong, Stefan H. I. Kappe, David D. Ho, and Moriya Tsuji

INFECTIOUS DISEASE AND HOST RESPONSE

- 2722 Ubiquitination as a Mechanism To Transport Soluble Mycobacterial and Eukaryotic Proteins to Exosomes
Victoria L. Smith, Liam Jackson, and Jeffrey S. Schorey
- 2731 Antimony-Resistant *Leishmania donovani* Exploits miR-466i To Deactivate Host MyD88 for Regulating IL-10/IL-12 Levels during Early Hours of Infection
Budhaditya Mukherjee, Joydeep Paul, Sandip Mukherjee, Rupkatha Mukhopadhyay, Shantanabha Das, Kshudiram Naskar, Shyam Sundar, Jean-Claude Dujardin, Bhaskar Saha, and Syamal Roy
- 2743 Endothelial Cell Sensitization by Death Receptor Fractions of an Anti-Dengue Nonstructural Protein 1 Antibody Induced Plasma Leakage, Coagulopathy, and Mortality in Mice
Der-Shan Sun, Ying-Chen Chang, Te-Sheng Lien, Chuan-Chuen King, Yung-Luen Shih, Hsuan-Shun Huang, Teng-Yi Wang, Chen-Ru Li, Chin-Cheng Lee, Ping-Ning Hsu, and Hsin-Hou Chang
- 2754 Impact of *Toxoplasma gondii* on Dendritic Cell Subset Function in the Intestinal Mucosa
Sara B. Cohen and Eric Y. Denkers
- 2763 Heme Oxygenase-1 Regulation of Matrix Metalloproteinase-1 Expression Underlies Distinct Disease Profiles in Tuberculosis
Bruno B. Andrade, Nathella Pavan Kumar, Eduardo P. Amaral, Nicolas Riteau, Katrin D. Mayer-Barber, Kevin W. Tosh, Nolan Maier, Elisabete L. Conceição, Andre Kubler, Rathinam Sridhar, Vaithilingam V. Banurekha, Mohideen S. Jawahar, Theolis Barbosa, Vincent C. Manganiello, Joel Moss, Joseph R. Fontana, Beatriz E. Marciano, Elizabeth P. Sampaio, Kenneth N. Olivier, Steven M. Holland, Sharon H. Jackson, Mahtab Moayeri, Stephen Leppla, Irini Sereti, Daniel L. Barber, Thomas B. Nutman, Subash Babu, and Alan Sher

INNATE IMMUNITY AND INFLAMMATION

- 2774 The Novel Receptor C5aR2 Is Required for C5a-Mediated Human Mast Cell Adhesion, Migration, and Proinflammatory Mediator Production
Priyanka Pundir, Clayton A. MacDonald, and Marianna Kulka
- 2788 CXCL9 Regulates TGF- β 1-Induced Epithelial to Mesenchymal Transition in Human Alveolar Epithelial Cells
Sarah L. O'Beirne, Sinead M. Walsh, Aurélie Fabre, Carlota Reviriego, Julie C. Worrell, Ian P. Counihan, Robert V. Lumsden, Jennifer Cramton-Barnes, John A. Belperio, Seamas C. Donnelly, Denise Boylan, Joëlle Marchal-Sommé, Rosemary Kane, and Michael P. Keane
- 2797 CX3CL1-CX3CR1 Interaction Increases the Population of Ly6C⁻CX3CR1^{hi} Macrophages Contributing to Unilateral Ureteral Obstruction-Induced Fibrosis
Xiaogang Peng, Jing Zhang, Zhicheng Xiao, Yanjun Dong, and Jie Du
- 2806 MicroRNA-15/16 Antagonizes *Myb* To Control NK Cell Maturation
Ryan P. Sullivan, Jeffrey W. Leong, Stephanie E. Schneider, Aaron R. Ireland, Melissa M. Berrien-Elliott, Anvita Singh, Timothy Schappe, Brea A. Jewell, Veronika Sexl, and Todd A. Fehniger

