

The Official Publication of the Association of Microbiologists of India



Indian
Journal
of
Microbiology

CONTENTS

Editorial

1. Microbes, Antimicrobials and Resistance: The Battle Goes On
V.C. Kalia

Review Article

2. Epidemic Status of Swine Influenza Virus in China
W. Kong · J. Ye · S. Guan · J. Liu · J. Pu

Original Articles

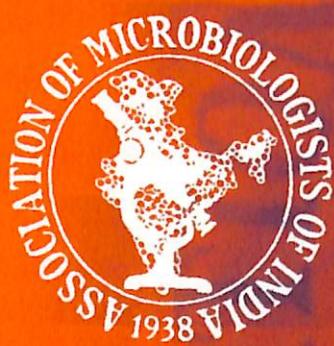
3. The Primary Research on the Gut Microbes in KKAY Mice
Y. Li · L. Han · M. Xu · J. Guo · M. Feng · X. Wang 12
4. Cloning and Characterizing the Thermophilic and Detergent Stable Cellulase CelMytB from *Saccharophagus* sp. Myt-1
A. Sakatoku · D. Tanaka · H. Kamachi · S. Nakamura 20
5. *Muscodor albus* MOW12 an Endophyte of *Piper nigrum* L. (Piperaceae) Collected from North East India Produces Volatile Antimicrobials
D. Banerjee · A. Pandey · M. Jana · G. Strobel 27
6. Identification and Characterization of an Invasion Antigen B Gene from the Oral Pathogen *Campylobacter rectus*
M.J. LaGier · D.S. Threadgill 33
7. Identification of Genes Differentially Expressed Between Ochratoxin-Producing and Non-Producing Strains of *Aspergillus westerdijkiae*
D. Sartori · F.P. Massi · L.S. Ferranti · M.H.P. Fungaro 41
8. Prokaryotic Expression, Identification and Bioinformatics Analysis of the *Mycobacterium tuberculosis* Rv3807c Gene Encoding the Putative Enzyme Committed to Decaprenylphosphoryl-D-arabinose Synthesis
L. Cai · X. Zhao · T. Jiang · J. Qiu · L. Owusu · Y. Ma · B. Wang · Y. Xin 46
9. Physiological and Immunological Regulations in *Caenorhabditis elegans* Infected with *Salmonella enterica* serovar Typhi
B.S. Sivamaruthi · K. Balamurugan 52
10. Cloning of Catechol 2,3-Dioxygenase Gene and Construction of a Stable Genetically Engineered Strain for Degrading Crude Oil
Y. Xie · F. Yu · Q. Wang · X. Gu · W. Chen 59
11. Influence of Long Term Irrigation with Pulp and Paper Mill Effluent on the Bacterial Community Structure and Catabolic Function in Soil
B.M. Tripathi · P. Kumari · K.P. Weber · A.K. Saxena · D.K. Arora · R. Kaushik 65
12. Isolation an Aldehyde Dehydrogenase Gene from Metagenomics Based on Semi-nest Touch-Down PCR
R. Chen · C. Li · X. Pei · Q. Wang · X. Yin · T. Xie 74
13. Development of Loop-Mediated Isothermal Amplification (LAMP) for Universal Detection of Enteroviruses
H.-B. Zhao · G.-Y. Yin · G.-P. Zhao · A.-H. Huang · J.-H. Wang · S.-F. Yang · H.-S. Gao · W.-J. Kang 80
14. Kinetic and Thermodynamic Characterization of Glucoamylase from *Colletotrichum* sp. KCPI
V.S. Prajapati · U.B. Trivedi · K.C. Patel 87

15. *In silico* Structural 3D Modelling of Novel Cry1Ib9 and Cry3A Toxins from Local Isolates of *Bacillus thuringiensis* 94
H.M. Mahadeva Swamy · R. Asokan · R. Mahmood
16. Efficacy and Safety of Linezolid in Treating Gram-Positive Bacterial Infection in the Elderly: A Retrospective Study 104
Z.-Y. Zhou · X.-Q. Zhao · B.-Z. Shan · J. Zhu · X. Zhang · Q.-F. Tian · D.-F. Chen · T.-H. Jia

