



### Versatile by design

Deriving precursor cells from embryonic and induced pluripotent stem cells is no trivial task. Discover how researchers across the world have used the Sony MA900 Multi-Application Cell Sorter to empower their stem cell research.

[Download Publications List](#)

SONY



187 (2)

*J Immunol* 2011; 187:593-1065; ;  
<http://www.jimmunol.org/content/187/2>

This information is current as  
of September 24, 2021.

#### 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.



### 593 IN THIS ISSUE

#### LETTERS TO THE EDITOR

- 595 Comment on “Dermatitis Herpetiformis Sera or Goat Anti–Transglutaminase-3 Transferred to Human Skin-Grafted Mice Mimics Dermatitis Herpetiformis Immunopathology”

*Emiliano Antiga, Marzia Caproni, and Paolo Fabbri*

- 595 Response to Comment on “Dermatitis Herpetiformis Sera or Goat Anti–Transglutaminase-3 Transferred to Human Skin-Grafted Mice Mimics Dermatitis Herpetiformis Immunopathology”

*Laurence J. Meyer*

#### BRIEF REVIEWS

- 597 Modulation of Inflammasome Pathways by Bacterial and Viral Pathogens

*Mohamed Lamkanfi and Vishva M. Dixit*

#### CUTTING EDGE

- 603 Cutting Edge: JAM-C Controls Homeostatic Chemokine Secretion in Lymph Node Fibroblastic Reticular Cells Expressing Thrombomodulin

*Vincent Frontera, Marie-Laure Arcangeli, Claudia Zimmerli, Florence Bardin, Elodie Obrados, Stéphane Audebert, Marc Bajenoff, Jean-Paul Borg, and Michel Aurrand-Lions*

- 608 Cutting Edge: T Cells Monitor N-Myristoylation of the Nef Protein in Simian Immunodeficiency Virus-Infected Monkeys

*Daisuke Morita, Tatsuhiko Igarashi, Mariko Horiike, Naoki Mori, and Masabiko Sugita*

- 613 Cutting Edge: Reactive Oxygen Species Inhibitors Block Priming, but Not Activation, of the NLRP3 Inflammasome

*Franz Bauernfeind, Eva Bartok, Anna Rieger, Luigi Franchi, Gabriel Núñez, and Veit Hornung*

On the cover: An image of T cells infiltrating a heart valve in calcific aortic stenosis stained for CD3 (green) and CD8 (red) with DAPI counterstaining. The image shows a mixture of CD3<sup>+</sup>CD8<sup>+</sup> and CD3<sup>+</sup>CD8<sup>-</sup> cells, presumably CD4 T cells, in a region of autofluorescing calcification. Some lymphocytes are closely applied to the calcified nodule. Winchester, R., M. Wiesendanger, W. O'Brien, H.-Z. Zhang, M. S. Maurer, L. D. Gillam, A. Schwartz, C. Marboe, and A. S. Stewart. 2011. Circulating activated and effector memory T cells are associated with calcification and clonal expansions in bicuspid and tricuspid valves of calcific aortic stenosis *J. Immunol.* 187: 1006–1014.

*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.

