

ON THE COVER

Image by New York artist Joshua Graver (JGraphicG@gmail.com) based on three-dimensional models of cell migration. These simulations predict how chemokine concentrations alter the movement of B cells in germinal centers. Related article by Figge et al.

[See page 3019](#)

IN THIS ISSUE

- 2948 Touching up antibodies prevents autoimmunity
The benefits of inflamed arteries
How Notch heals a broken heart
Tailoring Tregs for self preservation
B cells keep on editing
Mitch Leslie

PEOPLE & IDEAS

- 2950 Lei Wang: Expanding the language of life
Kira O'Day

COMMENTARIES

- 2953 Causes of early-onset type 1 diabetes: toward data-driven environmental approaches
Pierre Bougnères and Alain-Jacques Valleron

BRIEF DEFINITIVE REPORTS

- 2959 Accelerated tumor growth in mice deficient in DNAM-1 receptor
Akiko Iguchi-Manaka, Hirayasu Kai, Yumi Yamashita, Kai Shibata, Satoko Tahara-Hanaoka, Shin-ichiro Honda, Teruhito Yasui, Hitoshi Kikutani, Kazuko Shibuya, and Akira Shibuya

- 2965 DNAM-1 promotes activation of cytotoxic lymphocytes by nonprofessional antigen-presenting cells and tumors
Susan Gilfillan, Christopher J. Chan, Marina Cella, Nicole M. Haynes, Aaron S. Rapaport, Kent S. Boles, Daniel M. Andrews, Mark J. Smyth, and Marco Colonna

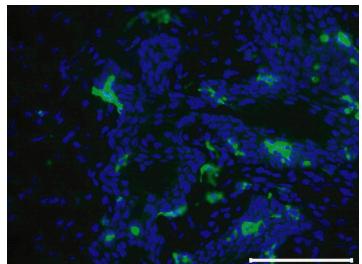
ARTICLES

- 2975 Dysregulation of lipid and amino acid metabolism precedes islet autoimmunity in children who later progress to type 1 diabetes
Matej Orešič, Satu Simell, Marko Sysi-Aho, Kirsti Näntö-Salonen, Tuulikki Seppänen-Laakso, Vilhelmiina Parikka, Mikko Katajamaa, Anne Hekkala, Ismo Mattila, Päivi Keskinen, Laxman Yetukuri, Arja Reinikainen, Jyrki Lähde, Tapani Suortti, Jari Hakalax, Tuula Simell, Heikki Hyöty, Riitta Veijola, Jorma Ilonen, Riitta Lahesmaa, Mikael Knip, and Olli Simell
[See Commentary on page 2953](#)

- 2985 RS rearrangement frequency as a marker of receptor editing in lupus and type 1 diabetes
Anil K. Panigrahi, Noah G. Goodman, Robert A. Eisenberg, Michael R. Rickels, Ali Naji, and Eline T. Luning Prak
[See news item on page 2948](#)

- 2995 TLR7-dependent and FcγR-independent production of type I interferon in experimental mouse lupus
Pui Y. Lee, Yutaro Kumagai, Yi Li, Osamu Takeuchi, Hideo Yoshida, Jason Weinstein, Erinn S. Kellner, Dina Nacionales, Tolga Barker, Kindra Kelly-Scumpia, Nico van Rooijen, Himanshu Kumar, Taro Kawai, Minoru Satoh, Shizuo Akira, and Westley H. Reeves

- 3007 Induction of inflammatory and immune responses by HMGB1–nucleosome complexes: implications for the pathogenesis of SLE
Vilma Urbanaviciute, Barbara G. Fürnrohr, Silke Meister, Luis Munoz, Petra Heyder, Francesco De Marchis, Marco E. Bianchi, Carsten Kirschning, Hermann Wagner, Angelo A. Manfredi, Joachim R. Kalden, Georg Schett, Patrizia Rovere-Querini, Martin Herrmann, and Reinhard E. Voll



- 3019 Deriving a germinal center lymphocyte migration model from two-photon data
Marc Thilo Figge, Alexandre Garin, Matthias Gunzer, Marie Kosco-Vilbois, Kai-Michael Toellner, and Michael Meyer-Hermann

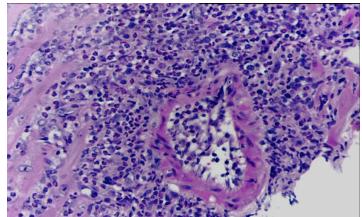
Vaginal dendritic cells (green) and B cells are required to activate protective memory CD4⁺ cells during HSV infection.
[See page 3041](#)

- 3031 Involvement of Artemis in nonhomologous end-joining during immunoglobulin class switch recombination
Likun Du, Mirjam van der Burg, Sergey W. Popov, Ashwin Kotnis, Jacques J.M. van Dongen, Andrew R. Gennery, and Qiang Pan-Hammarström

- 3041 Dendritic cells and B cells maximize mucosal Th1 memory response to herpes simplex virus
Norifumi Iijima, Melissa M. Linehan, Melodie Zamora, Debbie Butkus, Robert Dunn, Marilyn R. Kehry, Terri M. Laufer, and Akiko Iwasaki

- 3053 Dual role for B-1a cells in immunity to influenza virus infection
Youn Soo Choi and Nicole Baumgarth