Short Communications

17. Comparative Analysis of *Aspergillus oryzae* with Normal and Abnormal Color Conidia 108
M. Ye · Y. Lin · W. Huang · J. Wei
18. Diversity Analysis of Bacterial Community from Permafrost Soil of Mo-he in China 111
D. Dan · D. Zhang · W. Liu · C. Lu · T. Zhang
19. Azithromycin Reduces the Production of α -hemolysin and Biofilm Formation in *Staphylococcus aureus* 114
Z. Gui · H. Wang · T. Ding · W. Zhu · X. Zhuang · W. Chu
20. Draft Genome Sequence of the Endophytic Bacterium *Enterobacter* spp. MR1, Isolated from Drought Tolerant Plant (*Butea monosperma*) 118
M.V. Parakhia · R.S. Tomar · B.J. Malaviya · R.M. Dhingani · V.M. Rathod · J.R. Thakkar · B.A. Golakiya
21. Draft Genome Sequence of the Methyl Parathion (Pesticide) Degrading Bacterium *Pseudomonas* spp. MR3 120
M.V. Parakhia · R.S. Tomar · M.R. Vadukia · B.J. Malviya · V.M. Rathod · J.R. Thakkar · K.J. Parmar · R.M. Dhingani · B.A. Golakiya

The Official Publication of the Association of Microbiologists of India



Indian
Journal
of
Microbiology

CONTENTS

Review Articles

1. Advances in Taxonomy of Genus *Phoma*: Polyphyletic Nature and Role of Phenotypic Traits and Molecular Systematics 123
M.K. Rai · V.V. Tiwari · L. Irinyi · G.J. Kövics
2. Microbial Culture Collection (MCC) and International Depositary Authority (IDA) at National Centre for Cell Science, Pune 129
A. Sharma · Y. Shouche

Original Articles

3. Metabolism Dependent Chemotaxis of *Pseudomonas aeruginosa* N1 Towards Anionic Detergent Sodium Dodecyl Sulfate 134
V. Chaturvedi · A. Kumar
4. Lime and Sulphide-Free Dehairing of Animal Skin Using Collagenase-Free Alkaline Protease from *Vibrio metschnikovii* NG155 139
N. George · S. Sondhi · S.K. Soni · N. Gupta
5. Generation and Characterization of a scFv Antibody Against T3SS Needle of *Vibrio parahaemolyticus* 143
R. Wang · S. Fang · S. Xiang · S. Ling · J. Yuan · S. Wang
6. Ecobiotechnological Approach for Exploiting the Abilities of *Bacillus* to Produce Co-polymer of Polyhydroxyalkanoate 151
P. Kumar · M. Singh · S. Mehariya · S.K.S. Patel · J.-K. Lee · V.C. Kalia
7. Characterization of *N*-Acyl-homoserine Lactones (AHLs)-Deficient Clinical Isolates of *Pseudomonas aeruginosa* 158
Z. Shang · H. Wang · S. Zhou · W. Chu
8. The *Pseudomonas aeruginosa* Mannose Sensitive Hamemagglutination Strain (PA-MSHA) Induces a Th1-Polarizing Phenotype by Promoting Human Dendritic Cells Maturation 163
Y. Zhang · H. Wang · Y. Li · K. Chen · J. Ye · X. Liao · Y. Chen · W. Ran
9. Carbon-Mercaptooctadecane/Carboxylated Multi-walled Carbon Nanotubes Composite Based Genosensor for Detection of Bacterial Meningitis 170
S.K. Dash · M. Sharma · S. Khare · A. Kumar
10. Oligotrophy is Helpful for the Isolation of Bioactive Actinomycetes 178
D. Wang · Q. Xue · Y. Ma · X. Wei · J. Chen · F. He
11. Purification and Characterization of Bacteriocin Produced by *Lactobacillus brevis* UN Isolated from Dhulliachar: a Traditional Food Product of North East India 185
N. Gautam · N. Sharma · O.P. Ahlawat
12. Differentiating Indigenous Soybean *Bradyrhizobium* and *Rhizobium* spp. of Indian Soils 190
P.G. Ansari · D.L.N. Rao
13. Synthesis of Silver and Gold Nanoparticles Using Cashew Nut Shell Liquid and Its Antibacterial Activity Against Fish Pathogens 196
P. Velmurugan · M. Iydroose · S.-M. Lee · M. Cho · J.-H. Park · V. Balachandar · B.-T. Oh
14. Simultaneous Detection of Major Pome Fruit Viruses and a Viroid 203
S. Kumar · L. Singh · R. Ram · A.A. Zaidi · V. Hallan
15. Microarray Multiplex Assay for the Simultaneous Detection and Discrimination of Influenza A and Influenza B Viruses 211
M. Tian · Y. Tian · Y. Li · H. Lu · X. Li · C. Li · F. Xue · N. Jin

