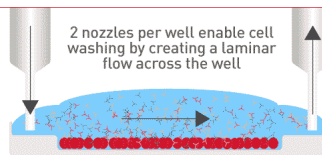


Check out how Laminar Wash systems replace centrifugation completely in handling cells



See How It Works



191 (2)

J Immunol 2013; 191:523-981; ;
<http://www.jimmunol.org/content/191/2>

This information is current as of March 20, 2019.

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.



IN THIS ISSUE

- 523 **Selecting for Length** *See article p. 561*
Orchestrating Tolerance with p38 α *See article p. 650*
Innate CD4 TCRs Regulate Selection *See article p. 737*
Malaria in the Crosshairs *See article p. 795*
Complementing CD14 Blockade *See article p. 819*
SARM Deficit Shields CNS from Harm *See article p. 875*

LETTERS TO THE EDITOR

- 525 Comment on “CXCL9 Causes Heterologous Desensitization of CXCL12-Mediated Memory T Lymphocyte Activation”
Graeme O’Boyle, Simi Ali, and John A. Kirby
- 525 Response to Comment on “CXCL9 Causes Heterologous Desensitization of CXCL12-Mediated Memory T Lymphocyte Activation”
Oliver Giegold, Nadine Ogrisek, and Heinfried H. Radeke

BRIEF REVIEWS

- 527 Immune Regulation in Obesity-Associated Adipose Inflammation
Jonathan M. Han and Megan K. Levings

CUTTING EDGE

- 535 Cutting Edge: ABIN-1 Protects against Psoriasis by Restricting MyD88 Signals in Dendritic Cells
Joseph A. Callahan, Gianna E. Hammer, Alexander Agelides, Bao H. Duong, Shigeru Oshima, Jeffrey North, Rommel Advincula, Nataliya Shifrin, Hong-An Truong, Jonathan Paw, Julio Barrera, Anthony DeFranco, Michael D. Rosenblum, Barbara A. Malynn, and Averil Ma

On the cover: Model of neutralizing Ab C3 bound to a poliovirus 135S particle. C3 Ab (blue ribbon) binds bivalently to adjacent epitopes on the surface of poliovirus (surface rendering, darker hues indicate portions of poliovirus capsid closer to the particle center). The virus–Ab interaction likely inhibits a conformational change necessary for infection. Lin, J., N. Cheng, J. M. Hogle, A. C. Steven, and D. M. Belnap. 2013. Conformational shift of a major poliovirus antigen confirmed by immuno-cryogenic electron microscopy. *J. Immunol.* 191: 884–891.

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 © 2013 by The American Association of Immunologists, Inc.

- 540 Cutting Edge: Prolonged Exposure to HIV Reinforces a Poised Epigenetic Program for PD-1 Expression in Virus-Specific CD8 T Cells
Ben Youngblood, Alessandra Noto, Filippos Porichis, Rama S. Akondy, Zaza M. Ndhlovu, James W. Austin, Rebeka Bordi, Francesco A. Procopio, Toshiyuki Miura, Todd M. Allen, John Sidney, Alessandro Sette, Bruce D. Walker, Rafi Ahmed, Jeremy M. Boss, Rafick-Pierre Sékaly, and Daniel E. Kaufmann

- 545 Cutting Edge: Conditional MHC Class II Expression Reveals a Limited Role for B Cell Antigen Presentation in Primary and Secondary CD4 T Cell Responses
Angela S. Archambault, Javier A. Carrero, Lisa G. Barnett, Nigel G. McGee, Julia Sim, Jonathan O. Wright, Tobias Raabe, Peiquin Chen, Hua Ding, Eric J. Allenspach, Ioannis Dragatsis, Terri M. Laufer, and Gregory F. Wu

