

Guava[®] and Amnis[®]
Flow Cytometers
are Now Part of Luminex.



Luminex[®]
complexity simplified.



190 (10)

J Immunol 2013; 190:4913-5336; ;
<http://www.jimmunol.org/content/190/10>

This information is current as
of February 22, 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.



4913 **IN THIS ISSUE**

BRIEF REVIEWS

- 4915 Chromatin Architecture, CCCTC-Binding Factor, and V(D)J Recombination: Managing Long-Distance Relationships at Antigen Receptor Loci
Han-Yu Shih and Michael S. Krangel

CUTTING EDGE

- 4923 Cutting Edge: Macrophages Are Required for Localization of Antigen-Activated B Cells to the Follicular Perimeter and the Subsequent Germinal Center Response
Neda Nikbakht, Shixue Shen, and Tim Manser

ALLERGY AND OTHER HYPERSENSITIVITIES

- 4929 Cannabinoid 1 Receptors in Keratinocytes Modulate Proinflammatory Chemokine Secretion and Attenuate Contact Allergic Inflammation
Evelyn Gaffal, Mira Cron, Nicole Glodde, Tobias Bald, Rohini Kuner, Andreas Zimmer, Beat Lutz, and Thomas Tüting
- 4937 Pin1–FADD Interactions Regulate Fas-Mediated Apoptosis in Activated Eosinophils
Jiyoung Oh and James S. Malter
- 4946 Control of the STAT6–BCL6 Antagonism by SWAP-70 Determines IgE Production
Tatiana Audzevich, Glen Pearce, Michael Breucha, Gamze Günel, and Rolf Jessberger

ANTIGEN RECOGNITION AND RESPONSES

- 4956 HLA Haplotype Determines Hapten or p-i T Cell Reactivity to Flucloxacillin
Natascha Wuillemin, Jacqueline Adam, Stefano Fontana, Stephan Krähenbühl, Werner J. Pichler, and Daniel Yerly

On the cover: Single-cell Ca^{2+} live imaging in classified T cells. Color-coded details of an ongoing Ca^{2+} imaging experiment at a single measurement point. Warmer colors (yellow/red) indicate high Ca^{2+} influx while colder colors (blue/pink) indicate low Ca^{2+} influx in TCR-triggered CD4^{+} T cells. Schwarz, A., M. Schumacher, D. Pfaff, K. Schumacher, S. Jarius, B. Balint, H. Wiendl, J. Haas, and B. Wildemann. 2013. Fine-tuning of regulatory T cell function: the role of calcium signals and naive regulatory T cells for regulatory T cell deficiency in multiple sclerosis. *J. Immunol.* 190: 4965–4970.

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.

AUTOIMMUNITY

- 4965 Fine-Tuning of Regulatory T Cell Function: The Role of Calcium Signals and Naive Regulatory T Cells for Regulatory T Cell Deficiency in Multiple Sclerosis
Alexander Schwarz, Marijana Schumacher, Daniel Pfaff, Kai Schumacher, Sven Jarius, Bettina Balint, Heinz Wiendl, Jürgen Haas, and Brigitte Wildemann
- 4971 Local “On-Demand” Generation and Function of Antigen-Specific Foxp3⁺ Regulatory T Cells
Scott W. McPherson, Neal D. Heuss, and Dale S. Gregerson
- 4982 Role of Nucleic Acid–Sensing TLRs in Diverse Autoantibody Specificities and Anti-Nuclear Antibody–Producing B Cells
Yi Ting Koh, John C. Scatizzi, Jennifer D. Gahan, Brian R. Lawson, Roberto Baccala, K. Michael Pollard, Bruce A. Beutler, Argyrios N. Theofilopoulos, and Dwight H. Kono
- 4991 The Influence of T Cell Ig Mucin-3 Signaling on Central Nervous System Autoimmune Disease Is Determined by the Effector Function of the Pathogenic T Cells
Sarah Y. Lee and Joan M. Goverman
- 5000 Regulation of Th1 Cells and Experimental Autoimmune Encephalomyelitis by Glycogen Synthase Kinase-3
Éléonore Beurel, Oksana Kaidanovich-Beilin, Wen-I Yeh, Ling Song, Valle Palomo, Suzanne M. Michalek, James R. Woodgett, Laurie E. Harrington, Hagit Eldar-Finkelman, Ana Martinez, and Richard S. Jope

