



## Inflammasome Reporter Cells

All you have to do is ASC

InvivoGen



187 (10)

*J Immunol* 2011; 187:4925-5462; ;  
<http://www.jimmunol.org/content/187/10>

This information is current as  
of June 24, 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>

*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.



4925 **IN THIS ISSUE**

**BRIEF REVIEWS**

- 4927 **Serglycin: A Structural and Functional Chameleon with Wide Impact on Immune Cells**  
*Svein O. Kolset and Gunnar Pejler*

**CELLULAR IMMUNOLOGY AND IMMUNE REGULATION**

- 4935 **A Novel Combination Immunotherapy for Cancer by IL-13R $\alpha$ 2–Targeted DNA Vaccine and Immunotoxin in Murine Tumor Models**  
*Hideyuki Nakashima, Masaki Terabe, Jay A. Berzofsky, Syed R. Husain, and Raj K. Puri*
- 4947 **A Mimic of Viral Double-Stranded RNA Triggers Fulminant Type 1 Diabetes-like Syndrome in Regulatory T Cell-Deficient Autoimmune Diabetic Mouse**  
*Ai Tada, Akira Shimada, Taketo Yamada, Yoichi Oikawa, Yoshifumi Yamada, Yoshiaki Okubo, Junichiro Irie, Jeffrey A. Bluestone, and Hiroshi Itoh*
- 4954 **Induction of Immunogenic Apoptosis by Blockade of Epidermal Growth Factor Receptor Activation with a Specific Antibody**  
*Greta Garrido, Ailem Rabasa, Belinda Sánchez, María Victoria López, Rances Blanco, Armando López, Diana Rosa Hernández, Rolando Pérez, and Luis Enrique Fernández*
- 4967 **Pathogen-Induced Inflammatory Environment Controls Effector and Memory CD8<sup>+</sup> T Cell Differentiation**  
*Joshua J. Obar, Evan R. Jellison, Brian S. Sheridan, David A. Blair, Quynh-Mai Pham, Julianne M. Zickovich, and Leo Lefrançois*
- 4979 **Regulatory Role of V $\gamma$ 1  $\gamma\delta$  T Cells in Tumor Immunity through IL-4 Production**  
*Jianlei Hao, Siyuan Dong, Siyuan Xia, Weifeng He, Hao Jia, Song Zhang, Jun Wei, Rebecca L. O'Brien, Willi K. Born, Zhenzhou Wu, Puyue Wang, Jihong Han, Zhangyong Hong, Liqing Zhao, and Zhinan Yin*

On the cover: Mutation of IFN- $\gamma$  in the *mdx* mouse model of Duchenne muscular dystrophy shifts macrophages toward an M2 phenotype and reduces damage, increases regeneration, and improves function of muscle. The image shows a section of IFN- $\gamma$  null *mdx* muscle where M2 macrophages (red) are enriched in endomysium between regenerative muscle fibers. Villalta, S. A., B. Deng, C. Rinaldi, M. Wehling-Henricks, and J. G. Tidball. 2011. IFN- $\gamma$  promotes muscle damage in the *mdx* mouse model of Duchenne muscular dystrophy by suppressing M2 macrophage activation and inhibiting muscle cell proliferation. *J. Immunol.* 187: 5419–5428.

*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](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 © 2011 by The American Association of Immunologists, Inc.