## CELLULAR IMMUNOLOGY AND IMMUNE REGULATION

- 619 A Requirement for the p85 PI3K Adapter Protein BCAP in the Protection of Macrophages from Apoptosis Induced by Endoplasmic Reticulum Stress  
*SungWon Song, Claude Chew, Benjamin M. Dale, Daniel Traum, James Peacock, Tetsuo Yamazaki, Raphael Clynes, Tomohiro Kurosaki, and Steven Greenberg*
- 626 Cyclosporine-Resistant, Rab27a-Independent Mobilization of Intracellular Preformed CD40 Ligand Mediates Antigen-Specific T Cell Help In Vitro  
*Yoshinobu Koguchi, Jennifer L. Gardell, Timothy J. Thauland, and David C. Parker*
- 635 Akt-Mediated Proinflammatory Response of Mononuclear Phagocytes Infected with *Burkholderia cenocepacia* Occurs by a Novel GSK3 $\beta$ -Dependent, I $\kappa$ B Kinase-Independent Mechanism  
*Thomas J. Cremer, Prexy Shah, Estelle Cornet-Boyaka, Miguel A. Valvano, Jonathan P. Butchar, and Susheela Tridandapani*
- 644 NTPDase1 Controls IL-8 Production by Human Neutrophils  
*Filip Kukulski, Fariborz Bahrami, Fethia Ben Yebdri, Joanna Lecka, Mireia Martín-Satué, Sébastien A. Lévesque, and Jean Sévigny*
- 654 Anti-CD8 Antibodies Can Trigger CD8<sup>+</sup> T Cell Effector Function in the Absence of TCR Engagement and Improve Peptide–MHC I Tetramer Staining  
*Mathew Clement, Kristin Ladell, Julia Ekeruche-Makinde, John J. Miles, Emily S. J. Edwards, Garry Dolton, Tamsin Williams, Andrea J. A. Schauenburg, David K. Cole, Sarah N. Lauder, Awen M. Gallimore, Andrew J. Godkin, Scott R. Burrows, David A. Price, Andrew K. Sewell, and Linda Wooldridge*
- 664 Developmental Arrest of T Cells in Rpl22-Deficient Mice Is Dependent upon Multiple p53 Effectors  
*Jason E. Stadanlick, Zhiqiang Zhang, Sang-Yun Lee, Mike Hemann, Matthew Biery, Michael O. Carleton, Gerard P. Zambetti, Stephen J. Anderson, Tamas Oravecz, and David L. Wiest*
- 676 Cancer Exosomes Express CD39 and CD73, Which Suppress T Cells through Adenosine Production  
*Aled Clayton, Saly Al-Taei, Jason Webber, Malcolm D. Mason, and Zsuzsanna Tabi*
- 684 Multilayered Defense in HLA-B51–Associated HIV Viral Control  
*YongHong Zhang, YanChun Peng, HuiPing Yan, Keyi Xu, Masumichi Saito, Hao Wu, XinYue Chen, Srinika Ranasinghe, Nozomi Kuse, Tim Powell, Yan Zhao, WeiHua Li, Xin Zhang, Xia Feng, Ning Li, Aleksandra Leligdowicz, XiaoNing Xu, Mina John, Masafumi Takiguchi, Andrew McMichael, Sarah Rowland-Jones, and Tao Dong*
- 692 Notch Signaling Regulates Mouse and Human Th17 Differentiation  
*Shilpa Keerthivasan, Reem Suleiman, Rebecca Lawlor, Justine Roderick, Tonya Bates, Lisa Minter, Juan Anguita, Ignacio Juncadella, Brian J. Nickoloff, I. Caroline Le Poole, Lucio Miele, and Barbara A. Osborne*
- 702 TNF Mediates the Sustained Activation of Nrf2 in Human Monocytes  
*Stuart A. Rushworth, Suharsh Shah, and David J. MacEwan*
- 708 Activated NKT Cells and NK Cells Render T Cells Resistant to Myeloid-Derived Suppressor Cells and Result in an Effective Adoptive Cellular Therapy against Breast Cancer in the FVBN202 Transgenic Mouse  
*Maciej Kmiecik, Debasmita Basu, Kyle K. Payne, Amir Toor, Adly Yacoub, Xiang-Yang Wang, Lisa Smith, Harry D. Bear, and Masoud H. Manjili*
- 718 Cholinergic Regulatory Lymphocytes Re-Establish Neuromodulation of Innate Immune Responses in Sepsis  
*Geber Peña, Bolin Cai, Laura Ramos, Gergely Vida, Edwin A. Deitch, and Luis Ulloa*
- 726 Targeting Fc $\alpha$ RI on Polymorphonuclear Cells Induces Tumor Cell Killing through Autophagy  
*Jantine E. Bakema, Sonja H. Ganzevles, Donna M. Fluitsma, Marco W. Schilham, Robert H. J. Beelen, Thomas Valerius, Stefan Lohse, Martin J. Glennie, Jan Paul Medema, and Marjolein van Egmond*
- 733 Functional Specializations of Intestinal Dendritic Cell and Macrophage Subsets That Control Th17 and Regulatory T Cell Responses Are Dependent on the T Cell/APC Ratio, Source of Mouse Strain, and Regional Localization  
*Timothy L. Denning, Brian A. Norris, Oscar Medina-Contreras, Santhakumar Manicassamy, Duke Geem, Rajat Madan, Christopher L. Karp, and Bali Pulendran*

