

TABLE OF CONTENTS

SPOTLIGHT

- Articles of Significant Interest Selected from This Issue by the Editors 1

COMMENTARY

- Selman A. Waksman, Winner of the 1952 Nobel Prize for Physiology or Medicine H. Boyd Woodruff 2–8

MINIREVIEWS

- Genomic Overview and Biological Functions of Exopolysaccharide Biosynthesis in *Bifidobacterium* spp. Claudio Hidalgo-Cantabrana, Borja Sánchez, Christian Milani, Marco Ventura, Abelardo Margolles, Patricia Ruas-Madiedo 9–18

- Transferable Denitrification Capability of *Thermus thermophilus* Laura Alvarez, Carlos Bricio, Alba Blesa, Aurelio Hidalgo, José Berenguer 19–28

BIOTECHNOLOGY

- Preparation of Sticky *Escherichia coli* through Surface Display of an Adhesive Catecholamine Moiety Joseph P. Park, Min-Jung Choi, Se Hun Kim, Seung Hwan Lee, Haeshin Lee 43–53

- Establishing the Yeast *Kluyveromyces lactis* as an Expression Host for Production of the Saposin-Like Domain of the Aspartic Protease Cirsin Pedro Curto, Daniela Lufrano, Cátia Pinto, Valéria Custódio, Ana Catarina Gomes, Sebastián A. Trejo, Laura Bakás, Sandra Vairo-Cavalli, Carlos Faro, Isaura Simões 86–96

- Impact of Substratum Surface on Microbial Community Structure and Treatment Performance in Biological Aerated Filters Lavane Kim, Eulyng Pagaling, Yi Y. Zuo, Tao Yan 177–183

- Specific Discrimination of Three Pathogenic *Salmonella enterica* subsp. *enterica* Serotypes by *carB*-Based Oligonucleotide Microarray Hwa Hui Shin, Byeong Hee Hwang, Jeong Hyun Seo, Hyung Joon Cha 366–373

- Genomic Investigation of Lysogen Formation and Host Lysis Systems of the *Salmonella* Temperate Bacteriophage SPN9CC Hakdong Shin, Ju-Hoon Lee, Hyunjin Yoon, Dong-Hyun Kang, Sangryeol Ryu 374–384

ENVIRONMENTAL MICROBIOLOGY

- A Novel Gene Involved in the Survival of *Streptococcus mutans* under Stress Conditions Dan Li, Yukie Shibata, Toru Takeshita, Yoshihisa Yamashita 97–103

- Resistance of *Bacillus subtilis* Spore DNA to Lethal Ionizing Radiation Damage Relies Primarily on Spore Core Components and DNA Repair, with Minor Effects of Oxygen Radical Detoxification Ralf Moeller, Marina Raguse, Günther Reitz, Ryuichi Okayasu, Zuofeng Li, Stuart Klein, Peter Setlow, Wayne L. Nicholson 104–109

- Decay of Fecal Indicator Bacterial Populations and Bovine-Associated Source-Tracking Markers in Freshly Deposited Cow Pats Adelumola Oladeinde, Thomas Bohrmann, Kelvin Wong, S. T. Purucker, Ken Bradshaw, Reid Brown, Blake Snyder, Marirosa Molina 110–118

- Extracellular Electron Transport-Mediated Fe(III) Reduction by a Community of Alkaliphilic Bacteria That Use Flavins as Electron Shuttles Samuel J. Fuller, Duncan G. G. McMillan, Marc B. Renz, Martin Schmidt, Ian T. Burke, Douglas I. Stewart 128–137