ANTIGEN RECOGNITION AND RESPONSES

- 551 Phl p 1–Specific Human Monoclonal IgE and Design of a Hypoallergenic Group 1 Grass Pollen Allergen Fragment
Mattias Levin, Frida Rydnert, Eva Källström, Lor Wai Tan, Peter J. Wormald, Malin Lindstedt, Lennart Greiff, and Mats Ohlin
- 561 HLA Peptide Length Preferences Control CD8⁺ T Cell Responses
Melissa J. Rist, Alex Theodossis, Nathan P. Croft, Michelle A. Neller, Andrew Welland, Zhenjun Chen, Lucy C. Sullivan, Jacqueline M. Burrows, John J. Miles, Rebekah M. Brennan, Stephanie Gras, Rajiv Khanna, Andrew G. Brooks, James McCluskey, Anthony W. Purcell, Jamie Rossjohn, and Scott R. Burrows
- 572 The Mechanism of Splenic Invariant NKT Cell Activation Dictates Localization In Vivo
Irah L. King, Eyal Amiel, Mike Tighe, Katja Mohrs, Natacha Veerapen, Gurdyal Besra, Markus Mohrs, and Elizabeth A. Leadbetter
- 583 HLA-A*01:03, HLA-A*24:02, HLA-B*08:01, HLA-B*27:05, HLA-B*35:01, HLA-B*44:02, and HLA-C*07:01 Monochain Transgenic/H-2 Class I Null Mice: Novel Versatile Preclinical Models of Human T Cell Responses
Rachid Boucherma, Hédia Kridane-Miledi, Romain Bouziat, Michael Rasmussen, Tanja Gatard, Francina Langa-Vives, Brigitte Lemercier, Annick Lim, Marion Bérard, Lbahir BenMohamed, Søren Buus, Ronald Rooke, and François A. Lemonnier

AUTOIMMUNITY

- 594 Different Modulation of *Ptpn22* in Effector and Regulatory T Cells Leads to Attenuation of Autoimmune Diabetes in Transgenic Nonobese Diabetic Mice
Li-Tzu Yeh, Shi-Chuen Miau, Ming-Hong Lin, Feng-Cheng Chou, Shing-Jia Shieh, Yi-Ping Chuang, Shih-Hua Lin, Deb-Ming Chang, and Huey-Kang Sytwu
- 608 Different Stages of Primary Sjögren's Syndrome Involving Lymphotoxin and Type 1 IFN
Long Shen, Lakshmanan Suresh, Kishore Malyavantham, Przemek Kowal, Jingxiu Xuan, Matthew J. Lindemann, and Julian L. Ambrus, Jr.
- 614 Systemic Lack of Canonical Histamine Receptor Signaling Results in Increased Resistance to Autoimmune Encephalomyelitis
Narasha Saligrama, Laure K. Case, Roxana del Rio, Rajkumar Noubade, and Cory Teuscher

CLINICAL AND HUMAN IMMUNOLOGY

- 623 Longitudinal and Integrative Biomodeling of Effector and Memory Immune Compartments after Inactivated Influenza Vaccination
Olivia Bonduelle, Nora Yabia, Sophie Siberil, Nora Benhabiles, Fabrice Carrat, Anne Krivine, Flore Rozenberg, Jordan Dimitrov, Srinivasa V. Kaveri, Angélique Curjol, Malka Tindel, Martine Louet, Florent Desert, Odile Launay, Pierre Loulergue, Gwenaëlle Badre, Christine Katlama, François Bricaire, Assia Samri, Dominique Rousset, Sylvie van der Werf, Stéphane Jauréguiberry, and Behazine Combadiere

IMMUNE REGULATION

- 632 T Cell Activation Threshold Regulated by E3 Ubiquitin Ligase Cbl-b Determines Fate of Inducible Regulatory T Cells
Guilin Qiao, Yixia Zhao, Zhenping Li, Peter Q. Tang, Wallace Y. Langdon, Tianlan Yang, and Jian Zhang