- 4987 The Plasticity of Regulatory T Cell Function  
*Meenu R. Pillai, Lauren W. Collison, Xiaohua Wang, David Finkelstein, Jerold E. Rehg, Kelli Boyd, Andrea L. Szymczak-Workman, Teresa Doggett, Thomas S. Griffith, Thomas A. Ferguson, and Dario A. A. Vignali*
- 4998 Autoreactive Tbet-Positive CD4 T Cells Develop Independent of Classic Th1 Cytokine Signaling during Experimental Autoimmune Encephalomyelitis  
*Wen-I Yeh, Ian L. McWilliams, and Laurie E. Harrington*
- 5007 V $\gamma$ 4  $\gamma\delta$  T Cell-Derived IL-17A Negatively Regulates NKT Cell Function in Con A-Induced Fulminant Hepatitis  
*Na Zhao, Jianlei Hao, Yuanyuan Ni, Wei Luo, Ruifang Liang, Guangchao Cao, Yapu Zhao, Puyue Wang, Liqing Zhao, Zhigang Tian, Richard Flavell, Zhangyong Hong, Jihong Han, Zhi Yao, Zhenzhou Wu, and Zhinan Yin*
- 5015 Dimethyl Fumarate, an Immune Modulator and Inducer of the Antioxidant Response, Suppresses HIV Replication and Macrophage-Mediated Neurotoxicity: A Novel Candidate for HIV Neuroprotection  
*Stephanie A. Cross, Denise R. Cook, Anthony W. S. Chi, Patricia J. Vance, Lorraine L. Kolson, Bethany J. Wong, Kelly L. Jordan-Sciutto, and Dennis L. Kolson*
- 5026 Epidermal CCR6<sup>+</sup>  $\gamma\delta$  T Cells Are Major Producers of IL-22 and IL-17 in a Murine Model of Psoriasisiform Dermatitis  
*Tomotaka Mabuchi, Tomonori Takekoshi, and Sam T. Hwang*
- 5032 Impaired B Cell Development in the Absence of Krüppel-like Factor 3  
*Thi Thanh Vu, Dominique Gatto, Vivian Turner, Alister P. W. Funnell, Ka Sin Mak, Laura J. Norton, Warren Kaplan, Mark J. Cowley, Fabien Agenès, Jörg Kirberg, Robert Brink, Richard C. M. Pearson, and Merlin Crossley*
- 5043 Complement-Fixing Anti-Type VII Collagen Antibodies Are Induced in Th1-Polarized Lymph Nodes of Epidermolysis Bullosa Acquisita-Susceptible Mice  
*Christoph M. Hammers, Katja Bieber, Kathrin Kalies, David Banczyk, Christoph T. Ellebrecht, Saleh M. Ibrahim, Detlef Zillikens, Ralf J. Ludwig, and Jürgen Westermann*
- 5051 The Class III Kinase Vps34 Promotes T Lymphocyte Survival through Regulating IL-7R $\alpha$  Surface Expression  
*Ian X. McLeod, Xiang Zhou, Qi-Jing Li, Fan Wang, and You-Wen He*
- 5062 MicroRNA-125b Potentiates Macrophage Activation  
*Aadel A. Chaudhuri, Alex Yick-Lun So, Nikita Sinha, William S. J. Gibson, Konstantin D. Taganov, Ryan M. O'Connell, and David Baltimore*
- 5069 Conditional Deletion of TGF- $\beta$ R1 Using Langerin-Cre Mice Results in Langerhans Cell Deficiency and Reduced Contact Hypersensitivity  
*Sonja P. Zahner, Junda M. Kel, Cerithsa A. E. Martina, Inge Brouwers-Haspels, Marian A. van Roon, and Björn E. Clausen*
- 5077 High Expression of IL-22 Suppresses Antigen-Induced Immune Responses and Eosinophilic Airway Inflammation via an IL-10-Associated Mechanism  
*Kazuyuki Nakagome, Mitsuru Imamura, Kimito Kawabata, Hiroaki Harada, Katsuhide Okunishi, Taku Matsumoto, Oh Sasaki, Ryoichi Tanaka, Mitsunobu R. Kano, He Chang, Haruo Hanawa, Jun-ichi Miyazaki, Kazuhiko Yamamoto, and Makoto Dohi*
- 5090 Antigen-Fixed Leukocytes Tolerize Th2 Responses in Mouse Models of Allergy  
*Charles B. Smarr, Chia-Lin Hsu, Adam J. Byrne, Stephen D. Miller, and Paul J. Bryce*
- 5099 Indirect Stimulation of Human V $\gamma$ 2V $\delta$ 2 T Cells through Alterations in Isoprenoid Metabolism  
*Hong Wang, Ghanashyam Sarikonda, Kia-Joo Puan, Yoshimasa Tanaka, Ju Feng, José-Luis Giner, Rong Cao, Jukka Mönkkönen, Eric Oldfield, and Craig T. Morita*
- 5114 A Disintegrin and Metalloproteinase 10 Regulates Antibody Production and Maintenance of Lymphoid Architecture  
*Natalia S. Chaimowitz, Rebecca K. Martin, Joanna Cichy, David R. Gibb, Pooja Patil, Dae-Joong Kang, Julie Farnsworth, Eugene C. Butcher, Brent McCright, and Daniel H. Conrad*

