

**BREAKTHROUGHS TAKE TIME.  
ISOLATING CELLS SHOULDN'T.**

STEMCELL  
TECHNOLOGIES

LEARN MORE >

The Journal of  
**Immunology**

**187 (12)**

*J Immunol* 2011; 187:6165-6584; ;  
<http://www.jimmunol.org/content/187/12>

This information is current as  
of August 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>

*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.



6165 IN THIS ISSUE

LETTERS TO THE EDITOR

- 6167 Comment on “A Role for Immature Myeloid Cells in Immune Senescence”  
*Alejandro Ferrari, Eliana Cela, and Daniel González Maglio*
- 6167 Response to Comment on “A Role for Immature Myeloid Cells in Immune Senescence”  
*Elena Y. Enioutina*
- 6168 Comment on “Cyclophilin A Is a Damage-Associated Molecular Pattern Molecule That Mediates Acetaminophen-Induced Liver Injury”  
*Hartmut Jaeschke and C. David Williams*
- 6168 Response to Comment on “Cyclophilin A Is a Damage-Associated Molecular Pattern Molecule That Mediates Acetaminophen-Induced Liver Injury”  
*James W. Dear, Kenneth J. Simpson, D. Nicholas Bateman, and David J. Webb*

CUTTING EDGE

- 6171 Cutting Edge: MicroRNA-181 Promotes Human NK Cell Development by Regulating Notch Signaling  
*Frank Cicchocki, Martin Felices, Valarie McCullar, Steven R. Presnell, Ahmad Al-Attar, Charles T. Lutz, and Jeffrey S. Miller*
- 6176 Cutting Edge: Loss of  $\alpha 4$  Integrin Expression Differentially Affects the Homing of Th1 and Th17 Cells  
*Simon Glatigny, Rebekka Duhon, Mohamed Oukka, and Estelle Bettelli*
- 6180 Cutting Edge: Activation of Virus-Specific CD4 T Cells throughout  $\gamma$ -Herpesvirus Latency  
*Michael L. Freeman, Claire E. Burkum, Kathleen G. Lanzer, Meghan K. Jensen, Mushtaq Ahmed, Eric J. Yager, Emilio Flaño, Gary M. Winslow, David L. Woodland, and Marcia A. Blackman*

CELLULAR IMMUNOLOGY AND IMMUNE REGULATION

- 6185 Is There a Typical Germinal Center? A Large-Scale Immunohistological Study on the Cellular Composition of Germinal Centers during the Hapten-Carrier-Driven Primary Immune Response in Mice  
*Nicole Wittenbrink, Anke Klein, Armin A. Weiser, Johannes Schuchhardt, and Michal Or-Guil*

On the cover: Potential TCR contact sites in the Mamu-B\*17 show a more flexible juxtaposition at the TCR/MHC I interface, with potential implications for TCR repertoire engagement. Wu, Y., F. Gao, J. Liu, J. Qi, E. Gostick, D. A. Price, and G. F. Gao. 2011. Structural basis of diverse peptide accommodation by the rhesus macaque MHC class I molecule Mamu-B\*17: insights into immune protection from simian immunodeficiency virus. *J. Immunol.* 187: 6382–6392.

*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.

