

INFECTION AND IMMUNITY

Volume 78

April 2010

No. 4

SPOTLIGHT

Articles of Significant Interest Selected from This Issue by the Editors 1415–1416

MINIREVIEW

Bacterial Guanine Nucleotide Exchange Factors SopE-Like and WxxxE Effectors 1417–1425
Richard Bulgin, Benoit Raymond, James A. Garnett, Gad Frankel, Valerie F. Crepin, Cedric N. Berger, and Ana Arbeloa

MOLECULAR PATHOGENESIS

Pathogenicity Islands PAPI-1 and PAPI-2 Contribute Individually and Synergistically to the Virulence of *Pseudomonas aeruginosa* Strain PA14 1437–1446
Ewan M. Harrison, Melissa E. K. Carter, Shelley Luck, Hong-Yu Ou, Xinyi He, Zixin Deng, Chris O'Callaghan, Aras Kadioglu, and Kumar Rajakumar

Pseudomonas aeruginosa Cytotoxin ExoU Is Injected into Phagocytic Cells during Acute Pneumonia 1447–1456
Maureen H. Diaz and Alan R. Hauser

Virulence Plasmid Harbored by Uropathogenic *Escherichia coli* Functions in Acute Stages of Pathogenesis 1457–1467
Corinne K. Cusumano, Chia S. Hung, Swaine L. Chen, and Scott J. Hultgren

Functional Characterization of an Extended Binding Component of the Actin-ADP-Ribosylating C2 Toxin Detected in *Clostridium botulinum* Strain (C) 2300 1468–1474
Charlott Sterthoff, Alexander E. Lang, Carsten Schwan, Andreas Tauch, and Klaus Aktories

Vibrio cholerae Phosphoenolpyruvate Phosphotransferase System Control of Carbohydrate Transport, Biofilm Formation, and Colonization of the Germfree Mouse Intestine 1482–1494
Laetitia Houot, Sarah Chang, Cedric Absalon, and Paula I. Watnick

UpaH Is a Newly Identified Autotransporter Protein That Contributes to Biofilm Formation and Bladder Colonization by Uropathogenic *Escherichia coli* CFT073 1659–1669
Luke P. Allsopp, Makrina Totsika, Jai J. Tree, Glen C. Ulett, Amanda N. Mabbett, Timothy J. Wells, Bostjan Kobe, Scott A. Beatson, and Mark A. Schembri

The Extreme C Terminus of *Shigella flexneri* IpaB Is Required for Regulation of Type III Secretion, Needle Tip Composition, and Binding 1682–1691
A. Dorothea Roehrich, Isabel Martinez-Argudo, Steven Johnson, Ariel J. Blocker, and Andreas K. J. Veennendaal

Examination of Type IV Pilus Expression and Pilus-Associated Phenotypes in *Kingella kingae* Clinical Isolates 1692–1699
Thomas E. Kehl-Fie, Eric A. Porsch, Pablo Yagupsky, Elizabeth A. Grass, Caroline Obert, Daniel K. Benjamin, Jr., and Joseph W. St. Geme III

Clumping Factor A Interaction with Complement Factor I Increases C3b Cleavage on the Bacterial Surface of *Staphylococcus aureus* and Decreases Complement-Mediated Phagocytosis 1717–1727
Pamela S. Hair, Charlene G. Echague, Amber M. Sholl, Justin A. Watkins, Joan A. Geoghegan, Timothy J. Foster, and Kenji M. Cunnion

Transmission of Diverse Oral Bacteria to Murine Placenta: Evidence for the Oral Microbiome as a Potential Source of Intrauterine Infection 1789–1796
Yann Fardini, Peter Chung, Rochelle Dumm, Nishiant Joshi, and Yiping W. Han

Continued on following page

CELLULAR MICROBIOLOGY: PATHOGEN-HOST CELL MOLECULAR INTERACTIONS

- The NF- κ B p50 Subunit Is Protective during Intestinal *Entamoeba histolytica* Infection of 129 and C57BL/6 Mice** Kyou-Nam Cho, Stephen M. Becker, and Eric R. Houpt 1475–1481
- Burkholderia cenocepacia* Creates an Intramacrophage Replication Niche in Zebrafish Embryos, Followed by Bacterial Dissemination and Establishment of Systemic Infection** Annette C. Vergunst, Annemarie H. Meijer, Stephen A. Renshaw, and David O'Callaghan 1495–1508