Single-Cell Analyses Revealed Transfer Ranges of IncP-1, IncP-7, and IncP-9 Plasmids in a Soil Bacterial Community	Masaki Shintani, Kazuhiro Matsui, Jun-ichi Inoue, Akira Hosoyama, Shoko Ohji, Atsushi Yamazoe, Hideaki Nojiri, Kazuhide Kimbara, Moriya Ohkuma	138–145
Detection of Extended-Spectrum Beta-Lactamase (ESBL)-Producing <i>Escherichia coli</i> on Flies at Poultry Farms	Hetty Blaak, Raditijo A. Hamidjaja, Angela H. A. M. van Hoek, Lianne de Heer, Ana Maria de Roda Husman, Franciska M. Schets	239–246
Temporal Variability of the Bioaerosol Background at a Subway Station: Concentration Level, Size Distribution, and Diversity of Airborne Bacteria	Marius Dybwad, Gunnar Skogan, Janet Martha Blatny	257–270
Predominant <i>Acidilobus</i> -Like Populations from Geothermal Environments in Yellowstone National Park Exhibit Similar Metabolic Potential in Different Hypoxic Microbial Communities	Z. J. Jay, D. B. Rusch, S. G. Tringe, C. Bailey, R. M. Jennings, W. P. Inskeep	294–305
Metatranscriptomic Analyses of Plankton Communities Inhabiting Surface and Subpycnocline Waters of the Chesapeake Bay during Oxidic-Anoxic-Oxidic Transitions	Ian Hewson, Erin M. Eggleston, Mary Doherty, Dong Yoon Lee, Michael Owens, James P. Shapleigh, Jeffrey C. Cornwell, Byron C. Crump	328–338
Diversity of <i>Rickettsiales</i> in the Microbiome of the Lone Star Tick, <i>Amblyomma americanum</i>	Loganathan Ponnusamy, Antonio Gonzalez, Will Van Treuren, Sophie Weiss, Christian M. Parobek, Jonathan J. Juliano, Rob Knight, R. Michael Roe, Charles S. Apperson, Steven R. Meshnick	354–359
ENZYMOLGY AND PROTEIN ENGINEERING		
A New Synthetic Route to <i>N</i> -Benzyl Carboxamides through the Reverse Reaction of <i>N</i> -Substituted Formamide Deformylase	Yoshiteru Hashimoto, Toshihide Sakashita, Hiroshi Fukatsu, Hiroyoshi Sato, Michihiko Kobayashi	61–69
Novel Characteristics of Succinate Coenzyme A (Succinate-CoA) Ligases: Conversion of Malate to Methyl-CoA and CoA-Thioester Formation of Succinate Analogues <i>In Vitro</i>	Johannes Christoph Nolte, Marc Schürmann, Catherine-Louise Schepers, Elvira Vogel, Jan Hendrik Wübbeler, Alexander Steinbüchel	166–176
A Distinct Model of Synergism between a Processive Endocellulase (TfCel9A) and an Exocellulase (TfCel48A) from <i>Thermobifida fusca</i>	Maxim Kostylev, David Wilson	339–344
EVOLUTIONARY AND GENOMIC MICROBIOLOGY		
Nonclinical and Clinical <i>Enterococcus faecium</i> Strains, but Not <i>Enterococcus faecalis</i> Strains, Have Distinct Structural and Functional Genomic Features	Eun Bae Kim, Maria L. Marco	154–165
Molecular Investigation and Phylogeny of <i>Anaplasma</i> spp. in Mediterranean Ruminants Reveal the Presence of Neutrophil-Tropic Strains Closely Related to <i>A. platys</i>	Rosanna Zobba, Antonio G. Anfossi, Maria Luisa Pinna Parpaglia, Gian Mario Dore, Bernardo Chessa, Antonio Spezzigu, Stefano Rocca, Stefano Visco, Marco Pittau, Alberto Alberti	271–280
FOOD MICROBIOLOGY		
The Ability of Bifidobacteria To Degrade Arabinoxylan Oligosaccharide Constituents and Derived Oligosaccharides Is Strain Dependent	Audrey Rivière, Frédéric Moens, Marija Selak, Dominique Maes, Stefan Weckx, Luc De Vuyst	204–217
The Cold-Induced Two-Component System CBO0366/CBO0365 Regulates Metabolic Pathways with Novel Roles in Group I <i>Clostridium botulinum</i> ATCC 3502 Cold Tolerance	Elias Dahlsten, Zhen Zhang, Panu Somervuo, Nigel P. Minton, Miia Lindström, Hannu Korkeala	306–319

