

IN THIS ISSUE

- 2513 **An Inhibitory Molecule Keeps Multiple Myeloma in Check** *See article p. 2581*
The Evolution of KIR and HLA Diversity *See article p. 2640*
Role of Fucosyltransferases in Memory CD4⁺ T Cells *See article p. 2690*
Protective Alleles and Their Preferential Peptides in Visceral Leishmaniasis *See article p. 2727*
Connecting Antiviral Signaling to Necroptosis *See article p. 2748*

LETTERS TO THE EDITOR

- 2515 Comment on “Type I CD20 Antibodies Recruit the B Cell Receptor for Complement-Dependent Lysis of Malignant B Cells”
Mitchell Evers, Elizabeth Kruse, Firas Hamdan, Robert-Jan Lebbink, and Jeanette H. W. Leusen
- 2517 Response to Comment on “Type I CD20 Antibodies Recruit the B Cell Receptor for Complement-Dependent Lysis of Malignant B Cells”
Patrick J. Engelberts, Esther C. W. Breij, T. Valerius, J. Schuurman, Paul W. H. I. Parren, and F. J. Beurskens

BRIEF REVIEWS

- 2519 The Impact of Maternal Microbes and Microbial Colonization in Early Life on Hematopoiesis
Kathy D. McCoy and Carolyn A. Thomson

CUTTING EDGE

- 2529 Cutting Edge: Imbalanced Cation Homeostasis in MAGT1-Deficient B Cells Dysregulates B Cell Development and Signaling in Mice
Sanjeev Kiran Gotru, Jesus Gil-Pulido, Niklas Beyersdorf, Andreas Diefenbach, Isabelle C. Becker, Timo Vögtle, Katharina Remer, Vladimir Chubanov, Thomas Gudermann, Heike M. Hermanns, Bernhard Nieswandt, Thomas Kerkau, Alma Zerneck, and Attila Braun

On the cover: An IgV_J-C2 molecule found in invertebrate amphioxus (AmpIgV_J-C2) reveals critical structural features characteristic of vertebrate adaptive immune receptors. Immunogold electron microscopy shows that IgV_J-C2 is localized in secretory granules, cell protrusions, and cilia of intestine, which are considered to be major immune response sites. Chen, R., L. Zhang, J. Qi, N. Zhang, L. Zhang, S. Yao, Y. Wu, B. Jiang, Z. Wang, H. Yuan, Q. Zhang, and C. Xia. 2018. Discovery and analysis of invertebrate IgV_J-C2 structure from amphioxus provides insight into the evolution of the Ig superfamily. *J. Immunol.* 200: 2869–2881.

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: 301-634-7829. 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 © 2018 by The American Association of Immunologists, Inc.

AUTOIMMUNITY

- 2535 Circulating Exosomes with Distinct Properties during Chronic Lung Allograft Rejection
Muthukumar Gunasekaran, Monal Sharma, Ramsey Hachem, Ross Bremner, Michael A. Smith, and Thalachallour Mohanakumar
- 2542 rIgG1 Fc Hexamer Inhibits Antibody-Mediated Autoimmune Disease via Effects on Complement and FcγRs
Rolf Spirig, Ian K. Campbell, Sandra Koernig, Chao-Guang Chen, Bonnie J. B. Lewis, Rebecca Butcher, Ineke Muir, Shirley Taylor, Jenny Chia, David Leong, Jason Simmonds, Pierre Scotney, Peter Schmidt, Louis Fabri, Andreas Hofmann, Monika Jordi, Martin O. Spycher, Susann Cattepoel, Jennifer Brasseit, Con Panousis, Tony Rowe, Donald R. Branch, Adriana Baz Morelli, Fabian Käsermann, and Adrian W. Zuercher
- 2554 CCR7 on CD4⁺ T Cells Plays a Crucial Role in the Induction of Experimental Autoimmune Encephalomyelitis
Patrick Belikan, Ulrike Bühler, Christina Wolf, Gautam K. Pramanik, René Gollan, Frauke Zipp, and Volker Siffrin