- 2818 Priming of Human Resting NK Cells by Autologous M1 Macrophages via the Engagement of IL-1 β , IFN- β , and IL-15 Pathways
Irene Mattiola, Matthieu Pesant, Paolo F. Tentorio, Martina Molgora, Emanuela Marcenaro, Enrico Lugli, Massimo Locati, and Domenico Mavilio
- 2829 Stimulation of the RIG-I/MAVS Pathway by Polyinosinic:Polycytidylic Acid Upregulates IFN- β in Airway Epithelial Cells with Minimal Costimulation of IL-8
Nurlan Dauletbaev, Maria Cammisano, Kasey Herscovitch, and Larry C. Lands

MOLECULAR AND STRUCTURAL IMMUNOLOGY

- 2842 Crystal Structure of Insulin-Regulated Aminopeptidase with Bound Substrate Analogue Provides Insight on Antigenic Epitope Precursor Recognition and Processing
Anastasia Mpakali, Emmanuel Saridakis, Karl Harlos, Yuguang Zhao, Athanasios Papakyriakou, Paraskevi Kokkala, Dimitris Georgiadis, and Efstratios Stratikos
- 2852 Lipoxin A₄ Attenuates Constitutive and TGF- β 1-Dependent Profibrotic Activity in Human Lung Myofibroblasts
Katy M. Roach, Carol A. Feghali-Bostwick, Yassine Amrani, and Peter Bradding
- 2861 DNA Methylation Regulates the Differential Expression of CX3CR1 on Human IL-7R α ^{low} and IL-7R α ^{high} Effector Memory CD8⁺ T Cells with Distinct Migratory Capacities to the Fractalkine
Min Sun Shin, Sungyong You, Youna Kang, Naeun Lee, Seung-Ah Yoo, Kieyoung Park, Ki Soo Kang, Sang Hyun Kim, Subhasis Mohanty, Albert C. Shaw, Ruth R. Montgomery, Daehee Hwang, and Insoo Kang
- 2870 Parafibromin Is a Component of IFN- γ -Triggered Signaling Pathways That Facilitates JAK1/2-Mediated Tyrosine Phosphorylation of STAT1
Jin Wei, Huan Lian, Bo Zhong, and Hong-Bing Shu
- 2879 MAZR and Runx Factors Synergistically Repress ThPOK during CD8⁺ T Cell Lineage Development
Shinya Sakaguchi, Daniela Hainberger, Caroline Tizian, Hirokazu Tanaka, Tsukasa Okuda, Ichiro Taniuchi, and Wilfried Ellmeier

MUCOSAL IMMUNOLOGY

- 2888 MyD88 Signaling Regulates Steady-State Migration of Intestinal CD103⁺ Dendritic Cells Independently of TNF- α and the Gut Microbiota
Karin Hägerbrand, Jessica Westlund, Ulf Yrlid, William Agace, and Bengt Johansson-Lindbom
- 2900 Role of B Cells in Mucosal Vaccine-Induced Protective CD8⁺ T Cell Immunity against Pulmonary Tuberculosis
Amandeep K. Khera, Sam Afekhami, Rocky Lai, Mangalakumari Jeyanathan, Anna Zganiacz, Talveer Mandur, Joni Hammill, Daniela Damjanovic, and Zhou Xing

TUMOR IMMUNOLOGY

- 2908 Modulation of the IL-6 Receptor α Underlies GLI2-Mediated Regulation of Ig Secretion in Waldenström Macroglobulinemia Cells
David A. Jackson, Timothy D. Smith, Nansalmaa Amarsaikhan, Weiguo Han, Matthew S. Neil, Shannon K. Boi, Anne M. Vrabel, Ezequiel J. Tolosa, Luciana L. Almada, Martin E. Fernandez-Zapico, and Sherine F. Elsawa

CORRECTIONS

- 2917 Correction: SP-A Preserves Airway Homeostasis during *Mycoplasma pneumoniae* Infection in Mice
Julie G. Ledford, Hisatsugu Goto, Erin N. Potts, Simone Degan, Hong Wei Chu, Dennis R. Voelker, Mary E. Sunday, George J. Cianciolo, William M. Foster, Monica Kraft, and Jo Rae Wright

- 2919 AUTHOR INDEX