16. Study on Correlation of Maedi-Visna Virus (MVV) with Ovine Subclinical Mastitis in Iran R. Asadpour · S. Paktnat · F. Ghassemi · R. Jafari	218
17. Comparison of Culture Methods for Isolation of <i>Salmonella</i> in Yak Fecal Samples H. Yue · B. Zhang · X. Zhu · H. Zhang · C. Tang	223
18. Novel Class 1 Integrons in Multi-drug Resistant Isolates from Eastern China G. Sun · M. Yi · C. Shao · J. Ma · Q. Zhang · S. Shao	227
19. Isolation and Characterization of a Nitrile-Hydrolysing Bacterium <i>Isoptericola variabilis</i> RGT01 G. Kaur · P. Soni · R. Tewari · R. Sharma	232

Short Communication

20. Statistical Optimization of Medium Components for Mass Production of Plant Growth-Promoting Microbial Inoculant <i>Pseudomonas trivialis</i> BIHB 745 (MTCC5336) P. Vyas · P. Rahi · B.S. Chadha · A. Gulati	239
--	-----

Presidential Address

21. President of AMI-2013 R. Lal	242
--	-----

Report

22. 54th Annual Conference of Association of Microbiologists of India (AMI): A Report P. Shukla	244
---	-----

News and Views

23. Biofilms: United We Stand, Divided We Fall J. Kaur · N. Niharika · P. Lata · R. Lal	246
---	-----

The Official Publication of the Association of Microbiologists of India



Indian
Journal
of
Microbiology

CONTENTS

Review Articles

1. Distribution and Evolutionary Impact of *Wolbachia* on Butterfly Hosts 249
R.C. Salunkhe · K.P. Narkhede · Y.S. Shouche
2. Technicalities and Glitches of Terminal Restriction Fragment Length Polymorphism (T-RFLP) 255
O. Prakash · P.K. Pandey · G.J. Kulkarni · K.N. Mahale · Y.S. Shouche