CLINICAL AND HUMAN IMMUNOLOGY

- 2563 Biotin Deficiency Induces Th1- and Th17-Mediated Proinflammatory Responses in Human CD4⁺ T Lymphocytes via Activation of the mTOR Signaling Pathway
Asif Elahi, Subrata Sabui, Nell N. Narasappa, Sudhanshu Agrawal, Nils W. Lambrecht, Anshu Agrawal, and Hamid M. Said
- 2571 MTOR Suppresses Cigarette Smoke-Induced Epithelial Cell Death and Airway Inflammation in Chronic Obstructive Pulmonary Disease
Yong Wang, Juan Liu, Jie-Sen Zhou, Hua-Qiong Huang, Zhou-Yang Li, Xu-Chen Xu, Tian-Wen Lai, Yue Hu, Hong-Bin Zhou, Hai-Pin Chen, Song-Min Ying, Wen Li, Hua-Hao Shen, and Zhi-Hua Chen
- 2581 Loss of the Immune Checkpoint CD85j/LILRB1 on Malignant Plasma Cells Contributes to Immune Escape in Multiple Myeloma
Ester Lozano, Tania Díaz, Mari-Pau Mena, Guillermo Suñe, Xavier Calvo, Marcos Calderón, Lorena Pérez-Amill, Vanina Rodríguez, Patricia Pérez-Galán, Gaël Roué, M. Teresa Cibeira, Laura Rosiñol, Ignacio Isola, Luis-Gerardo Rodríguez-Lobato, Beatriz Martín-Antonio, Joan Bladé, and Carlos Fernández de Larrea

IMMUNE REGULATION

- 2592 Dendritic Cell PD-L1 Limits Autoimmunity and Follicular T Cell Differentiation and Function
Peter T. Sage, Frank A. Schildberg, Raymond A. Sobel, Vijay K. Kuchroo, Gordon J. Freeman, and Arlene H. Sharpe
- 2603 *Lnc-chop* Promotes Immunosuppressive Function of Myeloid-Derived Suppressor Cells in Tumor and Inflammatory Environments
Yunhuan Gao, Tiantian Wang, Yuanyuan Li, Yuan Zhang, and Rongcun Yang
- 2615 A Restricted Role for FcγR in the Regulation of Adaptive Immunity
Marieke F. Fransen, Hreinn Benonisson, Wendy W. van Maren, Heng Sheng Sow, Cor Breukel, Margot M. Linssen, Jill W. C. Claassens, Conny Brouwers, Jos van der Kaa, Marcel Camps, Jan Willem Kleinovink, Kelly K. Vonk, Sandra van Heiningen, Ngaisah Klar, Lianne van Beek, Vanessa van Harmelen, Lucia Daxinger, Kuttu S. Nandakumar, Rikard Holmdahl, Chris Coward, Qingshun Lin, Sachiko Hirose, Daniela Salvatori, Thorbald van Hall, Cees van Kooten, Piero Mastroeni, Ferry Ossendorp, and J. Sjef Verbeek
- 2627 B Cell-Intrinsic mTORC1 Promotes Germinal Center-Defining Transcription Factor Gene Expression, Somatic Hypermutation, and Memory B Cell Generation in Humoral Immunity
Ariel L. Raybuck, Sung Hoon Cho, Jingxin Li, Meredith C. Rogers, Keunwook Lee, Christopher L. Williams, Mark Shlomchik, James W. Thomas, Jin Chen, John V. Williams, and Mark R. Boothby

IMMUNOGENETICS

- 2640 Different Selected Mechanisms Attenuated the Inhibitory Interaction of KIR2DL1 with C2⁺ HLA-C in Two Indigenous Human Populations in Southern Africa
Neda Nemat-Gorgani, Hugo G. Hilton, Brenna M. Henn, Meng Lin, Christopher R. Gignoux, Justin W. Myrick, Cedric J. Werely, Julie M. Granka, Marlo Möller, Eileen G. Hoal, Makoto Yawata, Nobuyo Yawata, Lies Boelen, Becca Asquith, Peter Parham, and Paul J. Norman

IMMUNOTHERAPY AND VACCINES

- 2656 Anticancer Mechanisms in Two Murine Bone Marrow–Derived Dendritic Cell Subsets Activated with TLR4 Agonists
Alexander Bagaev, Aleksey Pichugin, Edward L. Nelson, Michael G. Agadjanyan, Anahit Ghochikyan, and Ravshan I. Ataullakhanov
- 2670 All-*Trans* Retinoic Acid Enhances Antibody Production by Inducing the Expression of Thymic Stromal Lymphopoietin Protein
Takahiro Hatayama, Ryosuke Segawa, Natsumi Mizuno, Sumiko Eguchi, Hiroshi Akamatsu, Misaki Fukuda, Fumihisa Nakata, Warren J. Leonard, Masahiro Hiratsuka, and Noriyasu Hirasawa