- 640 HuR Is Required for IL-17–Induced Act1-Mediated CXCL1 and CXCL5 mRNA Stabilization
Tomasz Herjan, Peng Yao, Wen Qian, Xiao Li, Caini Liu, Katarzyna Bulek, Dongxu Sun, Wen-Pin Yang, Jun Zhu, Aiqing He, Julie A. Carman, Serpil C. Erzurum, Howard D. Lipshitz, Paul L. Fox, Thomas A. Hamilton, and Xiaoxia Li
- 650 Control of T Cell Fates and Immune Tolerance by p38 α Signaling in Mucosal CD103⁺ Dendritic Cells
Gonghua Huang, Yanyan Wang, and Hongbo Chi
- 660 Human Bocavirus VP2 Upregulates IFN- β Pathway by Inhibiting Ring Finger Protein 125–Mediated Ubiquitination of Retinoic Acid–Inducible Gene-1
Huanle Luo, Zhenfeng Zhang, Zhenhua Zheng, Xianliang Ke, Xiaowei Zhang, Qian Li, Yan Liu, Bingke Bai, Panyong Mao, Qinxue Hu, and Hanzhong Wang
- 670 IL-4 Upregulates Ig α and Ig β Protein, Resulting in Augmented IgM Maturation and B Cell Receptor–Triggered B Cell Activation
Benchang Guo and Thomas L. Rothstein
- 678 STAT4 and T-bet Are Required for the Plasticity of IFN- γ Expression across Th2 Ontogeny and Influence Changes in *Irfng* Promoter DNA Methylation
Christopher L. Williams, Marcia M. Schilling, Sung Hoon Cho, Keunwook Lee, Mei Wei, Aditi, and Mark Boothby
- 688 Contrasting Effects of Anti-Ly49A Due to MHC Class I *cis* Binding on NK Cell–Mediated Allogeneic Bone Marrow Cell Resistance
Maite Alvarez, Can M. Sungur, Erik Ames, Stephen K. Anderson, Claire Pomeroy, and William J. Murphy
- 699 Critical Role of the Tumor Suppressor Tuberous Sclerosis Complex 1 in Dendritic Cell Activation of CD4 T Cells by Promoting MHC Class II Expression via IRF4 and CIITA
Hongjie Pan, Thomas F. O'Brien, Gabriela Wright, Jialong Yang, Jinwook Shin, Kenneth L. Wright, and Xiao-Ping Zhong
- 708 RKIP Contributes to IFN- γ Synthesis by CD8⁺ T Cells after Serial TCR Triggering in Systemic Inflammatory Response Syndrome
Kyle T. Wright and Anthony T. Vella
- 717 An Alternative Role for Foxp3 As an Effector T Cell Regulator Controlled through CD40
Gisela M. Vaitaitis, Jessica R. Carter, Dan M. Waid, Michael H. Olmstead, and David H. Wagner, Jr.

IMMUNE SYSTEM DEVELOPMENT

- 726 Notch-Regulated Periphery B Cell Differentiation Involves Suppression of E Protein Function
Ping Zhang, Ying Zhao, and Xiao-Hong Sun
- 737 A Transgenic TCR Directs the Development of IL-4⁺ and PLZF⁺ Innate CD4 T Cells
Lingqiao Zhu, Yu Qiao, Esther S. Choi, Joy Das, Derek B. Sant'Angelo, and Cheong-Hee Chang
- 745 Hoxa9 and Flt3 Signaling Synergistically Regulate an Early Checkpoint in Lymphopoiesis
Kimberly A. Gwin, Mariya B. Shapiro, Joseph J. Dolence, Zhixin L. Huang, and Kay L. Medina

IMMUNOTHERAPY AND VACCINES

- 755 Immunotherapy of Radioresistant Mammary Tumors with Early Metastasis Using Molecular Chaperone Vaccines Combined with Ionizing Radiation
Desheng Weng, Baizheng Song, Shigeo Koido, Stuart K. Calderwood, and Jianlin Gong
- 764 Orchestration of CD4 T Cell Epitope Preferences after Multi-peptide Immunization
Jacqueline Tung and Andrea J. Sant

INFECTIOUS DISEASE AND HOST RESPONSE

- 773 Microenvironments in Tuberculous Granulomas Are Delineated by Distinct Populations of Macrophage Subsets and Expression of Nitric Oxide Synthase and Arginase Isoforms
Joshua T. Mattila, Olabisi O. Ojo, Diane Kepka-Lenhart, Simeone Marino, Jin Hee Kim, Seok Yong Eum, Laura E. Via, Clifton E. Barry, III, Edwin Klein, Denise E. Kirschner, Sidney M. Morris, Jr., Philana Ling Lin, and JoAnne L. Flynn

