

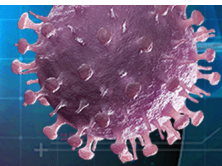


The Most Comprehensive Portfolio
of SARS-CoV-2 Reagents

- Recombinant Antibodies
- Sandwich ELISA Pairs
- Recombinant Proteins
- FFPE Cell Pellet Blocks

LEARN MORE

<https://www.genetex.com/covid19>



The Journal of
Immunology

202 (11)

J Immunol 2019; 202:3115-3335; ;
<http://www.jimmunol.org/content/202/11>

This information is current as
of September 25, 2020.

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.



VOL. 202 | NO. 11 | June 1, 2019 | Pages 3115–3336

PRESIDENT'S ADDRESS

- 3115 Fifty Years (Well, Almost!) in Immunology
Wayne M. Yokoyama

IN THIS ISSUE

- 3123 **Clonal Deletion: The Big Picture** *See article p. 3226*
Promising New RSV Vaccine Candidate *See article p. 3234*
Role for CD82 in *Candida* Infection *See article p. 3256*
A Microbial Twist in Macrophages *See article p. 3297*

PILLARS OF IMMUNOLOGY

- 3125 Mystery Solved: IL-15
Todd A. Fehniger

BRIEF REVIEWS

- 3127 Intracellular Neutrophil Oxidants: From Laboratory Curiosity to Clinical Reality
Claes Dahlgren, Anna Karlsson, and Johan Bylund

CUTTING EDGE

- 3137 Cutting Edge: ATM Influences Germinal Center Integrity
Laura Nicolas, Monserrat Cols, Ryan Smolkin, Keith C. Fernandez, William T. Yewdell, Wei-Feng Yen, Shan Zha, Bao Q. Vuong, and Jayanta Chaudhuri

AUTOIMMUNITY

- 3143 Citrullination Controls Dendritic Cell Transdifferentiation into Osteoclasts
Akilan Krishnamurthy, A. Jimmy Ytterberg, Meng Sun, Koji Sakuraba, Johanna Steen, Vijay Joshua, Nataliya K. Tarasova, Vivianne Malmström, Heidi Wähämaa, Bence Réthi, and Anca I. Catrina

On the cover: Image shows the infiltration of Ly6G⁺ neutrophils (red) and Ccr2^{Pos} monocytes/macrophages (green) into the hearts of mice challenged with a *Candida albicans* water-soluble complex to induce cardiac vasculitis. Stock, A. T., N. Collins, G. K. Smyth, Y. Hu, J. A. Hansen, D. B. D'Silva, H. A. Jama, A. M. Lew, T. Gebhardt, C. A. McLean, and I. P. Wicks. 2019. The selective expansion and targeted accumulation of bone marrow-derived macrophages drive cardiac vasculitis. *J. Immunol.* 202: 3282–3296.

The Journal of Immunology (ISSN 0022-1767) is published twice each month by The American Association of Immunologists, Inc., 1451 Rockville Pike, Suite 650, Rockville, MD 20852, Phone: 301-634-7197, Fax: 301-246-8401. Subscription terms: New subscriptions and renewals begin January 1 and expire one year later (see <http://www.jimmunol.org/subscription> 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/Subscription/Claims>). Reprints of individual articles are available only from authors. Periodicals postage paid at Rockville, MD 20852, 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, 1451 Rockville Pike, Suite 650, Rockville, MD 20852. Copyright © 2019 by The American Association of Immunologists, Inc.

- 3151 TNF and IL-1 Play Essential but Temporally Distinct Roles in Driving Cardiac Inflammation in a Murine Model of Kawasaki Disease
Angus T. Stock, Hamdi A. Jama, Jacinta A. Hansen, and Ian P. Wicks
- 3161 Strain-Specific Manifestation of Lupus-like Systemic Autoimmunity Caused by *Zap70* Mutation
Takashi Matsuo, Motomu Hashimoto, Shimon Sakaguchi, Noriko Sakaguchi, Yoshinaga Ito, Masaki Hikida, Tatsuaki Tsuruyama, Kaoru Sakai, Hideki Yokoi, Mirei Shirakashi, Masao Tanaka, Hiromu Ito, Hajime Yoshifuji, Koichiro Ohmura, Takao Fujii, and Tsuneyo Mimori

IMMUNE REGULATION

- 3173 A New IRF-1–Driven Apoptotic Pathway Triggered by IL-4/IL-13 Kills Neonatal Th1 Cells and Weakens Protection against Viral Infection
Mindy M. Miller, Subhasis Barik, Alexis N. Cattin-Roy, Tobeckukwu K. Ukah, Christine M. Hoeman, and Habib Zaghواني
- 3187 Dlg1 Maintains Dendritic Cell Function by Securing Voltage-Gated K⁺ Channel Integrity
Xuejiao Dong, Lisi Wei, Xueheng Guo, Zhiyong Yang, Chuan Wu, Peiyu Li, Lu Lu, Hai Qi, Yan Shi, Xiaoyu Hu, Li Wu, Liangyi Chen, and Wanli Liu
- 3198 Runx1 and ROR γ t Cooperate to Upregulate IL-22 Expression in Th Cells through Its Distal Enhancer
Masayuki Sekimata, Daiki Yoshida, Akemi Araki, Hironobu Asao, Ken Iseki, and Akiko Murakami-Sekimata