- 6197 CARMA1 Is Necessary for Optimal T Cell Responses in a Murine Model of Allergic Asthma  
*Ravisankar A. Ramadas, Marly I. Roche, James J. Moon, Thomas Ludwig, Ramnik J. Xavier, and Benjamin D. Medoff*
- 6208 Aging Is Associated with an Increase in T Cells and Inflammatory Macrophages in Visceral Adipose Tissue  
*Carey N. Lumeng, Jianhua Liu, Lynn Geletka, Colin Delaney, Jennifer Delproposto, Anjali Desai, Kelsie Oatmen, Gabriel Martinez-Santibanez, Annabelle Julius, Sanjay Garg, and Raymond L. Yung*
- 6217 The Proteoglycan Biglycan Enhances Antigen-Specific T Cell Activation Potentially via MyD88 and TRIF Pathways and Triggers Autoimmune Perimyocarditis  
*Zoran V. Popovic, Shijun Wang, Maria Papatriantafyllou, Ziya Kaya, Stefan Porubsky, Maria Meisner, Mahnaz Bonrouhi, Sven Burgdorf, Marian F. Young, Liliana Schaefer, and Hermann-Josef Gröne*
- 6227 Leukemic Priming of Resting NK Cells Is Killer Ig-like Receptor Independent but Requires CD15-Mediated CD2 Ligation and Natural Cytotoxicity Receptors  
*May Sabry, Maria Tsirogianni, Ismail A. Bakhsb, Janet North, Janani Sivakumaran, Konstantinos Giannopoulos, Robert Anderson, Stephen Mackinnon, and Mark W. Lowdell*
- 6235 Resident Peritoneal NK Cells  
*Rosemary Gonzaga, Polly Matzinger, and Ainhoa Perez-Diez*
- 6243 Redox Remodeling by Dendritic Cells Protects Antigen-Specific T Cells against Oxidative Stress  
*Anna Martner, Johan Aurelius, Anna Rydström, Kristoffer Hellstrand, and Fredrik B. Thorén*
- 6249 Induction of Endoplasmic Reticulum–Endosome Fusion for Antigen Cross-Presentation Induced by Poly ( $\gamma$ -Glutamic Acid) Nanoparticles  
*Yobei Mukai, Tomoyo Yoshinaga, Mai Yoshikawa, Kazuhiko Matsuo, Tomoaki Yoshikawa, Keisuke Matsuo, Kazuyuki Niki, Yasuo Yoshioka, Naoki Okada, and Shinsaku Nakagawa*
- 6256 Contact-Dependent T Cell Activation and T Cell Stopping Require Talin1  
*Sarah A. Wernimont, Andrew J. Wiemer, David A. Bennin, Susan J. Monkley, Thomas Ludwig, David R. Critchley, and Anna Huttenlocher*
- 6268 Neutralizing IL-6 Reduces Human Arterial Allograft Rejection by Allowing Emergence of CD161<sup>+</sup> CD4<sup>+</sup> Regulatory T Cells  
*Birgit Fogal, Tai Yi, Chen Wang, Deepak A. Rao, Amir Lebastchi, Sanjay Kulkarni, George Tellides, and Jordan S. Pober*
- 6281 Interaction of Streptavidin-Based Peptide–MHC Oligomers (Tetramers) with Cell-Surface TCRs  
*Jennifer D. Stone, Maxim N. Artyomov, Adam S. Chervin, Arup K. Chakraborty, Herman N. Eisen, and David M. Kranz*
- 6291 Circadian Variation of the Response of T Cells to Antigen  
*Erin E. Fortier, Julie Rooney, Hugues Dardente, Marie-Pierre Hardy, Nathalie Labrecque, and Nicolas Cermakian*
- 6301 Granzyme B Regulates Antiviral CD8<sup>+</sup> T Cell Responses  
*Suzan M. Salti, Erin M. Hammelev, Jenny L. Grewal, Sreelatha T. Reddy, Sarah J. Zemple, William J. Grossman, Mitchell H. Grayson, and James W. Verbsky*
- 6310 Th-1 Lymphocytes Induce Dendritic Cell Tumor Killing Activity by an IFN- $\gamma$ –Dependent Mechanism  
*Collin J. LaCasse, Nona Janikashvili, Claire B. Larmonier, Darya Alizadeh, Neale Hanke, Jessica Kartchner, Elaine Situ, Sara Centuori, Michael Har-Noy, Bernard Bonnotte, Emmanuel Katsanis, and Nicolas Larmonier*
- 6318 SOCS3 Deletion in B Cells Alters Cytokine Responses and Germinal Center Output  
*Sarah A. Jones, Christine A. White, Lorraine Robb, Warren S. Alexander, and David M. Tarlinton*
- 6327 A Novel Pathway Responsible for Lipopolysaccharide-Induced Translational Regulation of TNF- $\alpha$  and IL-6 Expression Involves Protein Kinase C and Fascin  
*Jae-Kwan Kim, Sang-Min Lee, Kyoungbo Suk, and Won-Ha Lee*
- 6335 IL-15 Regulates Homeostasis and Terminal Maturation of NKT Cells  
*Laura E. Gordy, Jelena S. Bezbradica, Andrew I. Flyak, Charles T. Spencer, Alexis Dunkle, Jingchun Sun, Aleksandar K. Stanic, Mark R. Boothby, You-Wen He, Zhongming Zhao, Luc Van Kaer, and Sebastian Joyce*

- 6346 Antigen Targeting to Plasmacytoid Dendritic Cells via Siglec-H Inhibits Th Cell-Dependent Autoimmunity  
*Jakob Loschko, Sylvia Heink, Daniela Hackl, Diana Dudziak, Wolfgang Reindl, Thomas Korn, and Anne B. Krug*
- 6357 Transfer of Regulatory Properties from Tolerogenic to Proinflammatory Dendritic Cells via Induced Autoreactive Regulatory T Cells  
*Fleur S. Kleijwegt, Sandra Laban, Gaby Duinkerken, Antoinette M. Joosten, Bobby P. C. Koeleman, Tatjana Nikolic, and Bart O. Roep*
- 6365 Rat and Mouse CD94 Associate Directly with the Activating Transmembrane Adaptor Proteins DAP12 and DAP10 and Activate NK Cell Cytotoxicity  
*Per C. Saether, Sigurd E. Hoelsbrekken, Sigbjørn Fossum, and Erik Dissen*