BACTERIAL INFECTIONS

- Stressor Exposure Disrupts Commensal Microbial Populations in the Intestines and Leads to Increased Colonization by *Citrobacter rodentium*** Michael T. Bailey, Scot E. Dowd, Nicola M. A. Parry, Jeffrey D. Galley, David B. Schauer, and Mark Lyte 1509–1519
- Both Hemolytic Anemia and Malaria Parasite-Specific Factors Increase Susceptibility to Nontyphoidal *Salmonella enterica* Serovar Typhimurium Infection in Mice** Christelle M. Roux, Brian P. Butler, Jennifer Y. Chau, Tatiane A. Paixao, Kong Wai Cheung, Renato L. Santos, Shirley Luckhart, and Renée M. Tsolis 1520–1527
- Characterization of the Contribution to Virulence of Three Large Plasmids of Avian Pathogenic *Escherichia coli* χ 7122 (O78:K80:H9)** Melha Mellata, Keith Ameiss, Hua Mo, and Roy Curtiss III 1528–1541
- Critical Role of Dispensable Genes in *Mycoplasma agalactiae* Interaction with Mammalian Cells** Eric Baranowski, Sébastien Guiral, Eveline Sagné, Agnès Skapski, and Christine Citti 1542–1551
- Expression of the BabA Adhesin during Experimental Infection with *Helicobacter pylori*** Cathy M. Styer, Lori M. Hansen, Cara L. Cooke, Amy M. Gundersen, Sung Sook Choi, Douglas E. Berg, Mohammed Benghezal, Barry J. Marshall, Richard M. Peek, Jr., Thomas Borén, and Jay V. Solnick 1593–1600
- Opacity Proteins Increase *Neisseria gonorrhoeae* Fitness in the Female Genital Tract Due to a Factor under Ovarian Control** Jessica G. Cole, Nanette B. Fulcher, and Ann E. Jerse 1629–1641
- Natural Variability of *In Vitro* Adherence to Fibrinogen and Fibronectin Does Not Correlate with *In Vivo* Infectivity of *Staphylococcus aureus*** Mathilde Ythier, Jose M. Entenza, Jacques Bille, François Vandenesch, Michèle Bes, Philippe Moreillon, and Olga Sakwinska 1711–1716
- Contribution of *Vibrio parahaemolyticus* Virulence Factors to Cytotoxicity, Enterotoxicity, and Lethality in Mice** Hirotaka Hiyoshi, Toshio Kodama, Tetsuya Iida, and Takeshi Honda 1772–1780

HOST RESPONSE AND INFLAMMATION

- Inflammatory Monocytes but Not Neutrophils Are Necessary To Control Infection with *Toxoplasma gondii* in Mice** Ildiko R. Dunay, Anja Fuchs, and L. David Sibley 1564–1570
- Acute Immune Response to *Mycobacterium massiliense* in C57BL/6 and BALB/c Mice** Eduardo Martins de Sousa, Fernando Bonfim de Bortoli, Eduardo Pinheiro Amaral, Aline Carvalho Batista, Thereza Liberman Kipnis, Alessandra Marques Cardoso, André Kipnis, and Ana Paula Junqueira-Kipnis 1571–1581
- Characterization and Modulation of the Immunosuppressive Phase of Sepsis** Jared T. Muenzer, Christopher G. Davis, Kathy Chang, Robert E. Schmidt, W. Michael Dunne, Craig M. Coopersmith, and Richard S. Hotchkiss 1582–1592