- 5123 **Gluten-Specific T Cells Cross-React between HLA-DQ8 and the HLA-DQ2 $\alpha$ /DQ8 $\beta$  Transdimer**  
*Yvonne Kooy-Winkelaar, Menno van Lummel, Antonis K. Moustakas, Joachim Schweizer, M. Luisa Mearin, Chris J. Mulder, Bart O. Roep, Jan W. Drijfhout, George K. Papadopoulos, Jeroen van Bergen, and Frits Koning*
- 5130 **Flagellin, a TLR5 Agonist, Reduces Graft-versus-Host Disease in Allogeneic Hematopoietic Stem Cell Transplantation Recipients While Enhancing Antiviral Immunity**  
*Mohammad S. Hossain, David L. Jaye, Brian P. Pollack, Alton B. Farris, Malefu L. Tselanyane, Ebenezer David, John D. Roback, Andrew T. Gewirtz, and Edmund K. Waller*
- 5141 **Antibody Repertoire Development in Fetal and Neonatal Piglets. XX. B Cell Lymphogenesis Is Absent in the Ileal Peyer's Patches, Their Repertoire Development Is Antigen Dependent, and They Are Not Required for B Cell Maintenance**  
*John E. Butler, Kristina Santiago-Mateo, Xiu-Zhu Sun, Nancy Wertz, Marek Sinkora, and David H. Francis*
- 5150 **Ileal Peyer's Patches Are Not Necessary for Systemic B Cell Development and Maintenance and Do Not Contribute Significantly to the Overall B Cell Pool in Swine**  
*Marek Sinkora, Katerina Stepanova, John E. Butler, David Francis, Kristina Santiago-Mateo, Hana Potockova, Kristyna Karova, and Jana Sinkorova*
- 5162 **IL-15-High-Responder Developing NK Cells Bearing Ly49 Receptors in IL-15<sup>-/-</sup> Mice**  
*Katsumi Yoshizawa, Shinsuke Nakajima, Tsuyoshi Notake, Shin-Ichi Miyagawa, Shigeaki Hida, and Shinsuke Taki*
- 5170 **The Basis of Distinctive IL-2- and IL-15-Dependent Signaling: Weak CD122-Dependent Signaling Favors CD8<sup>+</sup> T Central-Memory Cell Survival but Not T Effector-Memory Cell Development**  
*Iris Castro, Aixin Yu, Michael J. Dee, and Thomas R. Malek*
- 5183 **Programmed Cell Death 1 Suppresses B-1b Cell Expansion and Long-Lived IgG Production in Response to T Cell-Independent Type 2 Antigens**  
*Karen M. Haas*
- 5196 **Ex Vivo IL-1 Receptor Type I Expression in Human CD4<sup>+</sup> T Cells Identifies an Early Intermediate in the Differentiation of Th17 from FOXP3<sup>+</sup> Naive Regulatory T Cells**  
*Caroline Raffin, Isabelle Raimbaud, Danila Valmori, and Maha Ayyoub*
- 5203 **Enrichment of Functionally Distinct Mouse Hematopoietic Progenitor Cell Populations Using CD62L**  
*Scott Cho and Gerald J. Spangrude*
- 5211 **Inhibition of Autoimmune Diabetes by TLR2 Tolerance**  
*Do-Hoon Kim, June-Chul Lee, Sunshin Kim, Seung Hoon Oh, Moon-Kyu Lee, Kwang-Won Kim, and Myung-Shik Lee*
- 5221 **Activation of Wnt Signaling Arrests Effector Differentiation in Human Peripheral and Cord Blood-Derived T Lymphocytes**  
*Sujatha Muralidharan, Patrick J. Hanley, Enli Liu, Rikhia Chakraborty, Catherine Bollard, Elizabeth Shpall, Cliona Rooney, Barbara Savoldo, John Rodgers, and Gianpietro Dotti*

## MOLECULAR AND STRUCTURAL IMMUNOLOGY

- 5233 **T Cell-Signaling Network Analysis Reveals Distinct Differences between CD28 and CD2 Costimulation Responses in Various Subsets and in the MAPK Pathway between Resting and Activated Regulatory T Cells**  
*Maria Elisabeth Kalland, Nikolaus Günter Oberprieler, Torkel Vang, Kjetil Taskén, and Knut Martin Torgersen*