## MOLECULAR AND STRUCTURAL IMMUNOLOGY

- 6374 Regulation of TCR $\beta$  Allelic Exclusion by Gene Segment Proximity and Accessibility  
*Hrisavgi D. Kondilis-Mangum, Han-Yu Shih, Grace Mahowald, Barry P. Sleckman, and Michael S. Krangel*
- 6382 Structural Basis of Diverse Peptide Accommodation by the Rhesus Macaque MHC Class I Molecule Mamu-B\*17: Insights into Immune Protection from Simian Immunodeficiency Virus  
*Yan Wu, Feng Gao, Jun Liu, Jianxun Qi, Emma Gostick, David A. Price, and George F. Gao*
- 6393 Stable Coordination of the Inhibitory Ca<sup>2+</sup> Ion at the Metal Ion-Dependent Adhesion Site in Integrin CD11b/CD18 by an Antibody-Derived Ligand Aspartate: Implications for Integrin Regulation and Structure-Based Drug Design  
*Bhuvaneshwari Mahalingam, Kaouther Ajroud, José Luis Alonso, Saurabh Anand, Brian D. Adair, Alberto L. Horenstein, Fabio Malavasi, Jian-Ping Xiong, and M. Amin Arnaout*

## HOST DEFENSE

- 6402 Cathelicidin LL-37 Increases Lung Epithelial Cell Stiffness, Decreases Transepithelial Permeability, and Prevents Epithelial Invasion by *Pseudomonas aeruginosa*  
*Fitzroy J. Byfield, Marek Kowalski, Katrina Cruz, Katarzyna Leszczyńska, Andrzej Namiot, Paul B. Savage, Robert Bucki, and Paul A. Janmey*
- 6410 Hepcidin Is Regulated during Blood-Stage Malaria and Plays a Protective Role in Malaria Infection  
*Hai-Zhen Wang, Ying-Xin He, Chun-Ju Yang, Wei Zhou, and Cheng-Gang Zou*
- 6417 Elongation Factor-2, a Th1 Stimulatory Protein of *Leishmania donovani*, Generates Strong IFN- $\gamma$  and IL-12 Response in Cured *Leishmania*-Infected Patients/Hamsters and Protects Hamsters against *Leishmania* Challenge  
*Pramod K. Kushawaha, Reema Gupta, Shyam Sundar, Amogh A. Sahasrabudde, and Anuradha Dube*
- 6428 p53 Serves as a Host Antiviral Factor That Enhances Innate and Adaptive Immune Responses to Influenza A Virus  
*César Muñoz-Fontela, Michael Pazos, Igotz Delgado, William Murk, Sathish Kumar Mungamuri, Sam W. Lee, Adolfo García-Sastre, Thomas M. Moran, and Stuart A. Aaronson*
- 6437 A Novel Bacterial Resistance Mechanism against Human Group IIA-Secreted Phospholipase A<sub>2</sub>: Role of *Streptococcus pyogenes* Sortase A  
*Elin Mover, Yongzheng Wu, Gérard Lambeau, Lhoussaine Touqui, and Thomas Areschoug*
- 6447 Activation of NLR4 by Flagellated Bacteria Triggers Caspase-1-Dependent and -Independent Responses To Restrict *Legionella pneumophila* Replication in Macrophages and In Vivo  
*Marcelo S. F. Pereira, Giuliano F. Morgantetti, Liliana M. Massis, Catarina V. Horta, Juliana I. Hori, and Dario S. Zamboni*
- 6456 Guanylate Binding Protein 4 Negatively Regulates Virus-Induced Type I IFN and Antiviral Response by Targeting IFN Regulatory Factor 7  
*Yu Hu, Jie Wang, Bo Yang, Nuoyan Zheng, Meiling Qin, Yongyong Ji, Guomei Lin, Lin Tian, Xiaodong Wu, Li Wu, and Bing Sun*

6463 An MHC Class Ib-Restricted CD8<sup>+</sup> T Cell Response to Lymphocytic Choriomeningitis Virus  
*Lili Chen, David C. Jay, Jared D. Fairbanks, Xiao He, and Peter E. Jensen*

6473 MIP-T3 Is a Negative Regulator of Innate Type I IFN Response  
*Ming-Him James Ng, Ting-Hin Ho, Kin-Hang Kok, Kam-Leung Siu, Jun Li, and Dong-Yan Jin*

6483 Dengue Virus-Induced Autoantibodies Bind to Plasminogen and Enhance Its Activation  
*Yung-Chun Chuang, Huan-Yao Lei, Yee-Shin Lin, Hsiao-Sheng Liu, Hua-Lin Wu, and Trai-Ming Yeh*

