

GENETICS AND MOLECULAR BIOLOGY

- Genetic Rearrangement Strategy for Optimizing the Dibenzothiophene Biotransformation Pathway in *Rhodococcus erythropolis*** Guo-qiang Li, Shan-shan Li, Ming-lu Zhang, Jun Wang, Lin Zhu, Feng-lai Liang, Ru-lin Liu, and Ting Ma 971–976
- Sensitivity of an *Acinetobacter baylyi* *mpl* Mutant to DNA Damage** Adityarup Chakravorty, Martha Klovstad, Greg Peterson, Robin E. Lindeman, and Leslie A. Gregg-Jolly 1273–1275
- Determination of Glycosyltransferase Specificities for the *Escherichia coli* O111 O Antigen by a Generic Approach** Gordon Stevenson, Manuela Dieckelmann, and Peter R. Reeves 1294–1298

ENZYMOLGY AND PROTEIN ENGINEERING

- Characterization of a Novel Angular Dioxygenase from Fluorene-Degrading *Sphingomonas* sp. Strain LB126** Luc Schuler, Sinéad M. Ní Chadhain, Yves Jouanneau, Christine Meyer, Gerben J. Zylstra, Pascal Hols, and Spiros N. Agathos 1050–1057
- Relevant Double Mutations in Bioengineered *Streptomyces clavuligerus* Deacetoxycephalosporin C Synthase Result in Higher Binding Specificities Which Improve Penicillin Bioconversion** Kian Sim Goo, Chun Song Chua, and Tiow-Suan Sim 1167–1175
- Improvement of the Thermostability and Activity of a Pectate Lyase by Single Amino Acid Substitutions, Using a Strategy Based on Melting-Temperature-Guided Sequence Alignment** Zhizhuang Xiao, Hélène Bergeron, Stephan Grosse, Manon Beauchemin, Marie-Line Garron, David Shaya, Traian Sulea, Mirosław Cygler, and Peter C. K. Lau 1183–1189
- Functional-Genomics-Based Identification and Characterization of Open Reading Frames Encoding α -Glucoside-Processing Enzymes in the Hyperthermophilic Archaeon *Pyrococcus furiosus*** Donald A. Comfort, Chung-Jung Chou, Shannon B. Connors, Amy L. VanFossen, and Robert M. Kelly 1281–1283

PHYSIOLOGY AND BIOTECHNOLOGY

- Suppressing Posttranslational Gluconoylation of Heterologous Proteins by Metabolic Engineering of *Escherichia coli*** Juan C. Aon, Richard J. Caimi, Alexander H. Taylor, Quinn Lu, Femi Oluboyede, Jennifer Dally, Michelle D. Kessler, John J. Kerrigan, Tia S. Lewis, Lisa A. Wysocki, and Pramatesh S. Patel 950–958
- Extracellular Expression of a Functional Recombinant *Ganoderma lucidum* Immunomodulatory Protein by *Bacillus subtilis* and *Lactococcus lactis*** Chuan M. Yeh, Chun K. Yeh, Xun Y. Hsu, Qiu M. Luo, and Ming Y. Lin 1039–1049
- Poly(3-Hydroxybutyrate) (PHB) Depolymerase PhaZa1 Is Involved in Mobilization of Accumulated PHB in *Ralstonia eutropha* H16** Keiichi Uchino, Terumi Saito, and Dieter Jendrossek 1058–1063
- Anaerobic Conditions Promote Expression of Sfp Fimbriae and Adherence of Sorbitol-Fermenting Enterohemorrhagic *Escherichia coli* O157:NM to Human Intestinal Epithelial Cells** Anne Müssen, Martina Bielaszewska, Lilo Greune, Christian H. Schweppe, Johannes Müthing, Herbert Schmidt, M. Alexander Schmidt, Helge Karch, and Wenlan Zhang 1087–1093