Original Articles

3. Ecobiotechnological Strategy to Enhance Efficiency of Bioconversion of Wastes into Hydrogen and Methane 262
P. Kumar · D.C. Pant · S. Mehariya · R. Sharma · A. Kansal · V.C. Kalia
4. Beneficial Effect of Acetic Acid on the Xylose Utilization and Bacterial Cellulose Production by *Gluconacetobacter xylinus* 268
X.-Y. Yang · C. Huang · H.-J. Guo · L. Xiong · J. Luo · B. Wang · X.-F. Chen · X.-Q. Lin · X.-D. Chen
5. Gene Expressing Difference in Sclerotial Formation of *Morchella conica* 274
L.-J. Chen · H.-M. Chai · W.-M. Chen · X.-Q. Huang · Y.-C. Zhao
6. Cloning, Expression and Characterization of a Lipase Encoding Gene from Human Oral Metagenome 284
A. Preeti · D. Hemalatha · J. Rajendhran · P. Mullany · P. Gunasekaran
7. Comparative Genomic Analysis of Two-Component Signal Transduction Systems in Probiotic *Lactobacillus casei* 293
S. Yu · Y. Peng · W. Chen · Y. Deng · Y. Guo
8. In Vitro Evaluation of Antagonism of Endophytic *Colletotrichum gloeosporioides* Against Potent Fungal Pathogens of *Camellia sinensis* 302
A.J. Rabha · A. Naglot · G.D. Sharma · H.K. Gogoi · V. Veer
9. Isolation and Characterization of the PKAr Gene From a Plant Pathogen, *Curvularia lunata* 310
T. Liu · B.C. Ma · J.M. Hou · Y.H. Zuo
10. Characterization and Fungal Inhibition Activity of Siderophore from Wheat Rhizosphere Associated *Acinetobacter calcoaceticus* Strain HIRFA32 315
D.V. Maindad · V.M. Kasture · H. Chaudhari · D.D. Dhavale · B.A. Chopade · D.P. Sachdev
11. Efficacy of Cryptdin-2 as an Adjunct to Antibiotics from Various Generations Against *Salmonella* 323
A.P. Singh · V. Prabha · P. Rishi
12. Production and Characterization of Protein Encapsulated Silver Nanoparticles by Marine Isolate *Streptomyces parvulus* SSNP11 329
R.S. Prakasham · B.S. Kumar · Y.S. Kumar · K.P. Kumar
13. Degradation of Di- Through Hepta-Chlorobiphenyls in Clophen Oil Using Microorganisms Isolated from Long Term PCBs Contaminated Soil 337
J.K. Sharma · R.K. Gautam · R.R. Misra · S.M. Kashyap · S.K. Singh · A.A. Juwarkar
14. Morphological and Molecular Differentiation of *Sporidiobolus johnsonii* ATCC 20490 and Its Coenzyme Q₁₀ Overproducing Mutant Strain UF16 343
P. Ranadive · A. Mehta · Y. Chavan · A. Marx · S. George

Short Communications

15. Electron Microscopy and X-ray Analysis of Cr-Containing Precipitates Synthesized by Newly Isolated Actinobacterium, *Flexivirga alba* ST13^T 358
T. Sugiyama · T. Sakaguchi
16. Comparison of Antimicrobial Activity of Essential Oils, Plant Extracts and Methylparaben in Cosmetic Emulsions: 2 Months Study 361
A. Herman
17. Comparative Study of Antibiofilm Activity of Copper Oxide and Iron Oxide Nanoparticles Against Multidrug Resistant Biofilm Forming Uropathogens 365
M. Agarwala · B. Choudhury · R.N.S. Yadav

The Official Publication of the Association of Microbiologists of India



Indian
Journal
of
Microbiology

CONTENTS

Review Article

1. Synthetic Biology in Action: Developing a Drug Against MDR-TB 369
A. Saxena · U. Mukherjee · R. Kumari · P. Singh · R. Lal