Loss of Ability To Self-Heal Malaria upon Taurine Transporter Deletion	Denis Delić, Ulrich Warskulat, Elena Borsch, Saad Al-Qahtani, Saleh Al-Quraishi, Dieter Häussinger, and Frank Wunderlich	1642–1649
Local Host Response to Chlamydial Urethral Infection in Male Guinea Pigs	Yin Wang, Uma Nagarajan, Leah Hennings, Anne K. Bowlin, and Roger G. Rank	1670–1681
Toll-Like Receptor 3 Agonist Protection against Experimental <i>Francisella tularensis</i> Respiratory Tract Infection	Richard B. Pyles, G. Eric Jezek, and Tonyia D. Eaves-Pyles	1700–1710
Contribution of Each of Four Superantigens to <i>Streptococcus equi</i>-Induced Mitogenicity, Gamma Interferon Synthesis, and Immunity	Romain Paillot, Carl Robinson, Karen Steward, Nicola Wright, Thibaud Jourdan, Nicola Butcher, Zoe Heather, and Andrew S. Waller	1728–1739
Testing the Efficacy and Toxicity of Adenylyl Cyclase Inhibitors against Enteric Pathogens Using <i>In Vitro</i> and <i>In Vivo</i> Models of Infection	Scott T. Moen, Carla A. Blumentritt, Terry M. Slater, Shilpa D. Patel, Christopher B. Tutt, Maria E. Estrella-Jimenez, Jennifer Pawlik, Laurie Sower, Vsevolod L. Popov, Catherine H. Schein, Scott R. Gilbertson, Johnny W. Peterson, and Alfredo G. Torres	1740–1749
Broad-Spectrum Activity against Bacterial Mastitis Pathogens and Activation of Mammary Epithelial Cells Support a Protective Role of Neutrophil Cathelicidins in Bovine Mastitis	Linda Tomasinsig, Gennyfer De Conti, Barbara Skerlavaj, Renata Piccinini, Maria Mazzilli, Francesca D'Este, Alessandro Tossi, and Margherita Zanetti	1781–1788
GroEL and Lipopolysaccharide from <i>Francisella tularensis</i> Live Vaccine Strain Synergistically Activate Human Macrophages	Courtney E. Noah, Meenakshi Malik, DeAnna C. Bublitz, Devin Camenares, Timothy J. Sellati, Jorge L. Benach, and Martha B. Furie	1797–1806
FUNGAL AND PARASITIC INFECTIONS		
<i>Candida albicans</i> β-Glucan Exposure Is Controlled by the Fungal <i>CEKI</i>-Mediated Mitogen-Activated Protein Kinase Pathway That Modulates Immune Responses Triggered through Dectin-1	Marta Galán-Díez, David M. Arana, Diego Serrano-Gómez, Leonor Kremer, José M. Casanovas, Mara Ortega, Álvaro Cuesta-Domínguez, Angel L. Corbí, Jesús Pla, and Elena Fernández-Ruiz	1426–1436
Molecular Cloning, Biochemical Characterization, and Partial Protective Immunity of the Heme-Binding Glutathione <i>S</i>-Transferases from the Human Hookworm <i>Necator americanus</i>	Bin Zhan, Samirah Perally, Peter M. Brophy, Jian Xue, Gaddam Goud, Sen Liu, Vehid Deumic, Luciana M. de Oliveira, Jeffrey Bethony, Maria Elena Bottazzi, Desheng Jiang, Portia Gillespie, Shu-hua Xiao, Richi Gupta, Alex Loukas, Najju Ranjit, Sara Lustigman, Yelena Oksov, and Peter Hotez	1552–1563
Extracellular Vesicles from <i>Cryptococcus neoformans</i> Modulate Macrophage Functions	Débora L. Oliveira, Célio G. Freire-de-Lima, Joshua D. Nosanchuk, Arturo Casadevall, Marcio L. Rodrigues, and Leonardo Nimrichter	1601–1609
Contribution of <i>Candida albicans</i> Cell Wall Components to Recognition by and Escape from Murine Macrophages	C. G. J. McKenzie, U. Koser, L. E. Lewis, J. M. Bain, H. M. Mora-Montes, R. N. Barker, N. A. R. Gow, and L. P. Erwig	1650–1658

MICROBIAL IMMUNITY AND VACCINES

CD1d-Dependent B-Cell Help by NK-Like T Cells Leads to Enhanced and Sustained Production of *Bacillus anthracis* Lethal Toxin-Neutralizing Antibodies T. Scott Devera, Lindsay M. Aye, Gillian A. Lang, Sunil K. Joshi, Jimmy D. Ballard, and Mark L. Lang 1610–1617

Assessment of the Duration of Protection in *Campylobacter jejuni* Experimental Infection in Humans David R. Tribble, Shahida Baqar, Daniel A. Scott, Michael L. Oplinger, Fernando Trespalacios, David Rollins, Richard I. Walker, John D. Clements, Steven Walz, Paul Gibbs, Edward F. Burg III, Anthony P. Moran, Lisa Applebee, and A. Louis Bourgeois 1750–1759

MOLECULAR GENOMICS

***Staphylococcus aureus* Fur Regulates the Expression of Virulence Factors That Contribute to the Pathogenesis of Pneumonia** Victor J. Torres, Ahmed S. Attia, William J. Mason, M. Indriati Hood, Brian D. Corbin, Federico C. Beasley, Kelsi L. Anderson, Devin L. Stauff, W. Hayes McDonald, Lisa J. Zimmerman, David B. Friedman, David E. Heinrichs, Paul M. Dunman, and Eric P. Skaar 1618–1628

Comparative Genomic Analyses of Attenuated Strains of *Mycoplasma gallisepticum* S. M. Szczepanek, E. R. Tulman, T. S. Gorton, X. Liao, Z. Lu, J. Zinski, F. Aziz, S. Frasca, Jr., G. F. Kutish, and S. J. Geary 1760–1771