CLINICAL AND HUMAN IMMUNOLOGY

- 5012 Identification of B Cell Defects Using Age-Defined Reference Ranges for In Vivo and In Vitro B Cell Differentiation
Daan J. aan de Kerk, Machiel H. Jansen, Ineke J. M. ten Berge, Ester M. M. van Leeuwen, and Taco W. Kuijpers

IMMUNE REGULATION

- 5020 High Viral Burden Restricts Short-Lived Effector Cell Number at Late Times Postinfection through Increased Natural Regulatory T Cell Expansion
Samuel Amoah, Beth C. Holbrook, Rama D. Yammani, and Martha A. Alexander-Miller
- 5030 Butyrophilin Btn2a2 Inhibits TCR Activation and Phosphatidylinositol 3-Kinase/Akt Pathway Signaling and Induces Foxp3 Expression in T Lymphocytes
Johannes U. Ammann, Anne Cooke, and John Trousdale
- 5037 Neutrophils Confer T Cell Resistance to Myeloid-Derived Suppressor Cell–Mediated Suppression To Promote Chronic Inflammation
Sean O. Ryan, Jenny L. Johnson, and Brian A. Cobb
- 5048 Dopamine Receptor D3 Expressed on CD4⁺ T Cells Favors Neurodegeneration of Dopaminergic Neurons during Parkinson’s Disease
Hugo González, Francisco Contreras, Carolina Prado, Daniela Elgueta, Dafne Franz, Sebastián Bernales, and Rodrigo Pacheco
- 5057 GARP–TGF- β Complexes Negatively Regulate Regulatory T Cell Development and Maintenance of Peripheral CD4⁺ T Cells In Vivo
Angela X. Zhou, Lina Kozhaya, Hodaka Fujii, and Derya Unutmaz
- 5065 Mesenchymal Stem Cells Tune the Development of Monocyte-Derived Dendritic Cells Toward a Myeloid-Derived Suppressive Phenotype through Growth-Regulated Oncogene Chemokines
Hsin-Wei Chen, Hsin-Yu Chen, Li-Tzu Wang, Fu-Hui Wang, Li-Wen Fang, Hsiu-Yu Lai, Hsuan-Hsu Chen, Jean Lu, Ming-Shiu Hung, Yao Cheng, Mei-Yu Chen, Shih-Jen Liu, Pele Chong, Oscar Kuang-Sheng Lee, and Shu-Ching Hsu
- 5078 CD43-Mediated IFN- γ Production by CD8⁺ T Cells Promotes Abdominal Aortic Aneurysm in Mice
Hui-fang Zhou, Huimin Yan, Judy L. Cannon, Luke E. Springer, Jonathan M. Green, and Christine T. N. Pham
- 5086 Impaired Autophagy, Defective T Cell Homeostasis, and a Wasting Syndrome in Mice with a T Cell–Specific Deletion of Vps34
Vrajesh V. Parekh, Lan Wu, Kelli L. Boyd, Janice A. Williams, Jennifer A. Gaddy, Danyvid Olivares-Villagómez, Timothy L. Cover, Wei-Xing Zong, Jianhua Zhang, and Luc Van Kaer

- 5102 MicroRNA-146a Negatively Regulates the Immunoregulatory Activity of Bone Marrow Stem Cells by Targeting Prostaglandin E₂ Synthase-2
Mariola Matysiak, Maria Fortak-Michalska, Bożena Szymanska, Wojciech Orlowski, Anna Jurewicz, and Krzysztof Selmaj

IMMUNE SYSTEM DEVELOPMENT

- 5110 Lymphotoxin β Receptor Regulates the Development of CCL21-Expressing Subset of Postnatal Medullary Thymic Epithelial Cells
Enkhsaikhan Lkhagvasuren, Mie Sakata, Izumi Ohigashi, and Yousuke Takahama

IMMUNOGENETICS

- 5118 *IFNAR1* Controls Progression to Cerebral Malaria in Children and CD8⁺ T Cell Brain Pathology in *Plasmodium berghei*-Infected Mice
Elizabeth Ann Ball, Maria Rosário Sambo, Madalena Martins, Maria Jesus Trovoada, Carla Benchimol, João Costa, Lígia Antunes Gonçalves, António Coutinho, and Carlos Penha-Gonçalves