## IMMUNOGENETICS

- 5246 **Platypus TCR $\mu$  Provides Insight into the Origins and Evolution of a Uniquely Mammalian TCR Locus**  
*Xinxin Wang, Zuly E. Parra, and Robert D. Miller*

## HOST DEFENSE

- 5255 **Cyclooxygenase-2 Deficiency Leads to Intestinal Barrier Dysfunction and Increased Mortality during Polymicrobial Sepsis**  
*Laura E. Fredenburgh, Margarita M. Suárez Velandia, Jun Ma, Torsten Olszak, Manuela Cernadas, Joshua A. Englert, Su Wol Chung, Xiaoli Liu, Cynthia Begay, Robert F. Padera, Richard S. Blumberg, Stephen R. Walsh, Rebecca M. Baron, and Mark A. Perrella*

- 5268 Activation of Autophagy by  $\alpha$ -Herpesviruses in Myeloid Cells Is Mediated by Cytoplasmic Viral DNA through a Mechanism Dependent on Stimulator of IFN Genes  
*Simon B. Rasmussen, Kristy A. Horan, Christian K. Holm, Amanda J. Stranks, Thomas C. Mettenleiter, A. Katharina Simon, Søren B. Jensen, Frazer J. Rixon, Bin He, and Søren R. Paludan*
- 5277 Convergent and Divergent Development among M Cell Lineages in Mouse Mucosal Epithelium  
*Jing Wang, Veronica Gusti, Andrea Saraswati, and David D. Lo*
- 5286 A Cytosolic Phospholipase A<sub>2</sub>-Initiated Lipid Mediator Pathway Induces Autophagy in Macrophages  
*Hai-Yan Qi, Mathew P. Daniels, Yueqin Liu, Li-Yuan Chen, Sara Alsaaty, Stewart J. Levine, and James H. Shelhamer*
- 5293 Ly6G<sup>+</sup> Neutrophils Are Dispensable for Defense against Systemic *Listeria monocytogenes* Infection  
*Chao Shi, Tobias M. Hohl, Ingrid Leiner, Michele J. Equinda, Xiaozhou Fan, and Eric G. Pamer*
- 5299 Semen Clusterin Is a Novel DC-SIGN Ligand  
*Juan Sabatte, Wolfgang Faigle, Ana Ceballos, Willy Morelle, Christian Rodríguez Rodríguez, Federico Remes Lenicov, Michel Thépaut, Franck Fieschi, Emilio Malchiodi, Marisa Fernández, Fernando Arenzana-Seisdedos, Hugues Lortat-Jacob, Jean-Claude Michalski, Jorge Geffner, and Sebastian Amigorena*
- 5310 B and T Lymphocyte Attenuator Restricts the Protective Immune Response against Experimental Malaria  
*Guido Adler, Christiane Steeg, Klaus Pfeffer, Theresa L. Murphy, Kenneth M. Murphy, Jean Langhorne, and Thomas Jacobs*
- 5320 The TLR3/TICAM-1 Pathway Is Mandatory for Innate Immune Responses to Poliovirus Infection  
*Hiroyuki Oshiumi, Masaaki Okamoto, Ken Fujii, Takashi Kawanishi, Misako Matsumoto, Satoshi Koike, and Tsukasa Seya*
- 5328 The Pathogenic Th17 Cell Response to Major Schistosome Egg Antigen Is Sequentially Dependent on IL-23 and IL-1 $\beta$   
*Mara G. Shainheit, Krzysztof W. Lasocki, Eduardo Finger, Bridget M. Larkin, Patrick M. Smith, Arlene H. Sharpe, Charles A. Dinarello, Laura I. Rutitzky, and Miguel J. Stadecker*
- 5336 The DNA Damage Response Induces IFN  
*Sabrina Brzostek-Racine, Chris Gordon, Sarah Van Scoy, and Nancy C. Reich*
- 5346 Local Delivery of GM-CSF Protects Mice from Lethal Pneumococcal Pneumonia  
*Kathrin Steinwede, Ole Tempelhof, Kristine Bolte, Regina Maus, Jennifer Bohling, Bianca Ueberberg, Florian Länger, John W. Christman, James C. Paton, Kjetil Ask, Shyam Maharaj, Martin Kolb, Jack Gauldie, Tobias Welte, and Ulrich A. Maus*
- ## INFLAMMATION
- 5357 IL-17 Boosts Proinflammatory Outcome of Antiviral Response in Human Cells  
*Grigory Ryzhakov, Cheryl Chuk-ke Lai, Katrina Blazek, Ken-win To, Tracy Hussell, and Irina Udalova*
- 5363 Bacterial Superantigens Enhance the In Vitro Proinflammatory Response and In Vivo Lethality of the TLR2 Agonist Bacterial Lipoprotein  
*David E. Kearney, Wei Wang, H. Paul Redmond, and Jiang Huai Wang*
- 5370 Disruption of Nitric Oxide Signaling by *Helicobacter pylori* Results in Enhanced Inflammation by Inhibition of Heme Oxygenase-1  
*Alain P. Gobert, Mohammad Asim, M. Blanca Piazuelo, Thomas Verriere, Brooks P. Scull, Thibaut de Sablet, Ashley Glumac, Nuruddeen D. Lewis, Pelayo Correa, Richard M. Peek, Jr., Rupesh Chaturvedi, and Keith T. Wilson*
- 5380 Prostaglandin I<sub>2</sub> Promotes the Development of IL-17–Producing  $\gamma\delta$  T Cells That Associate with the Epithelium during Allergic Lung Inflammation  
*Zeina Jaffar, Maria E. Ferrini, Pamela K. Shaw, Garret A. FitzGerald, and Kevan Roberts*
- 5392 Binding of Anti-SSA Antibodies to Apoptotic Fetal Cardiocytes Stimulates Urokinase Plasminogen Activator (uPA)/uPA Receptor-Dependent Activation of TGF- $\beta$  and Potentiates Fibrosis  
*Paraskevi Briassouli, Daniel Rifkin, Robert M. Clancy, and Jill P. Buyon*

