

TABLE OF CONTENTS

MINIREVIEW

Properties and Biological Role of Streptococcal Fraticins

Kari Helene Berg, Truls Johan Biørnstad, Ola Johnsborg, and Leiv Sigve Håvarstein 3515–3522

BIODEGRADATION

Heterologous Expression of Polycyclic Aromatic Hydrocarbon Ring-Hydroxylating Dioxygenase Genes from a Novel Pyrene-Degrading Betaproteobacterium

David R. Singleton, Jing Hu, and Michael D. Aitken 3552–3559

Key Enzymes Enabling the Growth of *Arthrobacter* sp. Strain JBH1 with Nitroglycerin as the Sole Source of Carbon and Nitrogen

Johana Husserl, Joseph B. Hughes, and Jim C. Spain 3649–3655

Transcriptional Response of the Cellobiose Dehydrogenase Gene to Cello- and Xylooligosaccharides in the Basidiomycete *Phanerochaete chrysosporium*

Chiaki Hori, Hitoshi Suzuki, Kiyohiko Igarashi, and Masahiro Samejima 3770–3773

BIOTECHNOLOGY

Remarkable Ability of *Pandoraea pnomenusa* B356 Biphenyl Dioxygenase To Metabolize Simple Flavonoids

Thi Thanh My Pham, Youbin Tu, and Michel Sylvestre 3560–3570

Development of an Engineered Bioluminescent Reporter Phage for Detection of Bacterial Blight of Crucifers

David A. Schofield, Carolee T. Bull, Isael Rubio, W. Patrick Wechter, Caroline Westwater, and Ian J. Molineux 3592–3598

Cloning, Overexpression in *Escherichia coli*, and Characterization of a Thermostable Fungal Acetylxyran Esterase from *Talaromyces emersonii*

Deborah M. Waters, Patrick G. Murray, Yuta Miki, Angel T. Martínez, Maria G. Tuohy, and Craig B. Faulds 3759–3762

ENVIRONMENTAL MICROBIOLOGY

Impact of Nutritional Factors on the Proteome of Intestinal *Escherichia coli*: Induction of OxyR-Dependent Proteins AhpF and Dps by a Lactose-Rich Diet

Monique Rothe, Carl Alpert, Wolfram Engst, Stephanie Musiol, Gunnar Loh, and Michael Blaut 3580–3591

Longitudinal Poisson Regression To Evaluate the Epidemiology of *Cryptosporidium*, *Giardia*, and Fecal Indicator Bacteria in Coastal California Wetlands

Jennifer N. Hogan, Miles E. Daniels, Fred G. Watson, Patricia A. Conrad, Stori C. Oates, Melissa A. Miller, Dane Hardin, Barbara A. Byrne, Clare Dominik, Ann Melli, David A. Jessup, and Woutrina A. Miller 3606–3613

Silver(I), Mercury(II), Cadmium(II), and Zinc(II) Target Exposed Enzymic Iron-Sulfur Clusters when They Toxicify *Escherichia coli*

Fang Fang Xu and James A. Imlay 3614–3621

Central Role of Dynamic Tidal Biofilms Dominated by Aerobic Hydrocarbonoclastic Bacteria and Diatoms in the Biodegradation of Hydrocarbons in Coastal Mudflats

Frédéric Coulon, Panagiota-Myrsini Chronopoulou, Anne Fahy, Sandrine Païssé, Marisol Gofii-Urriza, Louis Peperzak, Laura Acuña Alvarez, Boyd A. McKew, Corina P. D. Brussaard, Graham J. C. Underwood, Kenneth N. Timmis, Robert Duran, and Terry J. McGenity 3638–3648