INFECTIOUS DISEASE AND HOST RESPONSE

- 5128 The Survival of Memory CD8 T Cells That Is Mediated by IL-15 Correlates with Sustained Protection Against Malaria
Stasya Zarling, Dmitriy Berenzon, Sarat Dalai, Dmitry Liepinsb, Nick Steers, and Urszula Krzych
- 5142 Hepatitis B Virus Surface Antigen Selectively Inhibits TLR2 Ligand-Induced IL-12 Production in Monocytes/Macrophages by Interfering with JNK Activation
Sen Wang, Zhiao Chen, Conghua Hu, Fangxing Qian, Yuming Cheng, Min Wu, Bisheng Shi, Jieliang Chen, Yunwen Hu, and Zhenghong Yuan
- 5152 Lipopolysaccharide Clearance, Bacterial Clearance, and Systemic Inflammatory Responses Are Regulated by Cell Type-Specific Functions of TLR4 during Sepsis
Meihong Deng, Melanie J. Scott, Patricia Loughran, Gregory Gibson, Chhinder Sodhi, Simon Watkins, David Hackam, and Timothy R. Billiar
- 5161 Modulation of Mycobacterial-Specific Th1 and Th17 Cells in Latent Tuberculosis by Coincident Hookworm Infection
Parakkal Jovvian George, Rajamanickam Anuradha, Paramasivam Paul Kumaran, Vedachalam Chandrasekaran, Thomas B. Nutman, and Subash Babu

INNATE IMMUNITY AND INFLAMMATION

- 5169 A Phosphatidylinositol Species Acutely Generated by Activated Macrophages Regulates Innate Immune Responses
Luis Gil-de-Gómez, Alma M. Astudillo, Clara Meana, Julio M. Rubio, Carlos Guijas, María A. Balboa, and Jesús Balsinde
- 5178 Regulator of Calcineurin 1 Suppresses Inflammation during Respiratory Tract Infections
Robert D. Junkins, Adam J. MacNeil, Zhengli Wu, Craig McCormick, and Tong-Jun Lin
- 5187 The NADPH Oxidase Pathway Is Dysregulated by the P2X₇ Receptor in the SOD1-G93A Microglia Model of Amyotrophic Lateral Sclerosis
Savina Apolloni, Chiara Parisi, Maria Grazia Pesaresi, Simona Rossi, Maria Teresa Carri, Mauro Cozzolino, Cinzia Volonté, and Nadia D'Ambrosi
- 5196 Reduced Caveolin-1 Promotes Hyperinflammation due to Abnormal Heme Oxygenase-1 Localization in Lipopolysaccharide-Challenged Macrophages with Dysfunctional Cystic Fibrosis Transmembrane Conductance Regulator
Ping-Xia Zhang, Thomas S. Murray, Valeria R. Vilella, Eleonora Ferrari, Speranza Esposito, Anthony D'Souza, Valeria Raia, Luigi Maiuri, Diane S. Krause, Marie E. Egan, and Emanuela M. Bruscia
- 5207 Bruton's Tyrosine Kinase Is Required for Apoptotic Cell Uptake via Regulating the Phosphorylation and Localization of Calreticulin
Jennifer C. Byrne, Joan Ní Gabhann, Kevin B. Stacey, Barbara M. Coffey, Eoghan McCarthy, Warren Thomas, and Caroline A. Jefferies