INFECTIOUS DISEASE AND HOST RESPONSE

- 2677 miR-130a and miR-212 Disrupt the Intestinal Epithelial Barrier through Modulation of PPAR γ and Occludin Expression in Chronic Simian Immunodeficiency Virus–Infected Rhesus Macaques
Vinay Kumar, Joshua Mansfield, Rong Fan, Andrew MacLean, Jian Li, and Mahesh Mohan
- 2690 Fucosyltransferase Induction during Influenza Virus Infection Is Required for the Generation of Functional Memory CD4⁺ T Cells
Roberto Tinoco, Florent Carrette, Monique L. Henriquez, Yu Fujita, and Linda M. Bradley
- 2703 Murine γ -Herpesvirus 68 Induces Severe Lung Inflammation in IL-27–Deficient Mice with Liver Dysfunction Preventable by Oral Neomycin
Kyosuke Kanai, Ah-Mee Park, Akiko Watanabe, Tomohiro Arikawa, Terubito Yasui, Hiroki Yoshida, Ikuo Tsunoda, and Osamu Yoshie
- 2714 Associations of Simian Immunodeficiency Virus (SIV)-Specific Follicular CD8⁺ T Cells with Other Follicular T Cells Suggest Complex Contributions to SIV Viremia Control
Mohammad Arif Rahman, Katherine M. McKinnon, Tatiana S. Karpova, David A. Ball, David J. Venzon, Wenjin Fan, Guobin Kang, Qingsheng Li, and Marjorie Robert-Guroff
- 2727 Epitope-Binding Characteristics for Risk versus Protective DRB1 Alleles for Visceral Leishmaniasis
Toolika Singh, Michaela Fakiola, Joyce Oommen, Akhil Pratap Singh, Abhishek K. Singh, Noel Smith, Jaya Chakravarty, Shyam Sundar, and Jenefer M. Blackwell

INNATE IMMUNITY AND INFLAMMATION

- 2738 IL-15 Promotes Polyfunctional NK Cell Responses to Influenza by Boosting IL-12 Production
Helen R. Wagstaffe, Carolyn M. Nielsen, Eleanor M. Riley, and Martin R. Goodier
- 2748 Intracellular Nucleic Acid Sensing Triggers Necroptosis through Synergistic Type I IFN and TNF Signaling
Michelle Brault, Tayla M. Olsen, Jennifer Martinez, Daniel B. Stetson, and Andrew Oberst
- 2757 15-*epi*-Lipoxin A₄, Resolvin D2, and Resolvin D3 Induce NF- κ B Regulators in Bacterial Pneumonia
Ho Pan Sham, Katherine H. Walker, Raja-Elie E. Abdounour, Nandini Krishnamoorthy, David N. Douda, Paul C. Norris, Ioanna Barkas, Sarah Benito-Figueroa, Jennifer K. Colby, Charles N. Serhan, and Bruce D. Levy
- 2767 Teleost Basophils Have IgM-Dependent and Dual Ig-Independent Degranulation Systems
Tomoyuki Odaka, Hiroaki Suetake, Tomoki Maeda, and Toshiaki Miyadai
- 2777 RGC32 Promotes Bleomycin-Induced Systemic Sclerosis in a Murine Disease Model by Modulating Classically Activated Macrophage Function
Chenming Sun and Shi-You Chen
- 2786 Contribution of Adipose-Derived Factor D/Adipsin to Complement Alternative Pathway Activation: Lessons from Lipodystrophy
Xiaobo Wu, Irina Hutson, Antonina M. Akk, Smita Mascharak, Christine T. N. Pham, Dennis E. Hourcade, Rebecca Brown, John P. Atkinson, and Charles A. Harris