- 785 Erythrocyte-Binding Antigens of *Plasmodium falciparum* Are Targets of Human Inhibitory Antibodies and Function To Evade Naturally Acquired Immunity
Kristina E. M. Persson, Freya J. I. Fowkes, Fiona J. McCallum, Nimmo Gicheru, Linda Reiling, Jack S. Richards, Danny W. Wilson, Sash Lopaticki, Alan F. Cowman, Kevin Marsh, and James G. Beeson
- 795 Identification and Prioritization of Merozoite Antigens as Targets of Protective Human Immunity to *Plasmodium falciparum* Malaria for Vaccine and Biomarker Development
Jack S. Richards, Thangavelu U. Arumugam, Linda Reiling, Julie Healer, Anthony N. Hodder, Freya J. I. Fowkes, Nadia Cross, Christine Langer, Satoru Takeo, Alex D. Uboldi, Jennifer K. Thompson, Paul R. Gilson, Ross L. Coppel, Peter M. Siba, Christopher L. King, Motomi Torii, Chetan E. Chitnis, David L. Narum, Ivo Mueller, Brendan S. Crabb, Alan F. Cowman, Takafumi Tsuboi, and James G. Beeson
- 810 B Cell–Intrinsic TLR7 Signaling Is Required for Optimal B Cell Responses during Chronic Viral Infection
Jonathan M. Clingan and Mehrdad Matloubian

INNATE IMMUNITY AND INFLAMMATION

- 819 Combined Inhibition of Complement (C5) and CD14 Markedly Attenuates Inflammation, Thrombogenicity, and Hemodynamic Changes in Porcine Sepsis
Andreas Barratt-Due, Ebbe B. Thorgersen, Kjetil Egge, Søren Pischke, Andrey Sokolov, Bernt C. Hellerud, Julie K. Lindstad, Anne Pharo, Anjan K. Bongoni, Robert Rieben, Miles Nunn, Helge Scott, and Tom E. Molnes
- 828 CD160 Activation by Herpesvirus Entry Mediator Augments Inflammatory Cytokine Production and Cytolytic Function by NK Cells
John R. Sedý, Ryan L. Bjordahl, Vasileios Bekiaris, Matthew G. Macauley, Brian C. Ware, Paula S. Norris, Nell S. Lurain, Chris A. Benedict, and Carl F. Ware
- 837 *Trp53* Deficiency Protects against Acute Intestinal Inflammation
Martina E. Spehlmann, Carolin F. Manthey, Sara M. Dann, Elaine Hanson, Sukhman S. Sandhu, Linus Y. Liu, Farid K. Abdelmalak, Michaela A. Diamanti, Kristin Retzlaff, Jürgen Scheller, Stefan Rose-John, Florian R. Greten, Jean Y. J. Wang, and Lars Eckmann
- 848 Neutrophil Recruitment to the Lung in Both C5a- and CXCL1-Induced Alveolitis Is Impaired in Vitamin D–Binding Protein–Deficient Mice
Glenda Trujillo, David M. Habel, Lingyin Ge, Mahalakshmi Ramadass, Nancy E. Cooke, and Richard R. Kew
- 857 TLR4 Signaling Augments Monocyte Chemotaxis by Regulating G Protein–Coupled Receptor Kinase 2 Translocation
Zheng Liu, Yong Jiang, Yuehua Li, Juan Wang, Liyan Fan, Melanie J. Scott, Guozhi Xiao, Song Li, Timothy R. Billiar, Mark A. Wilson, and Jie Fan
- 865 β -Defensin 2 and 3 Promote the Uptake of Self or CpG DNA, Enhance IFN- α Production by Human Plasmacytoid Dendritic Cells, and Promote Inflammation
Poonam Tewary, Gonzalo de la Rosa, Neeraj Sharma, Luis G. Rodriguez, Sergey G. Tarasov, O. M. Zack Howard, Hidekazu Shirota, Folkert Steinhausen, Dennis M. Klinman, De Yang, and Joost J. Oppenheim
- 875 SARM Is Required for Neuronal Injury and Cytokine Production in Response to Central Nervous System Viral Infection
Ying-Ju Hou, Rebecca Banerjee, Bobby Thomas, Carl Nathan, Adolfo García-Sastre, Aihao Ding, and Melissa B. Uccellini