- 5402 IL-23 Is Required for Long-Term Control of *Mycobacterium tuberculosis* and B Cell Follicle Formation in the Infected Lung  
*Shabaana A. Khader, Lokesh Guglani, Javier Rangel-Moreno, Radha Gopal, Beth A. Fallert Junecko, Jeffrey J. Fountain, Cynthia Martino, John E. Pearl, Michael Tighe, Yin-yao Lin, Samantha Slight, Jay K. Kolls, Todd A. Reinhart, Troy D. Randall, and Andrea M. Cooper*
- 5408 Resolvin D1 and Its Precursor Docosahexaenoic Acid Promote Resolution of Adipose Tissue Inflammation by Eliciting Macrophage Polarization toward an M2-Like Phenotype  
*Esther Titos, Bibiana Rius, Ana González-Pérez, Cristina López-Vicario, Eva Morán-Salvador, Marcos Martínez-Clemente, Vicente Arroyo, and Joan Clària*
- 5419 IFN- $\gamma$  Promotes Muscle Damage in the *mdx* Mouse Model of Duchenne Muscular Dystrophy by Suppressing M2 Macrophage Activation and Inhibiting Muscle Cell Proliferation  
*S. Armando Villalta, Bo Deng, Chiara Rinaldi, Michelle Wehling-Henricks, and James G. Tidball*
- 5429 The Role of Neutral Endopeptidase in Caerulein-Induced Acute Pancreatitis  
*Yung-Hua Koh, Shabbir Moochhala, and Madhav Bhatia*
- 5440 The NLRP3 Inflammasome Contributes to Brain Injury in Pneumococcal Meningitis and Is Activated through ATP-Dependent Lysosomal Cathepsin B Release  
*Tobias Hoegen, Nadin Tremel, Matthias Klein, Barbara Angele, Hermann Wagner, Carsten Kirschning, Hans-Walter Pfister, Adriano Fontana, Sven Hammerschmidt, and Uwe Koedel*

## CLINICAL IMMUNOLOGY

- 5452 Split Immunity: Immune Inhibition of Rat Gliomas by Subcutaneous Exposure to Unmodified Live Tumor Cells  
*Ilan Volovitz, Yotvat Marmor, Meir Azulay, Arthur Machlenkin, Ofir Goldberger, Felix Mor, Shimon Slavin, Zvi Ram, Irun R. Cohen, and Lea Eisenbach*
- 5463 AUTHOR INDEX