- 2798 Intravesicular Acidification Regulates Lipopolysaccharide Inflammation and Tolerance through TLR4 Trafficking
Motoya Murase, Takumi Kawasaki, Rika Hakozaiki, Takuya Sueyoshi, Dyaningtyas Dewi Pamungkas Putri, Yuichi Kitai, Shintaro Sato, Masahito Ikawa, and Taro Kawai
- 2809 Constitutively Bound EGFR–Mediated Tyrosine Phosphorylation of TLR9 Is Required for Its Ability To Signal
Manoj Veleeparambil, Darshana Poddar, Samar Abdulkhalek, Patricia M. Kessler, Michifumi Yamashita, Saurabh Chattopadhyay, and Ganes C. Sen
- 2819 Decay of the Stress-Induced Ligand MICA Is Controlled by the Expression of an Alternative 3' Untranslated Region
Tirtsah Toledano, Alon Vitenshtein, Noam Stern-Ginossar, Einat Seidel, and Ofer Mandelboim
- 2826 mTOR Suppresses Environmental Particle-Induced Inflammatory Response in Macrophages
Zhouyang Li, Yinfang Wu, Hai-Pin Chen, Chen Zhu, Lingling Dong, Yong Wang, Huiwen Liu, Xuchen Xu, Jieshen Zhou, Yanping Wu, Wen Li, Songmin Ying, Huahao Shen, and Zhi-Hua Chen
- 2835 Curcumin Suppresses IL-1 β Secretion and Prevents Inflammation through Inhibition of the NLRP3 Inflammasome
Haipeng Yin, Qiang Guo, Xin Li, Tiantian Tang, Cuiling Li, Hengxiao Wang, Yuanxin Sun, Qi Feng, Chunhong Ma, Chengjiang Gao, Fan Yi, and Jun Peng
- 2847 Identification of MHC Class Ib Ligands for Stimulatory and Inhibitory Ly49 Receptors and Induction of Potent NK Cell Alloresponses in Rats
Ke-Zheng Dai, James C. Ryan, Christian Naper, and John T. Vaage

MOLECULAR AND STRUCTURAL IMMUNOLOGY

- 2860 The Immunogenicity of a Proline-Substituted Altered Peptide Ligand toward the Cancer-Associated TEIPP Neoepitope Trh4 Is Unrelated to Complex Stability
Ida Hafstrand, Elien M. Doorduyn, Renhua Sun, Anna Talyzina, Marjolein Sluiter, Sara Pellegrino, Tatyana Sandalova, Adil Doganay Duru, Thorbald van Hall, and Adnane Achour
- 2869 Discovery and Analysis of Invertebrate IgV_J-C2 Structure from Amphioxus Provides Insight into the Evolution of the Ig Superfamily
Rong Chen, Lijie Zhang, Jianxun Qi, Nianzhi Zhang, Ling Zhang, Shugang Yao, Yanan Wu, Bo Jiang, Zhenbao Wang, Hongyu Yuan, Qiuji Zhang, and Chun Xia
- 2882 Bach2 Promotes B Cell Receptor–Induced Proliferation of B Lymphocytes and Represses Cyclin-Dependent Kinase Inhibitors
Yuichi Miura, Mizuho Morooka, Nicolas Sax, Rahul Roychoudhuri, Ari Itoh-Nakada, Andrey Brydun, Ryo Funayama, Keiko Nakayama, Susumu Satomi, Mitsuyo Matsumoto, Kazuhiko Igarashi, and Akihiko Muto

MUCOSAL IMMUNOLOGY

- 2894 The TNF Superfamily Molecule LIGHT Promotes the Generation of Circulating and Lung-Resident Memory CD8 T Cells following an Acute Respiratory Virus Infection
Pritesh Desai, Vikas Tahlilani, Tarun E. Hutchinson, Farhad Dastmalchi, Jessica Stanfield, Georges Abboud, Paul G. Thomas, Carl F. Ware, Jianxun Song, Michael Croft, and Shahram Salek-Ardakani
- 2905 Gpr109a Limits Microbiota-Induced IL-23 Production To Constrain ILC3-Mediated Colonic Inflammation
Brinda Bhatt, Peng Zeng, Huabin Zhu, Sathish Sivaprakasam, Siyi Li, Haiyan Xiao, Lixin Dong, Pamela Shiao, Ravindra Kolhe, Nikhil Patel, Honglin Li, Daniel Levy-Bercowski, Vadivel Ganapathy, and Nagendra Singh
- 2915 CXCL17 Chemokine–Dependent Mobilization of CXCR8⁺CD8⁺ Effector Memory and Tissue-Resident Memory T Cells in the Vaginal Mucosa Is Associated with Protection against Genital Herpes
Ruchi Srivastava, Marcela Hernández-Ruiz, Arif A. Khan, Mona A. Fouladi, Grace J. Kim, Vincent T. Ly, Taikun Yamada, Cynthia Lam, Sheilouise A. B. Sarain, Undariya Boldbaatar, Albert Zlotnik, Elmostafa Bahraoui, and Lbachir BenMohamed