Original Articles

2. Antibiofilm Activity of Biosurfactant Producing Coral Associated Bacteria Isolated from Gulf of Mannar 376
A.R. Padmavathi · S.K. Pandian
3. Characterization and Detection of Endolysin Gene from Three *Acinetobacter baumannii* Bacteriophages Isolated from Sewage Water 383
T. Kitti · R. Thummeepak · A. Thanwisai · K. Boonyodying · D. Kunthalert · P. Ritvirool · S. Sitthisak
4. Epidemiological Evaluation of Blood Culture Patterns among Neonates Receiving Vancomycin 389
S.Y. Yakub · J.E. Constance · C. Stockmann · M. Linakis · S.C. Campbell · C.M.T. Sherwin · E.K. Korgenski · A. Balch · M.G. Spigarelli
5. Enhancing Nutritional Quality of Silage by Fermentation with *Lactobacillus plantarum* 396
M.V. Arasu · M.-W. Jung · D.H. Kim · S. Ilavenil · M. Jane · H.S. Park · N.A. Al-Dhabi · B.T. Jeon · K.C. Choi
6. Preferential Promotion of *Lycopersicon esculentum* (Tomato) Growth by Plant Growth Promoting Bacteria Associated with Tomato 403
P.R. Vaikuntapu · S. Dutta · R.B. Samudrala · V.R.V.N. Rao · S. Kalam · A.R. Podile
7. Plant Growth Promoting Bacteria from Cow Dung Based Biodynamic Preparations 413
T.K. Radha · D.L.N. Rao
8. Survey of Plant Drought-Resistance Promoting Bacteria from *Populus euphratica* Tree Living in Arid Area 419
S. Wang · L. Ouyang · X. Ju · L. Zhang · Q. Zhang · Y. Li
9. Phosphate Solubilizing *Bacillus megaterium* mj1212 Regulates Endogenous Plant Carbohydrates and Amino Acids Contents to Promote Mustard Plant Growth 427
S.-M. Kang · R. Radhakrishnan · Y.-H. You · G.-J. Joo · I.-J. Lee · K.-E. Lee · J.-H. Kim
10. Detection of Ammonia-Oxidizing Archaea in Fish Processing Effluent Treatment Plants 434
A. Devivaraprasad Reddy · G. Subrahmanyam · G. Shivani Kallappa · I. Karunasagar · I. Karunasagar
11. Development of a Rapid Method for Identifying Carryover Contamination of Positive Control DNA, Using a Chimeric Positive Control and Restriction Enzyme for the Diagnosis of White Spot Syndrome Virus by Nested PCR 439
H.J. Kim · S.R. Kwon
12. Comparison of Bacterial Biodiversity and Enzyme Production in Three Hypersaline Lakes; Urmia, Howz-Soltan and Aran-Bidgol 444
H. Babavalian · M.A. Amoozegar · S. Zahraei · R. Rohban · F. Shakeri · M.M. Moghaddam
13. Homology Modeling and Comparative Profiling of Superoxide Dismutase Among Extremophiles: *Exiguobacterium* as a Model Organism 450
R. Pathak · P. Narang · M. Chandra · R. Kumar · P.K. Sharma · H.K. Gautam

14. Enhanced Glucosamine Production with *Actinomucor elegans* Based on Stimulating Factor of Methanol 459
S. Wang · P. Li · J. Su · R. Liang · X. Wu
15. Hydrolyzing Proficiency of Keratinases in Feather Degradation 466
S. Gupta · R. Singh

Short Communications

16. Draft Genome Sequence of an Extreme Haloarchaeon 3A1-DGR Isolated from a Saltern Crystallizer of the Little Rann of Kutch, India 471
K.K. Pal · R. Dey · M. Thomas · S. Ghorai · D. Sherathia · S. Vanpariya · R. Rupapara · P. Rawal · M. Mandaliya · B. Sukhadia · A.K. Saxena
17. Draft Genome Sequence of a Multidrug-Resistant *bla_{NDM-1}*-Producing *Acinetobacter soli* Isolate in China 474
Y. Chen · Z. Yan · M. Wang · X. Zheng · Y. Lu · S. Lin
18. Enhancement of Biocontrol Activities and Cyclic Lipopeptides Production by Chemical Mutagenesis of *Bacillus subtilis* XF-1, a Biocontrol Agent of *Plasmodiophora brassicae* and *Fusarium solani* 476
X.-Y. Li · J.-J. Yang · Z.-C. Mao · H.-H. Ho · Y.-X. Wu · Y.-Q. He

Scientific Correspondence

19. Draft Genome Sequences of *Yersinia pestis* Strains from the 1994 Plague Epidemic of Surat and 2002 Shimla Outbreak in India 480
K.N. Mahale · P.S. Paranjape · N.P. Marathe · D.P. Dhotre · S. Chowdhury · S.A. Shetty · A. Sharma · K. Sharma · U. Tuteja · H.V. Batra · Y.S. Shouche
20. Microbes: Mini Iron Factories 483
K.B. Joshi