- 748 Protein Kinase C and NF- $\kappa$ B–Dependent CD4 Downregulation in Macrophages Induced by T Cell-Derived Soluble Factors: Consequences for HIV-1 Infection  
*Rui André Saraiva Raposo, David C. Trudgian, Benjamin Thomas, Bonnie van Wilgenburg, Sally A. Cowley, and William James*
- 760 Simulations of the NK Cell Immune Synapse Reveal that Activation Thresholds Can Be Established by Inhibitory Receptors Acting Locally  
*Aya Kaplan, Shulamit Kotzer, Catarina R. Almeida, Refael Kohen, Gilad Halpert, Mali Salmon-Divon, Karsten Köhler, Petter Höglund, Daniel M. Davis, and Ramit Mehr*
- 774 Regulation of the Estrous Cycle by Neutrophils via Opioid Peptides  
*Soichiro Sasaki, Yutaka Tamaki, Kisaburo Nagata, and Yoshiro Kobayashi*
- 781 Unexpected Role for Granzyme K in CD56<sup>bright</sup> NK Cell-Mediated Immunoregulation of Multiple Sclerosis  
*Wenzheng Jiang, Noo Ri Chai, Dragan Maric, and Bibiana Bielekova*
- 791 Role for MyD88, TLR2 and TLR9 but Not TLR1, TLR4 or TLR6 in Experimental Autoimmune Encephalomyelitis  
*Socorro Miranda-Hernandez, Nicole Gerlach, Julie M. Fletcher, Erik Biro, Matthias Mack, Heinrich Körner, and Alan G. Baxter*
- 805 Impairment of Immunological Synapse Formation in Adaptively Tolerant T Cells  
*Seeyoung Choi and Ronald H. Schwartz*
- 817 Bruton's Tyrosine Kinase Is Required for TLR-Dependent Heme Oxygenase-1 Gene Activation via Nrf2 in Macrophages  
*Vijith Vijayan, Eveline Baumgart-Vogt, Srivatsava Naidu, Guofeng Qian, and Stephan Immenschuh*
- 828 A Critical Role for Dendritic Cells in the Formation of Lymphatic Vessels within Tertiary Lymphoid Structures  
*Luciana R. Muniz, Michelle E. Pacer, Sergio A. Lira, and Glaucia C. Furtado*
- 835 Clonally Related CD8<sup>+</sup> T Cells Responsible for Rapid Population of Both Diffuse Nasal-Associated Lymphoid Tissue and Lung After Respiratory Virus Infection  
*Sherri L. Surman, Rajeev Rudraraju, David L. Woodland, Pradyot Dash, Paul G. Thomas, and Julia L. Hurwitz*
- 842 Targeting Antigen to Mouse Dendritic Cells via Clec9A Induces Potent CD4 T Cell Responses Biased toward a Follicular Helper Phenotype  
*Mireille H. Laboud, Fatma Ahmet, Susie Kitsoulis, Soo San Wan, David Vremec, Chin-Nien Lee, Belinda Phipson, Wei Shi, Gordon K. Smyth, Andrew M. Lew, Yu Kato, Scott N. Mueller, Gayle M. Davey, William R. Heath, Ken Shortman, and Irina Caminschi*
- 851 Loss of T Cell CD98 H Chain Specifically Ablates T Cell Clonal Expansion and Protects from Autoimmunity  
*Joseph Cantor, Marina Slepak, Nil Ege, John T. Chang, and Mark H. Ginsberg*
- 861 A Self-Reactive TCR Drives the Development of Foxp3<sup>+</sup> Regulatory T Cells That Prevent Autoimmune Disease  
*Justin R. Killebrew, Nikole Perdue, Alan Kwan, Angela M. Thornton, Ethan M. Shevach, and Daniel J. Campbell*