- 2927 Secondhand Smoke Induces Inflammation and Impairs Immunity to Respiratory Infections
Tariq A. Bhat, Suresh Gopi Kalathil, Paul N. Bogner, Austin Miller, Paul V. Lehmann, Thomas H. Thatcher, Richard P. Phipps, Patricia J. Sime, and Yasmin Thanavala

SYSTEMS IMMUNOLOGY

- 2941 Discovery of Blood Transcriptional Endotypes in Women with Pelvic Inflammatory Disease
Xiaojing Zheng, Catherine M. O'Connell, Wujuan Zhong, Uma M. Nagarajan, Manoj Tripathy, De'Ashia Lee, Ali N. Russell, Harold Wiesenfeld, Sharon Hillier, and Toni Darville

TRANSPLANTATION

- 2957 Examining the Biosynthesis and Xenoantigenicity of Class II Swine Leukocyte Antigen Proteins
Joseph M. Ladowski, Gregory R. Martens, Luz M. Reyes, Zheng-Yu Wang, Devin E. Eckhoff, Vera Hauptfeld-Dolejssek, Matt Tector, and A. Joseph Tector

TUMOR IMMUNOLOGY

- 2965 An Isolated TCR $\alpha\beta$ Restricted by HLA-A*02:01/CT37 Peptide Redirecting CD8⁺ T Cells To Kill and Secrete IFN- γ in Response to Lung Adenocarcinoma Cell Lines
Pedro O. Flores-Villanueva, Malathesha Ganachari, Heinner Guio, Jaime A. Mejia, and Julio Granados
- 2978 Clec9A⁺ Dendritic Cells Are Not Essential for Antitumor CD8⁺ T Cell Responses Induced by Poly I:C Immunotherapy
Connie B. Gilfillan, Sabine Kuhn, Camille Baey, Evelyn J. Hyde, Jianping Yang, Christiane Ruedl, and Franca Ronchese
- 2987 Oncolytic Reovirus Inhibits Immunosuppressive Activity of Myeloid-Derived Suppressor Cells in a TLR3-Dependent Manner
Yuki Katayama, Masashi Tachibana, Nozomi Kurisu, Yukako Oya, Yuichi Terasawa, Hiroshi Goda, Kouji Kobiyama, Ken J. Ishii, Shizuo Akira, Hiroyuki Mizuguchi, and Fuminori Sakurai

NOVEL IMMUNOLOGICAL METHODS

- 3000 Functional Anti-TIGIT Antibodies Regulate Development of Autoimmunity and Antitumor Immunity
Karen O. Dixon, Michelle Schorer, James Nevin, Yassaman Etminan, Zohreh Amoozgar, Takaaki Kondo, Sema Kurtulus, Nasim Kassam, Raymond A. Sobel, Dai Fukumura, Rakesh K. Jain, Ana C. Anderson, Vijay K. Kuchroo, and Nicole Joller
- 3008 A High Throughput Whole Blood Assay for Analysis of Multiple Antigen-Specific T Cell Responses in Human *Mycobacterium tuberculosis* Infection
Wendy E. Whatney, Neel R. Gandhi, Cecilia S. Lindestam Arlehamn, Azhar Nizam, Hao Wu, Melanie J. Quezada, Angela Campbell, Salim Allana, Mbuyi Madeleine Kabongo, Jeremiah Khayumbi, Benson Muchiri, Joshua Ongalo, Joan Tonui, Loren E. Sasser, Tawania J. Fergus, Gregory Sadat Ouma, Samuel Gurrion Ouma, Allison A. Beck, Mark J. Mulligan, Alawode Oladele, Deepak Kaushal, Kevin P. Cain, Lance Waller, Henry M. Blumberg, John D. Altman, Joel D. Ernst, Jyothi Rengarajan, and Cheryl L. Day, for the TBRU-ASTRA Study Group

CORRECTIONS

- 3020 Correction: Dendritic Cell RIPK1 Maintains Immune Homeostasis by Preventing Inflammation and Autoimmunity
Joanne A. O'Donnell, Jesse Lehman, Justine E. Roderick, Dalia Martinez-Marin, Matija Zelic, Ciara Doran, Nicole Hermance, Stephen Lyle, Manolis Pasparakis, Katherine A. Fitzgerald, Ann Marshak-Rothstein, and Michelle A. Kelliher

- 3022 AUTHOR INDEX