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2. **Experience :**
* Lecturer, Department of Botany, St. Anthony`s College, Shillong (Feb 1989- May 1995)
* Head, Departments of Biotechnology, St. Anthony`s College, Shillong (June 1995-May 2003)
* Head, Department of Biochemistry, St. Anthony`s College, Shillong (Feb 1998-May 2003)
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**Publications:**

**Research Publications: (155)**

1. Paul, S., Bhagobaty, R.K., Nihalani, M.C. and **Joshi, S.**R. ( 2023) Screening of biohydrogen producing endophytic fungi from biodiesel plants. **CLEAN - Soil, Air, Water**. DOI: 0.1002/clen.202300150
2. Chettri, U., Nongkhlaw, M. and **Joshi, S.R.** (2023) Molecular evidence for the occurrence of heavy metal and antibiotic resistance genes among predominant metal tolerant *Pseudomonas* sp. and *Serratia* sp. prevalent in Teesta River. **Current Microbiology**. DOI: 10.1007/s00284-023-03334-9
3. Akoijam, N. and **Joshi, S.R.** (2023) Bioprospecting acid- and arsenic-tolerant plant growth-promoting rhizobacteria for mitigation of arsenic toxicity in acidic agricultural soils. **Archives of Microbiology**. DOI : 10.1007/s00203-023-03567-z.
4. Bhattacharjee, K., Barua, K.S., Chrungoo, N.K. and **Joshi, S.R.**(2023) Characterization of biomineralizing and plant growth-promoting attributes of lithobiontic bacteria. **Current Microbiology**. DOI :10.1007/s00284-022-03176-x
5. Bhatia, R., Singh, S., Maurya, R., Bhadada, S.K., Bishnoi, M., Chopra, K., **Joshi, S.R.,** Kondepudi, K.K. (2022) *In vitro* characterization of lactic acid bacterial strains isolated from fermented foods with anti‑inflammatory and dipeptidyl peptidase‑IV inhibition potential. **Brazilian Journal of Microbiology.** https://doi.org/10.1007/s42770-022-00872-5
6. 148. Chettri, U., Chakrabarty, T.K. and **Joshi, S.R.** (2022) Pollution index assessment of surface water and sediment quality with reference to heavy metals in Teesta River in Eastern Himalayan range, India. **Environmental Nanotechnology, Monitoring & Management**. 18 (2022) 100742. <https://doi.org/10.1016/j.enmm.2022.100742>
7. Barooah, M., **Joshi, S.R.** and Bahar, B. (2022) Editorial: Genomics and Metabolomics of Microbes in Fermented Food. **Frontiers in Microbiology**. 13:892726. doi: 10.3389/ fmicb.2022.892726
8. Chettri, U. and **Joshi, S.R**. (2022)  A first calibration of culturable bacterial diversity and their dual resistance to heavy metals and antibiotics along altitudinal zonation of the Teesta River. **Archives of Microbiology**. 204:241. https://doi.org/10.1007/s00203-022-02858-1.
9. Singh, R.I., Chettri, U., Maity, P., Ghosh, A.K., **Joshi, S.R.** and Mitra, S. (2022). Modulated Antimicrobial Activity and Drug-Protein Interaction Ability of Zinc Oxide and Cadmium Sulfide Nanoparticles: Effect of Doping with Few First-Row Transition Metals. **Journal of Cluster Science**. https://doi.org/10.1007/s10876-022-02257-y.(0123456789
10. Das, P., Behera, M. D., Barik, S. K., Mudi, S., Jagadish, B., Sarkar, S., **Joshi, S.R.,** Adhikari, D., Behera, S.K., Sarma, K., Srivastava, P. K. and Chauhan, P.S. (2021) Shifting cultivation induced Burn area Dynamics using Ensemble Approach in Northeast India. **Trees, Forests and People**. DOI: https://doi.org/10.1016/j.tfp.2021.100183.
11. Shylla, L., Barik, S.K. and **Joshi, S.R.** (2021) Application of Native *Bacillus* sp. for Sustainable Jhum Agro-ecosystem. **Proceedings of the National Academy of Sciences, India Section B: Biological Sciences.** DOI 10.1007/s40011-021-01263-w.