## MOLECULAR AND STRUCTURAL IMMUNOLOGY

- 870 Physical and Functional Bivalency Observed Among TCR/CD3 Complexes Isolated from Primary T Cells  
*Adam G. Schrum, Diana Gil, Laurence A. Turka, and Ed Palmer*
- 879 Limiting CDR-H3 Diversity Abrogates the Antibody Response to the Bacterial Polysaccharide  $\alpha$  1 $\rightarrow$ 3 Dextran  
*Tamer I. Mahmoud, Harry W. Schroeder, Jr., and John F. Kearney*

## HOST DEFENSE

- 887 Suppression of TLR9 Immunostimulatory Motifs in the Genome of a Gammaherpesvirus  
*Andrea C. Pezda, Alex Penn, Gregory M. Barton, and Laurent Coscoy*
- 897 *Yersinia pestis* YopE Contains a Dominant CD8 T Cell Epitope that Confers Protection in a Mouse Model of Pneumonic Plague  
*Jr-Shiuan Lin, Frank M. Szaba, Lawrence W. Kummer, Brett A. Chromy, and Stephen T. Smiley*
- 905 Cecal Ligation and Puncture-Induced Impairment of Innate Immune Function Does Not Occur in the Absence of Caspase-1  
*E. D. Murphey*

## INFLAMMATION

- 911 Neutrophil Mobilization from the Bone Marrow during Polymicrobial Sepsis Is Dependent on CXCL12 Signaling  
*Matthew J. Delano, Kindra M. Kelly-Scumpia, Terri C. Thayer, Robert D. Winfield, Philip O. Scumpia, Alex G. Cuenca, Phillips B. Harrington, Kerri A. O'Malley, Elizabeth Warner, Sonia Gabrilovich, Clayton E. Mathews, Drake Laface, Paul G. Heyworth, Reuben Ramphal, Robert M. Strieter, Lyle L. Moldawer, and Philip A. Efron*
- 919 Endoplasmic Reticulum Calcium Depletion Impacts Chaperone Secretion, Innate Immunity, and Phagocytic Uptake of Cells  
*Larry Robert Peters and Malini Raghavan*
- 932 Gab2, via PI-3K, Regulates ARF1 in Fc $\epsilon$ RI-Mediated Granule Translocation and Mast Cell Degranulation  
*Keigo Nishida, Satoru Yamasaki, Aiko Hasegawa, Akihiro Iwamatsu, Haruhiko Koseki, and Toshio Hirano*
- 942 Ginsenoside Rg1, a Novel Glucocorticoid Receptor Agonist of Plant Origin, Maintains Glucocorticoid Efficacy with Reduced Side Effects  
*Juan Du, Binbin Cheng, Xiaoyan Zhu, and Changquan Ling*
- 951 IL-23 Is Critical for Induction of Arthritis, Osteoclast Formation, and Maintenance of Bone Mass  
*Iannis E. Adamopoulos, Marlowe Tessmer, Cheng-Chi Chao, Sarvesh Adda, Dan Gorman, Mary Petro, Chuan-Chu Chou, Robert H. Pierce, Wei Yao, Nancy E. Lane, Drake Laface, and Edward P. Bowman*
- 960 Ethyl Pyruvate Rescues Nigrostriatal Dopaminergic Neurons by Regulating Glial Activation in a Mouse Model of Parkinson's Disease  
*Sue H. Huh, Young C. Chung, Ying Piao, Min Y. Jin, Hyo J. Son, Nam S. Yoon, Joo Y. Hong, Youngmi K. Pak, Yoon S. Kim, Jong K. Hong, Onyou Hwang, and Byung K. Jin*
- 970 Early and Transient Release of Leukocyte Pentraxin 3 during Acute Myocardial Infarction  
*Norma Maugeri, Patrizia Rovere-Querini, Massimo Slavich, Giovanni Coppi, Andrea Doni, Barbara Bottazzi, Cecilia Garlanda, Domenico Cianflone, Attilio Maseri, Alberto Mantovani, and Angelo A. Manfredi*
- 980 Nod1 Activation by Bacterial iE-DAP Induces Maternal-Fetal Inflammation and Preterm Labor  
*Ingrid Cardenas, Melissa J. Mulla, Kledia Myrtili, Anna K. Sfakianaki, Errol R. Norwitz, Serkalem Tadesse, Seth Guller, and Vikki M. Abrahams*
- 987 FOXO3 Deficiency Leads to Increased Susceptibility to Cigarette Smoke-Induced Inflammation, Airspace Enlargement, and Chronic Obstructive Pulmonary Disease  
*Jae-woong Hwang, Saravanan Rajendrasozhan, Hongwei Yao, Sangwoon Chung, Isaac K. Sundar, Heidie L. Huyck, Gloria S. Pryhuber, Vuokko L. Kinnula, and Irfan Rahman*
- 999 Induction of Mucin and MUC5AC Expression by the Protease Activity of *Aspergillus fumigatus* in Airway Epithelial Cells  
*Tsuyoshi Oguma, Koichiro Asano, Katsuyoshi Tomomatsu, Motohiro Kodama, Koichi Fukunaga, Tetsuya Shiomi, Nao Ohmori, Soichiro Ueda, Takahisa Takihara, Yoshiki Shiraishi, Koichi Sayama, Shizuko Kagawa, Yukikazu Natori, Craig M. Lilly, Kazuo Satoh, Koichi Makimura, and Akitoshi Ishizaka*