Density of the Waterborne Parasite <i>Ceratomyxa shasta</i> and Its Biological Effects on Salmon	Sascha L. Hallett, R. Adam Ray, Charlene N. Hurst, Richard A. Holt, Gerri R. Buckles, Stephen D. Atkinson, and Jerri L. Bartholomew	3724–3731
Natural Product Biosynthetic Gene Diversity in Geographically Distinct Soil Microbiomes	Boojala Vijay B. Reddy, Dimitris Kallifidas, Jeffrey H. Kim, Zachary Charlop-Powers, Zhiyang Feng, and Sean F. Brady	3744–3752
Isolation of Potentially Novel <i>Brucella</i> spp. from Frogs	Tobias Eisenberg, Hans-Peter Hamann, Ute Kaim, Karen Schlez, Helga Seeger, Nicole Schauerte, Falk Melzer, Herbert Tomaso, Holger C. Scholz, Mark S. Koylass, Adrian M. Whatmore, and Michael Zschöck	3753–3755
FOOD MICROBIOLOGY		
Characterization of the Intracellular Glutamate Decarboxylase System: Analysis of Its Function, Transcription, and Role in the Acid Resistance of Various Strains of <i>Listeria monocytogenes</i>	Kimon-Andreas G. Karatzas, Laura Suur, and Conor P. O'Byrne	3571–3579
Genomic Sequence of Bacteriophage ATCC 8074-B1 and Activity of Its Endolysin and Engineered Variants against <i>Clostridium sporogenes</i>	Melinda J. Mayer, Michael J. Gasson, and Arjan Narbad	3685–3692
Psychrotolerant <i>Paenibacillus tundrae</i> Isolates from Barley Grains Produce New Cereulide-Like Depsipeptides (Paenilide and Homopaenilide) That Are Highly Toxic to Mammalian Cells	Stiina Rasimus, Raimo Mikkola, Maria A. Andersson, Vera V. Teplova, Natalia Venediktova, Christine Ek-Kommonen, and Mirja Salkinoja-Salonen	3732–3743
Detection of Human Food-Borne and Zoonotic Viruses on Irrigated, Field-Grown Strawberries	Julie Brassard, Marie-Josée Gagné, Mylène Généreux, and Caroline Côté	3763–3766
GENETICS AND MOLECULAR BIOLOGY		
Genetic Analysis of the Upper Phenylacetate Catabolic Pathway in the Production of Tropodithietic Acid by <i>Phaeobacter gallaeciensis</i>	Martine Berger, Nelson L. Brock, Heiko Liesegang, Marco Dogs, Ines Preuth, Meinhard Simon, Jeroen S. Dickschat, and Thorsten Brinkhoff	3539–3551
Functional Robustness of a Polycyclic Aromatic Hydrocarbon Metabolic Network Examined in a <i>nidA</i> Aromatic Ring-Hydroxylating Oxygenase Mutant of <i>Mycobacterium vanbaalenii</i> PYR-1	Seong-Jae Kim, Jaekyeong Song, Ohgew Kweon, Ricky D. Holland, Dae-Wi Kim, Jongnam Kim, Li-Rong Yu, and Carl E. Cerniglia	3715–3723
GEOMICROBIOLOGY		
Quantitative Fluorescence <i>In Situ</i> Hybridization Analysis of Microbial Consortia from a Biogenic Gas Field in Alaska's Cook Inlet Basin	Katherine S. Dawson, Dariusz Strapoć, Brad Huizinga, Ulrika Lidstrom, Matt Ashby, and Jennifer L. Macalady	3599–3605
INVERTEBRATE MICROBIOLOGY		
Role of the Lizard <i>Teira dugesii</i> as a Potential Host for <i>Ixodes ricinus</i> Tick-Borne Pathogens	R. De Sousa, I. Lopes de Carvalho, A. S. Santos, C. Bernardes, N. Milhano, J. Jesus, D. Menezes, and M. S. Núncio	3767–3769
METHODS		
Metagenomic Analysis of <i>Streptomyces lividans</i> Reveals Host-Dependent Functional Expression	Matthew D. McMahon, Changhui Guan, Jo Handelsman, and Michael G. Thomas	3622–3629
Cytoplasmic pH Response to Acid Stress in Individual Cells of <i>Escherichia coli</i> and <i>Bacillus subtilis</i> Observed by Fluorescence Ratio Imaging Microscopy	Keith A. Martinez II, Ryan D. Kitko, J. Patrick Mershon, Haley E. Adcox, Kotiba A. Malek, Melanie B. Berkmen, and Joan L. Slonczewski	3706–3714