IMMUNE SYSTEM DEVELOPMENT

- 3211 Critical Role for TCR Signal Strength and MHC Specificity in ThPOK-Induced CD4 Helper Lineage Choice
Nabil Zeidan, Hassan Damen, Denis-Claude Roy, and Vibhuti P. Dave
- 3226 Measuring Thymic Clonal Deletion at the Population Level
Elise R. Breed, Masashi Watanabe, and Kristin A. Hogquist

IMMUNOTHERAPY AND VACCINES

- 3234 Vaccination with a Single-Cycle Respiratory Syncytial Virus Is Immunogenic and Protective in Mice
Megan E. Schmidt, Antonius G. P. Oomens, and Steven M. Varga

INFECTIOUS DISEASE AND HOST RESPONSE

- 3246 A Requirement for Neutrophil Glycosaminoglycans in Chemokine:Receptor Interactions Is Revealed by the Streptococcal Protease SpyCEP
Jennifer Goldblatt, Richard Ashley Lawrenson, Luke Muir, Saloni Dattani, Ashley Hoffland, Tomoko Tsuchiya, Shiro Kanegasaki, Shiranee Sriskandan, and James E. Pease
- 3256 Tetraspanin CD82 Organizes Dectin-1 into Signaling Domains to Mediate Cellular Responses to *Candida albicans*
Jenny M. Tam, Jennifer L. Reedy, Daniel P. Lukason, Sunnie G. Kuna, Mridu Acharya, Nida S. Khan, Paige E. Negoro, Shuying Xu, Rebecca A. Ward, Michael B. Feldman, Richard A. Dutko, Jane B. Jeffery, Anna Sokolovska, Carl N. Wivagg, Kara G. Lassen, François Le Naour, Vasiliki Matzaraki, Ethan C. Garner, Ramnik J. Xavier, Vinod Kumar, Frank L. van de Veerdonk, Mihai G. Netea, Cindy K. Miranti, Michael K. Mansour, and Jatin M. Vyas

INNATE IMMUNITY AND INFLAMMATION

- 3267 Tissue Inhibitor of Metalloproteinase-1 Promotes Polymorphonuclear Neutrophil (PMN) Pericellular Proteolysis by Anchoring Matrix Metalloproteinase-8 and -9 to PMN Surfaces
Xiaoyun Wang, Joselyn Rojas-Quintero, Julie Wilder, Yohannes Tesfaigzi, Duo Zhang, and Caroline A. Owen
- 3282 The Selective Expansion and Targeted Accumulation of Bone Marrow–Derived Macrophages Drive Cardiac Vasculitis
Angus T. Stock, Nicholas Collins, Gordon K. Smyth, Yifang Hu, Jacinta A. Hansen, Damian B. D'Silva, Hamdi A. Jama, Andrew M. Lew, Thomas Gebhardt, Catriona A. McLean, and Ian P. Wicks

- 3297 Twist1 and Twist2 Induce Human Macrophage Memory upon Chronic Innate Receptor Treatment by HDAC-Mediated Deacetylation of Cytokine Promoters
Rui Sun, Matija Hedl, and Clara Abraham

SYSTEMS IMMUNOLOGY

- 3309 Genomic Identification of Low-Density Granulocytes and Analysis of Their Role in the Pathogenesis of Systemic Lupus Erythematosus
Brian J. Kegerreis, Michelle D. Catalina, Nicholas S. Geraci, Prathyusha Bachali, Peter E. Lipsky, and Amrie C. Grammer
- 3318 Local Attachment Explains Small World-like Properties of Fibroblastic Reticular Cell Networks in Lymph Nodes
Kasper M. W. Soekarjo, Johannes Textor, and Rob J. de Boer

TUMOR IMMUNOLOGY

- 3326 IL-21 Enhances the Development of Colitis-Associated Colon Cancer: Possible Involvement of Activation-Induced Cytidine Deaminase Expression
Akemi Araki, Lianjin Jin, Hidetoshi Nara, Yuji Takeda, Nobuhito Nemoto, Md Yeashin Gazi, and Hironobu Asao

CORRECTIONS

- 3334 Correction: Pleiotropic Impacts of Macrophage and Microglial Deficiency on Development in Rats with Targeted Mutation of the *Csf1r* Locus
Clare Pridans, Anna Raper, Gemma M. Davis, Joana Alves, Kristin A. Sauter, Lucas Lefevre, Tim Regan, Stephen Meek, Linda Sutherland, Alison J. Thomson, Sara Clobisey, Stephen J. Bush, Rocío Rojo, Zofia M. Lisowski, Robert Wallace, Kathleen Grabert, Kyle R. Upton, Yi Ting Tsai, Deborah Brown, Lee B. Smith, Kim M. Summers, Neil A. Mabbott, Pedro Piccardo, Michael T. Cheeseman, Tom Burdon, and David A. Hume

- 3336 AUTHOR INDEX