Continued on following page

The Inhibitory Spectrum of Thermophilin 9 from <i>Streptococcus thermophilus</i> LMD-9 Depends on the Production of Multiple Peptides and the Activity of BlpG_{St}, a Thiol-Disulfide Oxidase	Laetitia Fontaine and Pascal Hols	1102–1110
System Using Tandem Repeats of the cA Peptidoglycan-Binding Domain from <i>Lactococcus lactis</i> for Display of both N- and C-Terminal Fusions on Cell Surfaces of Lactic Acid Bacteria	Kenji Okano, Qiao Zhang, Sakurako Kimura, Junya Narita, Tsutomu Tanaka, Hideki Fukuda, and Akihiko Kondo	1117–1123
Fermentative Utilization of Glycerol by <i>Escherichia coli</i> and Its Implications for the Production of Fuels and Chemicals	Abhishek Murarka, Yandi Dharmadi, Syed Shams Yazdani, and Ramon Gonzalez	1124–1135
Contribution of Citrate Metabolism to the Growth of <i>Lactococcus lactis</i> CRL264 at Low pH	Claudia Sánchez, Ana Rute Neves, João Cavalheiro, Margarida Moreira dos Santos, Nieves García-Quintáns, Paloma López, and Helena Santos	1136–1144
Adherence of <i>Helicobacter pylori</i> to Abiotic Surfaces Is Influenced by Serum	John C. Williams, Karla A. McInnis, and Traci L. Testerman	1255–1258
Role of <i>galK</i> and <i>galM</i> in Galactose Metabolism by <i>Streptococcus thermophilus</i>	Katy Vaillancourt, Nathalie Bédard, Christian Bart, Mélanie Tessier, Gilles Robitaille, Nathalie Turgeon, Michel Frenette, Sylvain Moineau, and Christian Vadeboncoeur	1264–1267
MYCOLOGY		
Detection and Identification of Fungi Intimately Associated with the Brown Seaweed <i>Fucus serratus</i>	Alga Zuccaro, Conrad L. Schoch, Joseph W. Spatafora, Jan Kohlmeyer, Siegfried Draeger, and Julian I. Mitchell	931–941
N-Glycan Modification in <i>Aspergillus</i> Species	Elke Kainz, Andreas Gallmetzer, Christian Hatzl, Juergen H. Nett, Huijuan Li, Thorsten Schinko, Robert Pachlinger, Harald Berger, Yazmid Reyes-Dominguez, Andreas Bernreiter, Tillmann Gerngross, Stefan Wildt, and Joseph Strauss	1076–1086
PUBLIC HEALTH MICROBIOLOGY		
Contribution of Copper Ion Resistance to Survival of <i>Escherichia coli</i> on Metallic Copper Surfaces	Christophe Espírito Santo, Nadine Taudte, Dietrich H. Nies, and Gregor Grass	977–986
Risk of Gastrointestinal Disease Associated with Exposure to Pathogens in the Water of the Lower Passaic River	Ellen Donovan, Ken Unice, Jennifer D. Roberts, Mark Harris, and Brent Finley	994–1003
Risk of Gastrointestinal Disease Associated with Exposure to Pathogens in the Sediments of the Lower Passaic River	E. P. Donovan, D. F. Staskal, K. M. Unice, J. D. Roberts, L. C. Haws, B. L. Finley, and M. A. Harris	1004–1018
Rottlerin Inhibits Chlamydial Intracellular Growth and Blocks Chlamydial Acquisition of Sphingolipids from Host Cells	Pooja Shivshankar, Lei Lei, Jie Wang, and Guangming Zhong	1243–1249
ENVIRONMENTAL MICROBIOLOGY		
Effect of Shadowing on Survival of Bacteria under Conditions Simulating the Martian Atmosphere and UV Radiation	Shariff Osman, Zan Peeters, Myron T. La Duc, Rocco Mancinelli, Pascale Ehrenfreund, and Kasthuri Venkateswaran	959–970