## INFLAMMATION

6491 Micrometer-Sized Titanium Particles Can Induce Potent Th2-Type Responses through TLR4-Independent Pathways  
*Pankaj K. Mishra, Wenhui Wu, Cristina Rozo, Nadim J. Hallab, Joseph Benevenia, and William C. Gause*

6499 Inducible CD4<sup>+</sup>LAP<sup>+</sup>Foxp3<sup>-</sup> Regulatory T Cells Suppress Allergic Inflammation  
*Wei Duan, Takanori So, Amit K. Mehta, Heonsik Choi, and Michael Croft*

6508 Cannabinoid Receptor Type 1 Protects Nigrostriatal Dopaminergic Neurons against MPTP Neurotoxicity by Inhibiting Microglial Activation  
*Young C. Chung, Eugene Bok, Sue H. Hub, Ju-Young Park, Sung-Hwa Yoon, Sang R. Kim, Yoon-Seong Kim, Sungho Maeng, Sung Hyun Park, and Byung K. Jin*

6518 Eosinophils as a Novel Cell Source of Prostaglandin D<sub>2</sub>: Autocrine Role in Allergic Inflammation  
*Tatiana Luna-Gomes, Kelly G. Magalhães, Fabio P. Mesquita-Santos, Ilka Bakker-Abreu, Rafaela F. Samico, Raphael Molinaro, Andrea S. Calheiros, Bruno L. Diaz, Patrícia T. Bozza, Peter F. Weller, and Christianne Bandeira-Melo*

6527 The Tumor Suppressor ARF Regulates Innate Immune Responses in Mice  
*Paqui G. Través, Raquel López-Fontal, Alfonso Luque, and Sonsoles Hortelano*

6539 Blocking IL-1 Signaling Rescues Cognition, Attenuates Tau Pathology, and Restores Neuronal  $\beta$ -Catenin Pathway Function in an Alzheimer's Disease Model  
*Masashi Kitazawa, David Cheng, Michelle R. Tsukamoto, Maya A. Koike, Paul D. Wes, Vitaly Vasilevko, David H. Cribbs, and Frank M. LaFerla*

## CLINICAL IMMUNOLOGY

6550 Expansion of Functionally Anergic CD21<sup>-/low</sup> Marginal Zone-like B Cell Clones in Hepatitis C Virus Infection-Related Autoimmunity  
*Benjamin Terrier, Florence Joly, Thomas Vazquez, Philippe Benech, Michelle Rosenzwajg, Wassila Carpentier, Marlène Garrido, Pascale Ghillani-Dalbin, David Klatzmann, Patrice Cacoub, and David Saadoun*

6564 Alloantibodies against MHC Class I: A Novel Mechanism of Neonatal Pancytopenia Linked to Vaccination  
*Gilles Foucras, Fabien Corbière, Christian Tasca, Carole Pichereaux, Cécile Caubet, Catherine Trumel, Caroline Lacroux, Cyrielle Franchi, Odile Burette-Schiltz, and François Schelcher*

6571 BAFF/APRIL Inhibition Decreases Selection of Naive but Not Antigen-Induced Autoreactive B Cells in Murine Systemic Lupus Erythematosus  
*Weiqing Huang, Ioana Moisini, Ramalingam Bethunaickan, Ranjit Sahu, Meredith Akerman, Dan Eilat, Martin Lesser, and Anne Davidson*

## LETTERS OF RETRACTION

6581 Retraction: Targeting Neural-Restrictive Silencer Factor Sensitizes Tumor Cells to Antibody-Based Cancer Immunotherapy In Vitro via Multiple Mechanisms  
*Martin V. Kolev, Marieta M. Ruseva, B. Paul Morgan, and Rossen M. Donev*

## CORRECTIONS

6582 Correction: Early and Transient Release of Leukocyte Pentraxin 3 during Acute Myocardial Infarction  
*Norma Mauerer, Patrizia Rovere-Querini, Massimo Slavich, Giovanni Coppi, Andrea Doni, Barbara Bottazzi, Cecilia Garlanda, Domenico Cianflone, Attilio Maseri, Alberto Mantovani, and Angelo A. Manfredi*

- 6583 Correction: STAT3 Negatively Regulates Type I IFN-Mediated Antiviral Response  
*Wei-Bei Wang, David E. Levy, and Chien-Kuo Lee*
- 6584 Correction: The Adaptor Protein Bam32 in Human Dendritic Cells Participates in the Regulation of MHC Class I-Induced CD8<sup>+</sup> T Cell Activation  
*Daniela Ortner, Daniela Grabher, Martin Hermann, Elisabeth Kremmer, Susanne Hofer, and Christine Heufler*
- 6585 AUTHOR INDEX
- 6587 AD HOC REVIEWERS
- 6599 AUTHOR INDEX TO VOLUME 187
- 6621 SUBJECT INDEX TO VOLUME 187