

**CONTENTS • NOVEMBER 2020 • VOLUME 94, NO. 21**

**COVER IMAGE**



*Cover photograph:* GBP5 is an interferon-inducible protein which is a member of the GTPase family. GBP5 potently inhibits respiratory syncytial virus (RSV) infection by reducing the cell-associated levels of the SH protein, a viroporin of RSV. Conversely, RSV antagonizes GBP5 suppression by coding for G protein and utilizing host factor DZIP3 via the proteasome pathway. This is a representative model of the complicated interplay between the host and virus. (See related article at e01407-20.) (Copyright © 2020 American Society for Microbiology. All Rights Reserved.)

**SPOTLIGHT**

**Articles of Significant Interest in This Issue** e01736-20

**STRUCTURE AND ASSEMBLY**

**Optimized Pseudotyping Conditions for the SARS-COV-2 Spike Glycoprotein** e01062-20

*Marc C. Johnson, Terri D. Lyddon, Reinier Suarez, Braxton Salcedo, Mary LePique, Maddie Graham, Clifton Ricana, Carolyn Robinson, Detlef G. Ritter*

**Orsay Virus CP- $\delta$  Adopts a Novel  $\beta$ -Bracelet Structural Fold and Incorporates into Virions as a Head Fiber** e01560-20

*Yusong R. Guo, Yanlin Fan, Ying Zhou, Miao Jin, Jim L. Zhang, Hongbing Jiang, Matthew V. Holt, Tao Wang, Nicolas L. Young, David Wang, Weiwei Zhong, Yizhi J. Tao*

**GENOME REPLICATION AND REGULATION OF VIRAL GENE EXPRESSION**

**Unpaired Guanosines in the 5' Untranslated Region of HIV-1 RNA Act Synergistically To Mediate Genome Packaging** e00439-20

*Olga A. Nikolaitchik, Xayathed Somoulay, Jonathan M. O. Rawson, Jennifer A. Yoo, Vinay K. Pathak, Wei-Shau Hu*

**HIV-1 Lethality and Loss of Env Protein Expression Induced by Single Synonymous Substitutions in the Virus Genome Intronic-Splicing Silencer** e01108-20

*Ana Jordan-Paiz, Maria Nevot, Kevin Lamkiewicz, Marie Lataretu, Sandra Franco, Manja Marz, Miguel Angel Martinez*

**GENETIC DIVERSITY AND EVOLUTION**

**Molecular Characterization of Influenza C Viruses from Outbreaks in Hong Kong SAR, China** e01051-20

*Rodney S. Daniels, Herman Tse, Burcu Ermetal, Zheng Xiang, Deborah J. Jackson, Jeremy Guntoro, Jérôme Nicod, Aengus Stewart, Karen J. Cross, Saira Hussain, John W. McCauley, Janice Lo*

**VIRUS-CELL INTERACTIONS**

**Functional and Structural Insights into a Vif/PPP2R5 Complex Elucidated Using Patient HIV-1 Isolates and Computational Modeling** e00631-20

*Daniel J. Salamango, Jennifer L. McCann, Özlem Demir, Jordan T. Becker, Jiayi Wang, Jairam R. Lingappa, Nuri A. Temiz, William L. Brown, Rommie E. Amaro, Reuben S. Harris*