Utilization of DNA as a Sole Source of Phosphorus, Carbon, and Energy by <i>Shewanella</i> spp.: Ecological and Physiological Implications for Dissimilatory Metal Reduction	Grigoriy E. Pinchuk, Christine Ammons, David E. Culley, Shu-Mei W. Li, Jeff S. McLean, Margaret F. Romine, Kenneth H. Nealson, Jim K. Fredrickson, and Alexander S. Beliaev	1198–1208
Intergeneric Coaggregation among Drinking Water Bacteria: Evidence of a Role for <i>Acinetobacter calcoaceticus</i> as a Bridging Bacterium	Lúcia Chaves Simões, Manuel Simões, and Maria João Vieira	1259–1263
The Genetically Remote Pathogenic Strain NVH391-98 of the <i>Bacillus cereus</i> Group Is Representative of a Cluster of Thermophilic Strains	Sandrine Auger, Nathalie Galleron, Elena Bidnenko, S. Dusko Ehrlich, Alla Lapidus, and Alexei Sorokin	1276–1280
MICROBIAL ECOLOGY		
Isolation and Distribution of a Novel Iron-Oxidizing Crenarchaeon from Acidic Geothermal Springs in Yellowstone National Park	M. Kozubal, R. E. Macur, S. Korf, W. P. Taylor, G. G. Ackerman, A. Nagy, and W. P. Inskeep	942–949
pH Gradient-Induced Heterogeneity of Fe(III)-Reducing Microorganisms in Coal Mining-Associated Lake Sediments	Marco Blöthe, Denise M. Akob, Joel E. Kostka, Kathrin Göschel, Harold L. Drake, and Kirsten Küsel	1019–1029
Comparison of Fungal Activities on Wood and Leaf Litter in Unaltered and Nutrient-Enriched Headwater Streams	Vladislav Gulis, Keller Suberkropp, and Amy D. Rosemond	1094–1101
Quantifying Microbial Utilization of Petroleum Hydrocarbons in Salt Marsh Sediments by Using the ¹³C Content of Bacterial rRNA	Ann Pearson, Kimberly S. Kraunz, Alex L. Sessions, Anne E. Dekas, William D. Leavitt, and Katrina J. Edwards	1157–1166
Genetic Diversity of Hydrogen-Producing Bacteria in an Acidophilic Ethanol-H₂-Coproducting System, Analyzed Using the [Fe]-Hydrogenase Gene	Defeng Xing, Nanqi Ren, and Bruce E. Rittmann	1232–1239
Blackbirds and Song Thrushes Constitute a Key Reservoir of <i>Borrelia garinii</i>, the Causative Agent of Borreliosis in Central Europe	Veronika Taragel'ová, Juraj Koči, Klára Hanincová, Klaus Kurtenbach, Markéta Derdáková, Nick H. Ogden, Ivan Literák, Elena Kocianová, and Milan Labuda	1289–1293
FOOD MICROBIOLOGY		
Predictive Model for Inactivation of Feline Calicivirus, a Norovirus Surrogate, by Heat and High Hydrostatic Pressure	Roman Buckow, Sonja Isbarn, Dietrich Knorr, Volker Heinz, and Anselm Lehmacher	1030–1038
Behavior of <i>Bacillus anthracis</i> Strains Sterne and Ames K0610 in Sterile Raw Ground Beef	Mark L. Tamplin, Robert Phillips, Tod A. Stewart, John B. Luchansky, and Lynda C. Kelley	1111–1116
Microbiological Quality of Bagged Cut Spinach and Lettuce Mixes	Iris Valentin-Bon, Andrew Jacobson, Steven R. Monday, and Peter C. H. Feng	1240–1242
Characterization of Shiga Toxin-Producing <i>Escherichia coli</i> Isolates Associated with Two Multistate Food-Borne Outbreaks That Occurred in 2006	G. A. Uhlich, J. R. Sinclair, N. G. Warren, W. A. Chmielecki, and P. Fratamico	1268–1272
Bacterial Cinnamoyl Esterase Activity Screening for the Production of a Novel Functional Food Product	Simone Guglielmetti, Ivano De Noni, Federica Caracciolo, Francesco Molinari, Carlo Parini, and Diego Mora	1284–1288