- 5216 Mouse, but not Human STING, Binds and Signals in Response to the Vascular Disrupting Agent 5,6-Dimethylxanthenone-4-Acetic Acid
Joseph Conlon, Dara L. Burdette, Shruti Sharma, Numana Bhat, Mikayla Thompson, Zhaozhao Jiang, Vijay A. K. Rathinam, Brian Monks, Tengchuan Jin, T. Sam Xiao, Stefanie N. Vogel, Russell E. Vance, and Katherine A. Fitzgerald
- 5226 Chemokine Receptor CXCR6-Dependent Hepatic NK T Cell Accumulation Promotes Inflammation and Liver Fibrosis
Alexander Wehr, Christer Baeck, Felix Heymann, Patricia Maria Niemietz, Linda Hammerich, Christian Martin, Henning W. Zimmermann, Oliver Pack, Nikolaus Gassler, Kanishka Hittatiya, Andreas Ludwig, Tom Luedde, Christian Trautwein, and Frank Tacke
- 5237 IL-17 Stimulates Differentiation of Human Anti-Inflammatory Macrophages and Phagocytosis of Apoptotic Neutrophils in Response to IL-10 and Glucocorticoids
Gaetano Zizzo and Philip L. Cohen
- 5247 Hemorrhagic Shock Augments Nlrp3 Inflammasome Activation in the Lung through Impaired Pyrin Induction
Peng Xu, Zongmei Wen, Xueyin Shi, Yuehua Li, Liyan Fan, Meng Xiang, Aijun Li, Melanie J. Scott, Guozhi Xiao, Song Li, Timothy R. Billiar, Mark A. Wilson, and Jie Fan
- 5256 The Novel Role of IL-7 Ligation to IL-7 Receptor in Myeloid Cells of Rheumatoid Arthritis and Collagen-Induced Arthritis
Zhenlong Chen, Seung-jae Kim, Nathan D. Chamberlain, Sarah R. Pickens, Michael V. Volin, Suncica Volkov, Shiva Arami, John W. Christman, Bellur S. Prabhakar, William Swedler, Anjali Mehta, Nadera Sweiss, and Shiva Shahrara
- 5267 CD163 and IgG Codefend against Cytotoxic Hemoglobin via Autocrine and Paracrine Mechanisms
Karthik Subramanian, Ruijuan Du, Nguan Soon Tan, Bow Ho, and Jeak Ling Ding

MOLECULAR AND STRUCTURAL IMMUNOLOGY

- 5279 Phosphatidylinositol 4-Phosphate 5-Kinase α Activation Critically Contributes to CD28-Dependent Signaling Responses
Michela Muscolini, Cristina Camperio, Cristina Capuano, Silvana Caristi, Enza Piccoella, Ricciarda Galandrini, and Loretta Tuosto
- 5287 Acidic Amino Acid Residues in the Juxtamembrane Region of the Nucleotide-Sensing TLRs Are Important for UNC93B1 Binding and Signaling
Jihee Kim, Jiwon Huh, Misun Huang, Eun-Hye Kwon, Da-Jung Jung, Melanie M. Brinkmann, Myoung Ho Jang, Hidde L. Ploegh, and You-Me Kim

MUCOSAL IMMUNOLOGY

- 5296 Intestinal Lin⁻c-Kit⁺NKp46⁻CD4⁻ Population Strongly Produces IL-22 upon IL-1 β Stimulation
Youngae Lee, Yutaro Kumagai, Min Seong Jang, Jung-Hwan Kim, Bo-Gie Yang, Eun-Jung Lee, You-Me Kim, Shizuo Akira, and Myoung Ho Jang
- 5306 IL-22 Deficiency Alters Colonic Microbiota To Be Transmissible and Colitogenic
Lauren A. Zenewicz, Xiaochen Yin, Guoyang Wang, Eran Elinav, Liming Hao, Liping Zhao, and Richard A. Flavell
- 5313 TLR Activation Excludes Circulating Naive CD8⁺ T Cells from Gut-Associated Lymphoid Organs in Mice
Simon Heidegger, Sophie-Kathrin Kirchner, Nicolas Stephan, Bernadette Bohn, Nina Subhartha, Christian Hotz, David Anz, Nadja Sandholzer, Bärbel Stecher, Holger Rüssmann, Stefan Endres, and Carole Bourquin

TUMOR IMMUNOLOGY

- 5321 Neuroblastoma-Derived TGF- β 1 Modulates the Chemokine Receptor Repertoire of Human Resting NK Cells
Roberta Castriconi, Alessandra Dondero, Francesca Bellora, Lorenzo Moretta, Aurora Castellano, Franco Locatelli, Maria Valeria Corrias, Alessandro Moretta, and Cristina Bottino

5329 G Protein–Coupled Receptor Kinase 6 Deficiency Promotes Angiogenesis, Tumor Progression, and Metastasis

Sandeep K. Raghuvanshi, Nikia Smith, Elizabeth J. Rivers, Ariel J. Thomas, Natalie Sutton, Yuhui Hu, Somnath Mukhopadhyay, Xiaoxin L. Chen, TinChung Leung, and Ricardo M. Richardson

5337 AUTHOR INDEX