- 3065 Lung epithelial apoptosis in influenza virus pneumonia: the role of macrophage-expressed TNF-related apoptosis-inducing ligand
Susanne Herold, Mirko Steinmueller, Werner von Wulffen, Lidiya Cakarova, Ruth Pinto, Stephan Pleschka, Matthias Mack, William A. Kuziel, Nadia Corazza, Thomas Brunner, Werner Seeger, and Juergen Lohmeyer



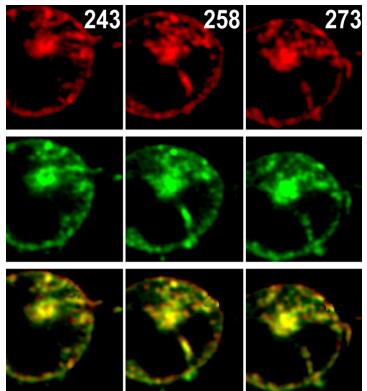
- 3079 Oncogenic transformation in the absence of Xrcc4 targets peripheral B cells that have undergone editing and switching
Jing H. Wang, Frederick W. Alt, Monica Gostissa, Abhishek Datta, Michael Murphy, Marat B. Alimzhanov, Kristen M. Coakley, Klaus Rajewsky, John P. Manis, and Catherine T. Yan

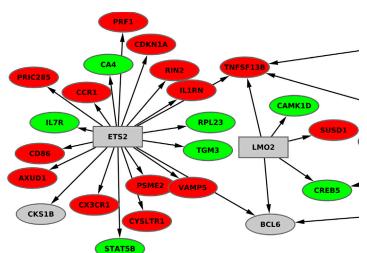
[See news item on page 2949](#)

T-bet deficiency accelerates vascular inflammation and heart transplant rejection.
[See page 3133](#)

- 3091 Prostaglandin E2 regulates B cell proliferation through a candidate tumor suppressor, *Ptger4*
Jernej Murn, Olivier Alibert, Ning Wu, Simon Tendil, and Xavier Gidrol

- 3105 Antigen-specific peripheral shaping of the natural regulatory T cell population
Stephanie K. Lathrop, Nicole A. Santacruz, Dominic Pham, Jingqin Luo, and Chyi-Song Hsieh
[See news item on page 2949](#)

- 3119** Yellow fever vaccine induces integrated multilineage and polyfunctional immune responses
 Denis Gaucher, René Therrien, Nadia Kettaf, Bastian R. Angermann, Geneviève Boucher, Abdelali Filali-Mouhim, Janice M. Moser, Riyaz S. Mehta, Donald R. Drake III, Erika Castro, Rama Akondy, Aline Rinfret, Bader Yassine-Diab, Elias A. Said, Younes Chouikh, Mark J. Cameron, Robert Clum, David Kelvin, Roland Somogyi, Larry D. Greller, Robert S. Balderas, Peter Wilkinson, Giuseppe Pantaleo, Jim Tartaglia, Elias K. Haddad, and Rafick-Pierre Sékaly
- 3133** A novel role of CD4 Th17 cells in mediating cardiac allograft rejection and vasculopathy
 Xueli Yuan, Jesus Paez-Cortez, Isabela Schmitt-Knosalla, Francesca D'Addio, Bechara Mfarrej, Michela Donnarumma, Antje Habicht, Michael R. Clarkson, John Iacomini, Laurie H. Glimcher, Mohamed H. Sayegh, and M. Javeed Ansari
- 3145** Interleukin (IL)-1 promotes allogeneic T cell intimal infiltration and IL-17 production in a model of human artery rejection
 Deepak A. Rao, Raymond E. Eid, Lingfeng Qin, Tai Yi, Nancy C. Kirkiles-Smith, George Tellides, and Jordan S. Pober
- 3159** MyD88-dependent, superoxide-initiated inflammation is necessary for flow-mediated inward remodeling of conduit arteries
 Paul C.Y. Tang, Lingfeng Qin, Jacek Zielonka, Jing Zhou, Catherine Matte-Martone, Sonia Bergaya, Nico van Rooijen, Warren D. Shlomchik, Wang Min, William C. Sessa, Jordan S. Pober, and George Tellides
See news item on page 2948
- 3173** Control of the adaptive response of the heart to stress via the Notch1 receptor pathway
 Adrien Croquelois, Andrea A. Domenighetti, Mohamed Nemir, Mario Lepore, Nathalie Rosenblatt-Velin, Freddy Radtke, and Thierry Pedrazzini
See news item on page 2948
- 3187** Positive regulation of plasmacytoid dendritic cell function via Ly49Q recognition of class I MHC
 Lee-Hwa Tai, Marie-Line Goulet, Simon Belanger, Noriko Toyama-Sorimachi, Nassima Fodil-Cornu, Silvia M. Vidal, Angela D. Troke, Daniel W. McVicar, and Andrew P. Makrigiannis
- 3201** An essential role for the MAL protein in targeting Lck to the plasma membrane of human T lymphocytes
 Olga Antón, Alicia Batista, Jaime Millán, Laura Andrés-Delgado, Rosa Puertollano, Isabel Correas, and Miguel A. Alonso
- ## CORRECTIONS
- 3215** Altered kinetics of nonhomologous end joining and class switch recombination in ligase IV-deficient B cells
 Li Han and Kefei Yu
- 

Lck (red) hitches a ride to the plasma membrane with MAL (green).
See page 3201
- 

Transcriptional network of differentially expressed genes after yellow fever vaccination.

See page 3119