INVERTEBRATE MICROBIOLOGY

- Novel Isolate of *Bacillus thuringiensis* subsp. *thuringiensis* That Produces a Quasicuboidal Crystal of Cry1Ab21 Toxic to Larvae of *Trichoplusia ni*** Izabela Swiecicka, Dennis K. Bideshi, and Brian A. Federici 923–930
- Changes in Bacterial Communities of the Marine Sponge *Mycale laxissima* on Transfer into Aquaculture** Naglaa M. Mohamed, Julie J. Enticknap, Jayme E. Lohr, Scott M. McIntosh, and Russell T. Hill 1209–1222

METHODS

- Genetic Tools for Select-Agent-Compliant Manipulation of *Burkholderia pseudomallei*** Kyoung-Hee Choi, Takehiko Mima, Yveth Casart, Drew Rholl, Ayush Kumar, Ifor R. Beacham, and Herbert P. Schweizer 1064–1075
- Melanin-Based High-Throughput Screen for L-Tyrosine Production in *Escherichia coli*** Christine Nicole S. Santos and Gregory Stephanopoulos 1190–1197
- Development of Multiple-Locus Variable-Number Tandem-Repeat Analysis for the Molecular Subtyping of *Enterobacter sakazakii*** N. R. Mullane, M. Ryan, C. Iversen, M. Murphy, P. O’Gaora, T. Quinn, P. Whyte, P. G. Wall, and S. Fanning 1223–1231
- Strategy for In Situ Detection of Natural Transformation-Based Horizontal Gene Transfer Events** Aurora Rizzi, Alessandra Pontiroli, Lorenzo Brusetti, Sara Borin, Claudia Sorlini, Alessandro Abruzzese, Gian Attilio Sacchi, Timothy M. Vogel, Pascal Simonet, Marco Bazzicalupo, Kaare Magne Nielsen, Jean-Michel Monier, and Daniele Daffonchio 1250–1254

BIODEGRADATION

- Enrichment, Isolation, and Phylogenetic Identification of Polycyclic Aromatic Hydrocarbon-Degrading Bacteria from Elizabeth River Sediments** Edward J. Hilyard, Joanne M. Jones-Meehan, Barry J. Spargo, and Russell T. Hill 1176–1182

EVOLUTIONARY AND GENOMIC MICROBIOLOGY

- Genomic Differences between *Fibrobacter succinogenes* S85 and *Fibrobacter intestinalis* DR7, Identified by Suppression Subtractive Hybridization** M. Qi, K. E. Nelson, S. C. Daugherty, W. C. Nelson, I. R. Hance, M. Morrison, and C. W. Forsberg 987–993
- Genome of the Epsilonproteobacterial Chemolithoautotroph *Sulfurimonas denitrificans*** Stefan M. Sievert, Kathleen M. Scott, Martin G. Klotz, Patrick S. G. Chain, Loren J. Hauser, James Hemp, Michael Hügler, Miriam Land, Alla Lapidus, Frank W. Larimer, Susan Lucas, Stephanie A. Malfatti, Folker Meyer, Ian T. Paulsen, Qinghu Ren, Jörg Simon, and the USF Genomics Class 1145–1156

Cover photograph (Copyright © 2008, American Society for Microbiology. All Rights Reserved.): Structure of a hemp fiber-processing pectate lyase of *Xanthomonas* origin, illustrating a rare example of single-amino-acid substitution that results in a 6°C increase in the apparent melting temperature of the enzyme without compromising its catalytic efficiency. The overall right-handed β -helical structure is rendered as a yellow ribbon. Side chains at nine mutation positions are shown as CPK models and colored by mutation outcomes as follows: at residue R236 (blue), which is partially solvent exposed, a mutation to phenylalanine is stabilizing; at residue A31 (red), which is also solvent exposed, a mutation to glycine is activating; and mutations at other positions (green) have a marginal or detrimental effect on thermal stability. (See related article on page 1183.)