

## In This Issue

- 2 **How herpes launches lymphatics**  
Two-pronged attack on HIV  
Dementia's inflammatory link  
 $\delta$ -Catenin aids angiogenesis  
To dampen demyelination  
Amy Maxmen

## People & Ideas

- 4 **Fiona Powrie: Gut diplomacy**  
Amy Maxmen

## Brief Definitive Reports

- 7 **Negative regulation of autoimmune demyelination by the inhibitory receptor CLM-1**  
Hongkang Xi, Kenneth J. Katschke Jr., Karim Y. Helmy, Paige A. Wark, Noelyn Kljavin, Hilary Clark, Jeffrey Eastham-Anderson, Theresa Shek, Merone Roose-Girma, Nico Ghilardi, and Menno van Lookeren Campagne  
[See news item on page 3](#)
- 17 **Lymphatic endothelial cell sphingosine kinase activity is required for lymphocyte egress and lymphatic patterning**  
Trung H.M. Pham, Peter Baluk, Ying Xu, Irina Grigorova, Alex J. Bankovich, Rajita Pappu, Shaun R. Coughlin, Donald M. McDonald, Susan R. Schwab, and Jason G. Cyster
- 29 **Essential role of Mannose-binding lectin-associated serine protease-1 in activation of the complement factor D**  
Minoru Takahashi, Yumi Ishida, Daisuke Iwaki, Kazuko Kanno, Toshiyuki Suzuki, Yuichi Endo, Yoshimi Homma, and Teizo Fujita
- 39 **The antiviral factor APOBEC3G improves CTL recognition of cultured HIV-infected T cells**  
Nicoletta Casartelli, Florence Guivel-Benhassine, Romain Bouziat, Samantha Brandler, Olivier Schwartz, and Arnaud Moris  
[See news item on page 2](#)
- 51 **CD8 T cell response and evolutionary pressure to HIV-1 cryptic epitopes derived from antisense transcription**  
Anju Bansal, Jonathan Carlson, Jiyu Yan, Olusimidele T. Akinsiku, Malinda Schaefer, Steffanie Sabbaj, Anne Bet, David N. Levy, Sonya Heath, Jianming Tang, Richard A. Kaslow, Bruce D. Walker, Thumbi Ndung'u, Philip J. Goulder, David Heckerman, Eric Hunter, and Paul A. Goepfert

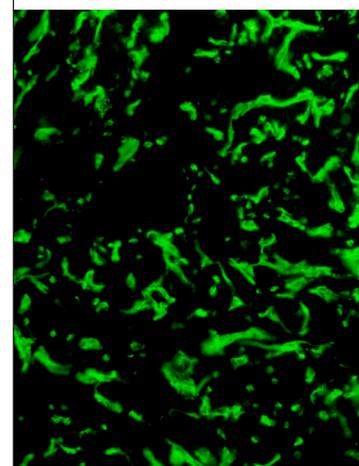
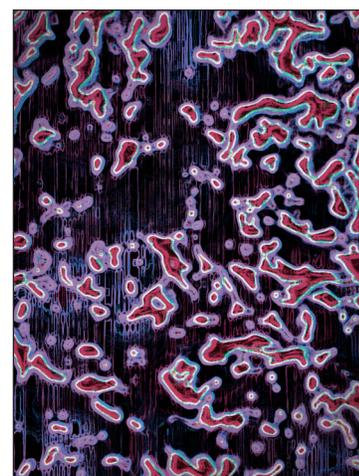
## Articles

- 61 **Viral adaptation to immune selection pressure by HLA class I-restricted CTL responses targeting epitopes in HIV frameshift sequences**  
Christoph T. Berger, Jonathan M. Carlson, Chanson J. Brumme, Kari L. Hartman, Zabrina L. Brumme, Leah M. Henry, Pamela C. Rosato, Alicja Piechocka-Trocha, Mark A. Brockman, P. Richard Harrigan, David Heckerman, Daniel E. Kaufmann, and Christian Brander

# JEM

THE  
JOURNAL OF  
EXPERIMENTAL  
MEDICINE

VOLUME 207 NUMBER 1  
JANUARY 18, 2010  
[www.jem.org](http://www.jem.org)

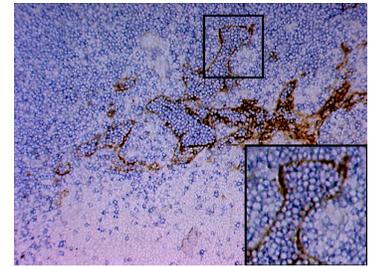


### ON THE COVER

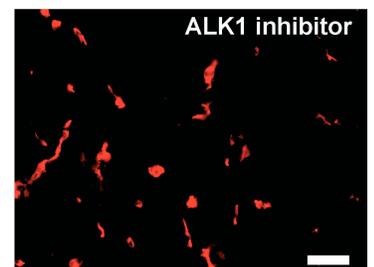
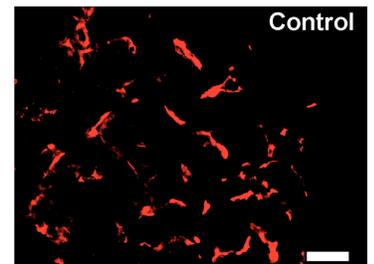
DeBusk et al. find that  $\delta$ -catenin expression in vascular endothelial cells is boosted by inflammatory cytokines, and that  $\delta$ -catenin deficiency impairs tumor angiogenesis in mice. The original immunofluorescence image (bottom) shows the endothelial marker CD31 (green) in tumor tissue sections from mice injected subcutaneously with Lewis lung carcinoma cells. Artwork (top) by Joshua Graver ([joshuagraver@mac.com](mailto:joshuagraver@mac.com)).

