

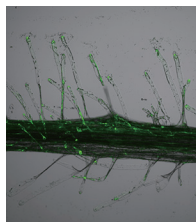


AMERICAN
SOCIETY FOR
MICROBIOLOGY

Applied and Environmental
Microbiology®

CONTENTS • MARCH 2019 • VOLUME 85, NO. 5

COVER IMAGE



Cover photograph: *Bacillus velezensis* SQR9 is a strain widely used as a biofertilizer and biocontrol agent in crop production. As a strong root colonizer, SQR9 forms robust and highly structured biofilms, efficiently promotes plant growth, and suppresses soilborne diseases. The image shows cucumber roots colonized by green fluorescent protein-tagged SQR9 strains by using a confocal laser scanning microscope (CLSM). (See related article at e02116-18.) (Copyright © 2019 American Society for Microbiology. All Rights Reserved.)

SPOTLIGHT

Articles of Significant Interest in This Issue e00075-19

BIODEGRADATION

Biodegradation of the Allelopathic Chemical Pterostilbene by a *Spingobium* sp. Strain from the Peanut Rhizosphere e02154-18

Ri-Qing Yu, Zohre Kurt, Fei He, Jim C. Spain

An Extracytoplasmic Function Sigma Factor Controls Cellulose Utilization by Regulating the Expression of an Outer Membrane Protein in *Cytophaga hutchinsonii* e02606-18

Xia Wang, Weixin Zhang, Hong Zhou, Guanjun Chen, Weifeng Liu

BIOTECHNOLOGY

Homoethanol Production from Glycerol and Gluconate Using Recombinant *Klebsiella oxytoca* Strains e02122-18

Weiyi Tao, Yi Wang, Eric Walters, Hui Lin, Shuang Li, He Huang, Takao Kasuga, Zhiliang Fan

L-Rhamnose Metabolism in *Clostridium beijerinckii* Strain DSM 6423 e02656-18

Mamou Diallo, Andre D. Simons, Hetty van der Wal, Florent Collas, Bwee Houweling-Tan, Servé W. M. Kengen, Ana M. López-Contreras

Extremely Thermoacidophilic *Metallosphaera* Species Mediate Mobilization and Oxidation of Vanadium and Molybdenum Oxides e02805-18

Garrett H. Wheaton, Nicholas P. Vitko, James A. Counts, Jessica A. Dulkis, Igor Podolsky, Arpan Mukherjee, Robert M. Kelly

ENVIRONMENTAL MICROBIOLOGY

***Bacillus velezensis* Wall Teichoic Acids Are Required for Biofilm Formation and Root Colonization** e02116-18

Zhihui Xu, Huihui Zhang, Xinli Sun, Yan Liu, Wuxia Yan, Weibing Xun, Qirong Shen, Ruifu Zhang

Niche Differentiation among Three Closely Related *Competibacteraceae* Clades at a Full-Scale Activated Sludge Wastewater Treatment Plant and Putative Linkages to Process Performance e02301-18

Veronica R. Brand, Laurel D. Crosby, Craig S. Criddle

20 February 2019

- Biogeochemical Regimes in Shallow Aquifers Reflect the Metabolic Coupling of the Elements Nitrogen, Sulfur, and Carbon** e02346-18
Carl-Eric Wegner, Michael Gaspar, Patricia Geesink, Martina Herrmann, Manja Marz, Kirsten Küsel
- Molecular Identification of Enteroviruses from Cattle and Goat Feces and Environment in Thailand** e02420-18
Nicharee Income, Nathamon Kosoltanapiwat, Sarawut Taksinoros, Pornsawan Leungwutiwong, Pannamas Maneekan, Irwin Fernandez Chavez
- ENZYMOLGY AND PROTEIN ENGINEERING**
- Activity and Thermostability of GH5 Endoglucanase Chimeras from Mesophilic and Thermophilic Parents** e02079-18
Fei Zheng, Josh V. Vermaas, Jie Zheng, Yuan Wang, Tao Tu, Xiaoyu Wang, Xiangming Xie, Bin Yao, Gregg T. Beckham, Huiying Luo
- Structure-Based Engineering of Amidase from *Pantoea* sp. for Efficient 2-Chloronicotinic Acid Biosynthesis** e02471-18
Xiao-Ling Tang, Jian-Qiang Jin, Zhe-Ming Wu, Li-Qun Jin, Ren-Chao Zheng, Yu-Guo Zheng
- pH-Dependent Relationship between Catalytic Activity and Hydrogen Peroxide Production Shown via Characterization of a Lytic Polysaccharide Monooxygenase from *Gloeophyllum trabeum*** e02612-18
Olav A. Hegnar, Dejan M. Petrovic, Bastien Bissaro, Gry Alfredsen, Anikó Várnai, Vincent G. H. Eijsink
- GENETICS AND MOLECULAR BIOLOGY**
- Glycosyltransferase-Mediated Biofilm Matrix Dynamics and Virulence of *Streptococcus mutans*** e02247-18
Katherine Rainey, Suzanne M. Michalek, Zezhang T. Wen, Hui Wu
- LysPBC2, a Novel Endolysin Harboring a *Bacillus cereus* Spore Binding Domain** e02462-18
Minsuk Kong, Hongjun Na, Nam-Chul Ha, Sangryeol Ryu
- Experimental Evolution of *Escherichia coli* K-12 in the Presence of Proton Motive Force (PMF) Uncoupler Carbonyl Cyanide *m*-Chlorophenylhydrazone Selects for Mutations Affecting PMF-Driven Drug Efflux Pumps** e02792-18
Jessie M. Griffith, Preston J. Basting, Katarina M. Bischof, Erintrude P. Wrona, Karina S. Kunka, Anna C. Tancredi, Jeremy P. Moore, Miriam R. L. Hyman, Joan L. Slonczewski
- INVERTEBRATE MICROBIOLOGY**
- Contrasting Patterns of Virus Protection and Functional Incompatibility Genes in Two Conspecific *Wolbachia* Strains from *Drosophila pandora*** e02290-18
Angelique K. Asselin, Simon Villegas-Ospina, Ary A. Hoffmann, Jeremy C. Brownlie, Karyn N. Johnson
- METHODS**
- Towards Quantitative Microbiome Community Profiling Using Internal Standards** e02634-18
Yajuan Lin, Scott Gifford, Hugh Ducklow, Oscar Schofield, Nicolas Cassar

PUBLIC AND ENVIRONMENTAL HEALTH MICROBIOLOGY

Survival of *Escherichia coli* in Manure-Amended Soils Is Affected by Spatiotemporal, Agricultural, and Weather Factors in the Mid-Atlantic United States e02392-18

Manan Sharma, Patricia D. Millner, Fawzy Hashem, Bryan T. Vinyard, Cheryl L. East, Eric T. Handy, Kathryn White, Richard Stonebraker, Corrie P. Cotton

Campylobacter coli* Clade 3 Isolates Induce Rapid Cell Death *In Vitro e02993-18

Cecilia Johansson, Anna Nilsson, René Kaden, Hilpi Rautelin

ERRATUM

Erratum for Krishnavajhala et al., "Vector Competence of Geographical Populations of *Ornithodoros turicata* for the Tick-Borne Relapsing Fever Spirochete *Borrelia turicatae*" e03091-18

Aparna Krishnavajhala, Brittany A. Armstrong, Job E. Lopez