<b>The XPO6 Exportin Mediates Herpes Simplex Virus 1 gM Nuclear Release Late in Infection</b>	<b>e00753-20</b>
<i>Hugo Boruchowicz, Josiane Hawkins, Kendra Cruz-Palomar, Roger Lippé</i>	
<b>Zika Virus Replication in Myeloid Cells during Acute Infection Is Vital to Viral Dissemination and Pathogenesis in a Mouse Model</b>	<b>e00838-20</b>
<i>Erin M. McDonald, John Anderson, Jeff Wilusz, Gregory D. Ebel, Aaron C. Brault</i>	
<b>Specific Akt Family Members Impair Stress-Mediated Transactivation of Viral Promoters and Enhance Neuronal Differentiation: Important Functions for Maintaining Latency</b>	<b>e00901-20</b>
<i>Jing Zhao, Liqian Zhu, Nishani Wijesekera, Clinton Jones</i>	
<b>Next-Generation Porcine Intestinal Organoids: an Apical-Out Organoid Model for Swine Enteric Virus Infection and Immune Response Investigations</b>	<b>e01006-20</b>
<i>Yang Li, Ning Yang, Jianing Chen, Xin Huang, Na Zhang, Shanshan Yang, Guo Liu, Guangliang Liu</i>	
<b>Mosquito Defensins Enhance Japanese Encephalitis Virus Infection by Facilitating Virus Adsorption and Entry within the Mosquito</b>	<b>e01164-20</b>
<i>Ke Liu, Changguang Xiao, Shumin Xi, Muddassar Hameed, Abdul Wahaab, Donghua Shao, Zongjie Li, Beibei Li, Jianchao Wei, Yafeng Qiu, Denian Miao, Huaimin Zhu, Zhiyong Ma</i>	
<b>A Mechanism-Based Targeted Screen To Identify Epstein-Barr Virus-Directed Antiviral Agents</b>	<b>e01179-20</b>
<i>Xiaofan Li, Ibukun A. Akinyemi, Jeehyun Karen You, Mohammad Ali Rezaei, Chenglong Li, Michael T. McIntosh, Maurizio Del Poeta, Sumita Bhaduri-McIntosh</i>	
<b>Modeling Borna Disease Virus <i>In Vitro</i> Spread Reveals the Mode of Antiviral Effect Conferred by an Endogenous Bornavirus-Like Element</b>	<b>e01204-20</b>
<i>Kwang Su Kim, Yusuke Yamamoto, Shinji Nakaoka, Keizo Tomonaga, Shingo Iwami, Tomoyuki Honda</i>	
<b>Presence of Endogenous Viral Elements Negatively Correlates with Feline Leukemia Virus Susceptibility in Puma and Domestic Cat Cells</b>	<b>e01274-20</b>
<i>Elliott S. Chiu, Sue VandeWoude</i>	
<b>GBP5 Is an Interferon-Induced Inhibitor of Respiratory Syncytial Virus</b>	<b>e01407-20</b>
<i>Zhaolong Li, Xinglong Qu, Xin Liu, Chen Huan, Hong Wang, Zhilei Zhao, Xu Yang, Shucheng Hua, Wenyan Zhang</i>	
<b>Epstein-Barr Virus gH/gL and Kaposi's Sarcoma-Associated Herpesvirus gH/gL Bind to Different Sites on EphA2 To Trigger Fusion</b>	<b>e01454-20</b>
<i>Jia Chen, Samantha Schaller, Theodore S. Jardetzky, Richard Longnecker</i>	
<b>Identification of a Functional Small Noncoding RNA of African Swine Fever Virus</b>	<b>e01515-20</b>
<i>Laura E. M. Dunn, Alasdair Ivens, Christopher L. Netherton, David A. G. Chapman, Philippa M. Beard</i>	
<b>The Golgi Calcium ATPase Pump Plays an Essential Role in Adeno-associated Virus Trafficking and Transduction</b>	<b>e01604-20</b>
<i>Victoria J. Madigan, Garrett E. Berry, Tyne O. Tyson, Dasean Nardone-White, Jonathan Ark, Zachary C. Elmore, Giridhar Murlidharan, Heather A. Vincent, Aravind Asokan</i>	

**TRANSFORMATION AND ONCOGENESIS**

- Structural Determinants within the Adenovirus Early Region 1A Protein Spacer Region Necessary for Tumorigenesis** e01268-20  
*David P. Molloy, Roger J. Grand*

**GENE DELIVERY**

- Baculovirus Transduction in Mammalian Cells Is Affected by the Production of Type I and III Interferons, Which Is Mediated Mainly by the cGAS-STING Pathway** e01555-20  
*Sabrina Amalfi, Guido Nicolás Molina, Romina Jimena Bevacqua, María Gabriela López, Oscar Taboga, Victoria Alfonso*