[See page 77](#)

- 77 **Heterozygous deficiency of  $\delta$ -catenin impairs pathological angiogenesis**  
 Laura M. DeBusk, Kimberly Boelte, Yongfen Min, and P. Charles Lin  
[See news item on page 3](#)
- 85 **Genetic and pharmacological targeting of activin receptor-like kinase 1 impairs tumor growth and angiogenesis**  
 Sara I. Cunha, Evangelia Pardali, Midory Thorikay, Charlotte Anderberg, Lukas Hawinkels, Marie-José Goumans, Jasbir Seehra, Carl-Henrik Heldin, Peter ten Dijke, and Kristian Pietras
- 101 **VEGF-A expression by HSV-1-infected cells drives corneal lymphangiogenesis**  
 Todd R. Wuest and Daniel J.J. Carr  
[See news item on page 2](#)
- 117 **Exaggerated inflammation, impaired host defense, and neuropathology in progranulin-deficient mice**  
 Fangfang Yin, Rebecca Banerjee, Bobby Thomas, Ping Zhou, Liping Qian, Ting Jia, Xiaojing Ma, Yao Ma, Costantino Iadecola, M. Flint Beal, Carl Nathan, and Aihao Ding  
[See news item on page 2](#)
- 129 **VSOP/Hv1 proton channels sustain calcium entry, neutrophil migration, and superoxide production by limiting cell depolarization and acidification**  
 Antoun El Chemaly, Yoshifumi Okochi, Mari Sasaki, Serge Arnaudeau, Yasushi Okamura, and Nicolas Demaurex
- 141 **Altering the spectrum of immunoglobulin V gene somatic hypermutation by modifying the active site of AID**  
 Meng Wang, Cristina Rada, and Michael S. Neuberger
- 155 **B cell-intrinsic signaling through IL-21 receptor and STAT3 is required for establishing long-lived antibody responses in humans**  
 Danielle T. Avery, Elissa K. Deenick, Cindy S. Ma, Santi Suryani, Nicholas Simpson, Gary Y. Chew, Tyani D. Chan, Umamainthan Palendira, Jacinta Bustamante, Stéphanie Boisson-Dupuis, Sharon Choo, Karl E. Bleasel, Jane Peake, Cecile King, Martyn A. French, Dan Engelhard, Sami Al-Hajjar, Saleh Al-Muhsen, Klaus Magdorf, Joachim Roesler, Peter D. Arkwright, Pravin Hissaria, D. Sean Riminton, Melanie Wong, Robert Brink, David A. Fulcher, Jean-Laurent Casanova, Matthew C. Cook, and Stuart G. Tangye
- 173 **Decoration of T-independent antigen with ligands for CD22 and Siglec-G can suppress immunity and induce B cell tolerance in vivo**  
 Bao Hoa Duong, Hua Tian, Takayuki Ota, Gladys Completo, Shoufa Han, José Luis Vela, Miyo Ota, Michael Kubitz, Nicolai Bovin, James Paulson, and David Nemazee
- 189 **CD207<sup>+</sup> CD103<sup>+</sup> dermal dendritic cells cross-present keratinocyte-derived antigens irrespective of the presence of Langerhans cells**  
 Sandrine Henri, Lionel Franz Poulin, Samira Tamoutounour, Laurence Ardouin, Martin Williams, Béatrice de Bovis, Elisabeth Devillard, Christophe Viret, Hiroaki Azukizawa, Adrien Kissenpfennig, and Bernard Malissen

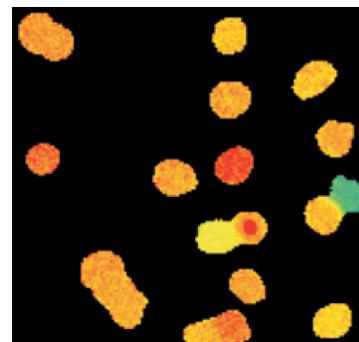


Lymphocyte egress relies on the production of sphingosine-1-phosphate by endothelial cells.  
[See page 17](#)



Blocking ALK1 impairs tumor angiogenesis.  
[See page 85](#)

- 207 **The nonpolymorphic MHC Qa-1<sup>b</sup> mediates CD8<sup>+</sup> T cell surveillance of antigen-processing defects**  
Cláudia C. Oliveira, Peter A. van Veelen, Bianca Querido, Arnoud de Ru, Marjolein Sluijter, Sandra Laban, Sjoerd H. van der Burg, Rienk Offringa, and Thorbald van Hall
- 223 **CD8<sup>+</sup> T cell concentration determines their efficiency in killing cognate antigen-expressing syngeneic mammalian cells in vitro and in mouse tissues**  
Sadna Budhu, John D. Loike, Ashley Pandolfi, Soo Han, Geoffrey Catalano, Andrei Constantinescu, Raphael Clynes, and Samuel C. Silverstein
- 237 **Generation of PLZF<sup>+</sup> CD4<sup>+</sup> T cells via MHC class II-dependent thymocyte-thymocyte interaction is a physiological process in humans**  
You Jeong Lee, Yoon Kyung Jeon, Byung Hyun Kang, Doo Hyun Chung, Chung-Gyu Park, Hee Young Shin, Kyeong Cheon Jung, and Seong Hoe Park
- 247 **Thymic development beyond  $\beta$ -selection requires phosphatidylinositol 3-kinase activation by CXCR4**  
Michelle L. Janas, Gabriele Varano, Kristjan Gudmundsson, Mamiko Noda, Takashi Nagasawa, and Martin Turner



Voltage-gated proton channels facilitate microbicidal activity of neutrophils.

[See page 129](#)