MOLECULAR AND STRUCTURAL IMMUNOLOGY

- 884 Conformational Shift of a Major Poliovirus Antigen Confirmed by Immuno-Cryogenic Electron Microscopy
Jun Lin, Naiqian Cheng, James M. Hogle, Alasdair C. Steven, and David M. Belnap
- 892 SASH1 Is a Scaffold Molecule in Endothelial TLR4 Signaling
Shauna M. Dauphinee, Ashley Clayton, Angela Hussainkhel, Cindy Yang, Yoo-Jin Park, Megan E. Fuller, Josip Blonder, Timothy D. Veenstra, and Aly Karsan
- 902 Opposing Roles of STAT4 and Dnmt3a in Th1 Gene Regulation
Duy Pham, Qing Yu, Crystal C. Walline, Rajarajeswari Muthukrishnan, Janice S. Blum, and Mark H. Kaplan

- 912 An Engineered Construct Combining Complement Regulatory and Surface-Recognition Domains Represents a Minimal-Size Functional Factor H

Mario Hebecker, María Alba-Domínguez, Lubka T. Roumenina, Stefanie Reuter, Satu Hyvärinen, Marie-Agnès Dragon-Durey, T. Sakari Jokiranta, Pilar Sánchez-Corral, and Mihály Józsi

MUCOSAL IMMUNOLOGY

- 922 Inhaled Birch Pollen Extract Induces Airway Hyperresponsiveness via Oxidative Stress but Independently of Pollen-Intrinsic NADPH Oxidase Activity, or the TLR4–TRIF Pathway

Karim H. Shalaby, Alexandra Allard-Coutu, Michael J. O’Sullivan, Emily Nakada, Salman T. Qureshi, Brian J. Day, and James G. Martin

- 934 Viral Infection of the Pregnant Cervix Predisposes to Ascending Bacterial Infection

Karen Racicot, Ingrid Cardenas, Vera Wünsche, Paulomi Aldo, Seth Guller, Robert E. Means, Roberto Romero, and Gil Mor

- 942 Critical Role of Dendritic Cells in T Cell Retention in the Interfollicular Region of Peyer’s Patches

Takashi Obata, Naoko Shibata, Yoshiyuki Goto, Izumi Ishikawa, Shintaro Sato, Jun Kunisawa, and Hiroshi Kiyono

- 949 Paraoxonase-1 Suppresses Experimental Colitis via the Inhibition of IFN- γ Production from CD4 T Cells

Junji Yamashita, Chiaki Iwamura, Toshibiro Ito, Masakuni Narita, Yukio Hara, Tetsuya Sasaki, Daisuke Masuda, Munehisa Takahashi, Manami Tsuchiya, Kaori Hada, Makoto Ishikawa, Takato Matsuo, Yoichi Ohno, Hitoshi Tanaka, Hideya Maruyama, Yasumasa Ogawa, and Toshinori Nakayama

TUMOR IMMUNOLOGY

- 961 Inflammatory Cytokine–Mediated Evasion of Virus-Induced Tumors from NK Cell Control

Rabinarayan Mishra, Bojan Polic, Raymond M. Welsh, and Eva Szomolanyi-Tsuda

- 971 Tumor-Derived Vascular Pericytes Anergize Th Cells

Anamika Bose, Subbasis Barik, Saptak Banerjee, Tithi Ghosh, Atanu Mallick, Suchandra Bhattacharyya Majumdar, Kuntal Kanti Goswami, Avishek Bhuniya, Sayantan Banerjee, Rathindranath Baral, Walter J. Storkus, Partha Sarathi Dasgupta, and Subrata Majumdar

- 982 AUTHOR INDEX