Metabolic Engineering of the Regulators in Nitrogen Catabolite Repression To Reduce the Production of Ethyl Carbamate in a Model Rice Wine System	Xinrui Zhao, Huijun Zou, Jianwei Fu, Jingwen Zhou, Guocheng Du, Jian Chen	392–398
The CLO3403/CLO3404 Two-Component System of <i>Clostridium botulinum</i> E1 Beluga Is Important for Cold Shock Response and Growth at Low Temperatures	Gerald Mascher, Yağmur Derman, David G. Kirk, Eveliina Palonen, Miia Lindström, Hannu Korkeala	399–407
GENETICS AND MOLECULAR BIOLOGY		
Synthetic Promoters Functional in <i>Francisella novicida</i> and <i>Escherichia coli</i>	Ralph L. McWhinnie, Francis E. Nano	226–234
GEOMICROBIOLOGY		
Depth-Related Changes in Community Structure of Culturable Mineral Weathering Bacteria and in Weathering Patterns Caused by Them along Two Contrasting Soil Profiles	Jing Huang, Xia-Fang Sheng, Jun Xi, Lin-Yan He, Zhi Huang, Qi Wang, Zhen-Dong Zhang	29–42
Community Dynamics and Activity of Ammonia-Oxidizing Prokaryotes in Intertidal Sediments of the Yangtze Estuary	Yanling Zheng, Lijun Hou, Silvia Newell, Min Liu, Junliang Zhou, Hui Zhao, Lili You, Xunliang Cheng	408–419
INVERTEBRATE MICROBIOLOGY		
Toxicity of Bioactive and Probiotic Marine Bacteria and Their Secondary Metabolites in <i>Artemia</i> sp. and <i>Caenorhabditis elegans</i> as Eukaryotic Model Organisms	Anna Katrin Neu, Maria Månsson, Lone Gram, María J. Prol-García	146–153
Factors Affecting the Initial Adhesion and Retention of the Plant Pathogen <i>Xylella fastidiosa</i> in the Foregut of an Insect Vector	Nabil Killiny, Rodrigo P. P. Almeida	420–426
METHODS		
Critical Assessment of Glyco- and Phospholipid Separation by Using Silica Chromatography	Sandra M. Heinzlmann, Nicole J. Bale, Ellen C. Hopmans, Jaap S. Sinninghe Damsté, Stefan Schouten, Marcel T. J. van der Meer	360–365
MICROBIAL ECOLOGY		
Novel Psychropiezophilic <i>Oceanospirillales</i> Species <i>Profundimonas piezophila</i> gen. nov., sp. nov., Isolated from the Deep-Sea Environment of the Puerto Rico Trench	Yi Cao, Roger A. Chastain, Emiley A. Eloe, Yuichi Nogi, Chiaki Kato, Douglas H. Bartlett	54–60
Response of Free-Living Nitrogen-Fixing Microorganisms to Land Use Change in the Amazon Rainforest	Babur S. Mirza, Chotima Potisap, Klaus Nüsslein, Brendan J. M. Bohannon, Jorge L. M. Rodrigues	281–288
PHYSIOLOGY		
Osmoadaptation Strategy of the Most Halophilic Fungus, <i>Wallemia ichthyophaga</i> , Growing Optimally at Salinities above 15% NaCl	Janja Zajc, Tina Kogej, Erwin A. Galinski, José Ramos, Nina Gunde-Cimerman	247–256
Glycine Betaine as a Direct Substrate for Methanogens (<i>Methanococoides</i> spp.)	Andrew J. Watkins, Erwan G. Roussel, R. John Parkes, Henrik Sass	289–293
Monitoring Rates and Heterogeneity of High-Pressure Germination of <i>Bacillus</i> Spores by Phase-Contrast Microscopy of Individual Spores	Lingbo Kong, Christopher J. Doona, Peter Setlow, Yong-qing Li	345–353
PLANT MICROBIOLOGY		
Characterization of Bacteriophages Cp1 and Cp2, the Strain-Typing Agents for <i>Xanthomonas axonopodis</i> pv. <i>citri</i>	Abdelmonim Ali Ahmad, Megumi Ogawa, Takeru Kawasaki, Makoto Fujie, Takashi Yamada	77–85

Microbial Biotransformation of Gentiopicroside by the Endophytic Fungus <i>Penicillium crustosum</i> 2T01Y01	Wen-Liang Zeng, Wan-Kui Li, Han Han, Yan-Yan Tao, Li Yang, Zheng-Tao Wang, Kai-Xian Chen	184–192
Primer Modification Improves Rapid and Sensitive <i>In Vitro</i> and Field-Deployable Assays for Detection of High Plains Virus Variants	M. Arif, G. S. Aguilar-Moreno, A. Wayadande, J. Fletcher, F. M. Ochoa-Corona	320–327
PUBLIC AND ENVIRONMENTAL HEALTH MICROBIOLOGY		
Interaction between the Microbial Community and Invading <i>Escherichia coli</i> O157:H7 in Soils from Vegetable Fields	Zhiyuan Yao, Haizhen Wang, Laosheng Wu, Jianjun Wu, Philip C. Brookes, Jianming Xu	70–76
Estimating the Prevalence of Potential Enteropathogenic <i>Escherichia coli</i> and Intimin Gene Diversity in a Human Community by Monitoring Sanitary Sewage	Kun Yang, Eulyn Pagaling, Tao Yan	119–127
Microbiomes of Unreactive and Pathologically Altered Ileocecal Lymph Nodes of Slaughter Pigs	Evelyne Mann, Monika Dzieciol, Barbara U. Metzler-Zebeli, Martin Wagner, Stephan Schmitz-Esser	193–203
Host Specificity and Source of <i>Enterocytozoon bienersi</i> Genotypes in a Drinking Source Watershed	Yaqiong Guo, Kerri A. Alderisio, Wenli Yang, Vitaliano Cama, Yaoyu Feng, Lihua Xiao	218–225
Evaluating Gulls as Potential Vehicles of <i>Salmonella enterica</i> Serotype Newport (JJPX01.0061) Contamination of Tomatoes Grown on the Eastern Shore of Virginia	Karen Gruszynski, Steven Pao, Chyer Kim, Denise M. Toney, Kim Wright, Ana Colón, T. Engelmeyer, Seth J. Levine	235–238
Higher Water Temperature and Incubation under Aerobic and Microaerobic Conditions Increase the Recovery and Diversity of <i>Arcobacter</i> spp. from Shellfish	Arturo Levican, Luis Collado, Clara Yustes, Carme Aguilar, Maria José Figueras	385–391
AUTHOR CORRECTION		
The Microbiome of the Red Sea Coral <i>Stylophora pistillata</i> Is Dominated by Tissue-Associated <i>Endozoicomonas</i> Bacteria	Till Bayer, Matthew J. Neave, Areej Alsheikh-Hussain, Manuel Aranda, Lauren K. Yum, Tracy Mincer, Konrad Hughen, Amy Apprill, Christian R. Woolstra	427