## CLINICAL IMMUNOLOGY

- 1006 Circulating Activated and Effector Memory T Cells Are Associated with Calcification and Clonal Expansions in Bicuspid and Tricuspid Valves of Calcific Aortic Stenosis  
*Robert Winchester, Margrit Wiesendanger, Will O'Brien, Hui-Zhu Zhang, Mathew S. Maurer, Linda D. Gillam, Allan Schwartz, Charles Marboe, and Allan S. Stewart*
- 1015 Neonatal Fc Receptor Blockade by Fc Engineering Ameliorates Arthritis in a Murine Model  
*Dipesh A. Patel, Alberto Puig-Canto, Dilip Kumar Challa, Héctor Perez Montoyo, Raimund J. Ober, and E. Sally Ward*
- 1023 Anticardiac Myosin Immunity and Chronic Allograft Vasculopathy in Heart Transplant Recipients  
*Safa Kalache, Rajani Dinavahi, Sean Pinney, Anita Mehrotra, Madeleine W. Cunningham, and Peter S. Heeger*
- 1031 Stimulated  $\gamma\delta$  T Cells Increase the In Vivo Efficacy of Trastuzumab in HER-2<sup>+</sup> Breast Cancer  
*Aude-Hélène Capietto, Ludovic Martinet, and Jean-Jacques Fournié*
- 1039 Increased Frequencies of Myelin Oligodendrocyte Glycoprotein/MHC Class II-Binding CD4 Cells in Patients with Multiple Sclerosis  
*Khadir Raddassi, Sally C. Kent, Junbao Yang, Kasia Bourcier, Elizabeth M. Bradshaw, Vicki Seyfert-Margolis, Gerald T. Nepom, William W. Kwok, and David A. Hafler*
- 1047 Lenalidomide Enhances Antigen-Specific Activity and Decreases CD45RA Expression of T Cells from Patients with Multiple Myeloma  
*Brigitte Neuber, Isabelle Herth, Claudia Tolliver, Stefan Schoenland, Ute Hegenbart, Dirk Hose, Mathias Witzens-Harig, Anthony D. Ho, Hartmut Goldschmidt, Bernard Klein, and Michael Hundemer*
- 1057 Absence of Vasoactive Intestinal Peptide Expression in Hematopoietic Cells Enhances Th1 Polarization and Antiviral Immunity in Mice  
*Jian-Ming Li, Lauren Southerland, Mohammad S. Hossain, Cynthia R. Giver, Ying Wang, Kasia Darlak, Wayne Harris, James Waschek, and Edmund K. Waller*
- 1066 AUTHOR INDEX