**VACCINES AND ANTIVIRAL AGENTS**

- SMAC Mimetic Plus Triple-Combination Bispecific HIVxCD3 Retargeting Molecules in SHIV.C.CH505-Infected, Antiretroviral Therapy-Suppressed Rhesus Macaques** e00793-20  
*Amir Dashti, Chevaughn Waller, Maud Mavigner, Nils Schoof, Katharine J. Bar, George M. Shaw, Thomas H. Vanderford, Shan Liang, Jeffrey D. Lifson, Richard M. Dunham, Guido Ferrari, Marina Tuyishime, Chia-Ying K. Lam, Jeffrey L. Nordstrom, David M. Margolis, Guido Silvestri, Ann Chahroudi*

- Non-nucleoside Inhibitors of Zika Virus RNA-Dependent RNA Polymerase** e00794-20  
*Aicha Gharbi-Ayachi, Sridhar Santhanakrishnan, Yee Hwa Wong, Kitti W. K. Chan, Siok Thing Tan, Roderick W. Bates, Subhash G. Vasudevan, Abbas El Sahili, Julien Lescar*

- Antigenicity and Immunogenicity of HIV-1 Envelope Trimers Complexed to a Small-Molecule Viral Entry Inhibitor** e00958-20  
*S. Munir Alam, Kenneth Cronin, Robert Parks, Kara Anasti, Haitao Ding, Eden P. Go, Heather Desaire, Amanda Eaton, David Montefiori, Joseph Sodroski, John Kappes, Barton F. Haynes, Kevin O. Saunders*

- Broad Anti-coronavirus Activity of Food and Drug Administration-Approved Drugs against SARS-CoV-2 *In Vitro* and SARS-CoV *In Vivo*** e01218-20  
*Stuart Weston, Christopher M. Coleman, Robert Haupt, James Logue, Krystal Matthews, Yize Li, Hanako M. Reyes, Susan R. Weiss, Matthew B. Frieman*

- Probing the Structure of the HIV-1 Envelope Trimer Using Aspartate Scanning Mutagenesis** e01426-20  
*Raksha Das, Rohini Datta, Raghavan Varadarajan*

**PATHOGENESIS AND IMMUNITY**

- Selective Interferon Responses of Intestinal Epithelial Cells Minimize Tumor Necrosis Factor Alpha Cytotoxicity** e00603-20  
*Jacob A. Van Winkle, David A. Constant, Lena Li, Timothy J. Nice*

- Interferon-Inducible GTPase 1 Impedes the Dimerization of Rabies Virus Phosphoprotein and Restricts Viral Replication** e01203-20  
*Bin Tian, Yueming Yuan, Yu Yang, Zhaochen Luo, Baokun Sui, Ming Zhou, Zhen F. Fu, Ling Zhao*

**Severe Human Lassa Fever Is Characterized by Nonspecific T-Cell Activation and Lymphocyte Homing to Inflamed Tissues** e01367-20

*Julia R. Port, David M. Wozniak, Lisa Oestereich, Elisa Pallasch, Beate Becker-Ziaja, Jonas Müller, Monika Rottstegge, Catherine Olal, Sergio Gómez-Medina, Jennifer Oyakhliome, Yemisi Ighodalo, Emmanuel Omomoh, Thomas Olorok, Donatus I. Adomeh, Danny Asogun, Ephraim Ogbani-Emovon, Kristin Hartmann, Susanne Krasemann, Emily V. Nelson, Beatriz Escudero-Pérez, Anita K. McElroy, Stephan Günther, César Muñoz-Fontela*

**Porcine Reproductive and Respiratory Syndrome Virus Promotes SLA-DR-Mediated Antigen Presentation of Nonstructural Proteins To Evoke a Nonneutralizing Antibody Response *In Vivo*** e01423-20

*Chunyan Wu, Bingjun Shi, Di Yang, Kun Zhang, Jie Li, Jie Wang, Hongliang Liu, Qin Zhao, En-Min Zhou, Yuchen Nan*