Markerless Gene Deletion System for Sphingomonads

MICROBIAL ECOLOGY

Analysis of Structure and Composition of Bacterial Core Communities in Mature Drinking Water Biofilms and Bulk Water of a Citywide Network in Germany

MYCOLOGY

Intraradical Dynamics of Two Coexisting Isolates of the Arbuscular Mycorrhizal Fungus *Glomus intraradices* Sensu Lato as Estimated by Real-Time PCR of Mitochondrial DNAFunctional Analysis of the Degradation of Cellulosic Substrates by a *Chaetomium globosum* Endophytic Isolate

PLANT MICROBIOLOGY

Metabolome and Transcriptome of the Interaction between *Ustilago maydis* and *Fusarium verticillioides* In VitroA *Pseudomonas viridisflava*-Related Bacterium Causes a Dark-Reddish Spot Disease in *Glycine max*

PUBLIC HEALTH MICROBIOLOGY

Evidence of Host-Associated Populations of *Cryptosporidium parvum* in ItalyCharacterization of Extended-Spectrum β-Lactamase Genes Found among *Escherichia coli* Isolates from Duck and Environmental Samples Obtained on a Duck FarmMolecular Epidemiology of *Brucella abortus* Isolates from Cattle, Elk, and Bison in the United States, 1998 to 2011Influence of Seasonality on the Genetic Diversity of *Vibrio parahaemolyticus* in New Hampshire Shellfish Waters as Determined by Multilocus Sequence Analysis

ERRATUM

Transcriptional Responses of *Escherichia coli* K-12 and O157:H7 Associated with Lettuce LeavesAndreas Kaczmarczyk, Julia A. Vorholt,
and Anne Francez-Charlot

3774–3777

Karsten Henne, Leila Kahlisch, Ingrid
Brettar, and Manfred G. Höfle

3530–3538

Karol Krak, Martina Janoušková, Petra
Caklová, Miroslav Vosátka, and Helena
Štorchová

3630–3637

Paolo Longoni, Marinella Rodolfi,
Laura Pantaleoni, Enrico Doria,
Lorenzo Concia, Anna Maria Picco,
and Rino Cella

3693–3705

Wilfried Jonkers, Alma E. Rodriguez
Estrada, Keunsub Lee, Andrew
Breakspear, Georgiana May, and H.
Corby Kistler

3656–3667

Ana J. González, Ana M. Fernández,
Mateo San José, Germán González-
Varela, and M. Rosario Rodicio

3756–3758

Rosanna Drumo, Giovanni Widmer,
Liam J. Morrison, Andy Tait, Vincenzo
Grelloni, Nicoletta D'Avino, Edoardo
Pozio, and Simone M. Cacciò

3523–3529

Junying Ma, Jian-Hua Liu, Luchao Lv,
Zhiyong Zong, Yan Sun, Hongqing
Zheng, ZhangLiu Chen, and Zhen-Ling
Zeng

3668–3673

James Higgins, Tod Stuber, Christine
Quance, William H. Edwards, Rebekah
V. Tiller, Tom Linfield, Jack Rhyan,
Angela Berte, and Beth Harris

3674–3684

Crystal N. Ellis, Brian M. Schuster,
Megan J. Striplin, Stephen H. Jones,
Cheryl A. Whistler, and Vaughn S.
Cooper

3778–3782

Ryan C. Fink, Elaine P. Black, Zhe Hou,
Masayuki Sugawara, Michael J.
Sadowsky, and Francisco
Diez-Gonzalez

3783