12. Ka-Ot, A.L and **Joshi. S.R.** (2021) Application of acid and heavy metal resistant bacteria from rat-hole coal mines in bioremediation strategy**. Journal of Basic Microbiology**. DOI:10.1002/jobm.202100241.
13. Bhattacharjee, K., Chrungoo, N.K. and **Joshi, S.R.** (2021) Cryopreservation Design for Bacterial Cell: a Non-Conventional Gizmatic Approach. **Proceedings National Academy of Sciences, India, Biological Sciences.** doi.org/10.1007/s40011-021-01266-7.
14. Akoijam, N., Dutta, S. and Joshi, S.R. (2021) Biomineralization Potential of a ureolytic fungus isolated from Mawsmai cave in Meghalaya. ***The NEHU Journal***, XIX: 31-48.
15. Shylla, L., Barik, S.K., Behera, M.D., Singh, H., Adhikari, D.,Upadhyay, A., Thapa, N., Sarma, K. and Joshi, S.R. (2021) Impact of heavy metals on water quality and indigenous *Bacillus* spp. prevalent in rat‐hole coal mines. **3Biotech**. 11:253. https://doi.org/10.1007/s13205-021-02808-6.
16. Shylla L., Barik, S.K. and **Joshi, S.R.** (2021) Characterization and bioremediation potential of native heavy-metal tolerant bacteria isolated from rat-hole coal mine environment. **Archives of Microbiology.** 203: 2379-2392.DOI: 10.1007/s00203-021-02218-5.
17. Shylla, L., Barik, S.K. and **Joshi, S.R.** (2020*)* Impact assessment of heavy metal contamination on water quality of underground and open-cast coal mines. **The NEHU Journal**. XVIII (2): 58-72.
18. Paul, S., Bhagobaty, R.K., Nihalani, M.C. and **Joshi, S.R.** (2020) Characterization of oleaginous endophytic fungi of biodiesel plants as potential biofuel minifactories. **Biomass and Bioenergy.** 142: 105750. https://doi.org/10.1016/j.biombioe.2020.105750.
19. Dkhar, L., Sawkmie, M., Ka-Ot, A.L., **Joshi, S.R.,** Kaminsky, W. and Rao, K.M. (2020) Cp and indenyl ruthenium complexes containing dithione derivatives: Synthesis, antibacterial and antifungal study. **Journal of Organometallic Chemistry.** 923: 121418. https://doi.org/10.1016/j.jorganchem.2020.121418.
20. Pasha, S.V., Behera, M.D., Mahawar, S.K., Barik, S.K. and **Joshi, S.R.** (2020)  Assessment of shifting cultivation fallows in Northeastern India using Landsat imageries. **Tropical Ecology**. https://doi.org/10.1007/s42965-020-00062-0
21. Borthakur M, Gurung AB, Bhattacharjee A and **Joshi SR** (2020) Analysis of the bioactive metabolites of the endangered Mexican lost fungi *Campanophyllum*- a report from India. **Mycobiology**, DOI: 10.1080/12298093.2020.1723388.
22. Ingti B, Upadhyay S, Hazarika M,Khyriem AB, Paul D, Bhattacharya P, **Joshi SR**, Bora D, Dhar(Chanda) D and Bhattacharjee A (2020) Distribution of carbapenem resistant *Acinetobacter baumannii* with blaADC-30 and induction of ADC-30 in response to beta-lactam antibiotics. **Research in Microbiology**. DOI: 10.1016/j.resmic.2020.01.002.
23. Dutta A, Rahman N, Khongriah W, Nongrum R, **Joshi SR** and Nongkhlaw R (2019) l-Glutamine supported on core–shell silica iron oxide nanoparticles: A highly efficient organocatalyst for synthesis of spirooxoindoles. **Chemistry Select.** *4*, 12399 – 12408. https://doi.org/10.1002/slct.201902279.
24. Baul TSS, Nongsiej K, Ka-Ot AL, **Joshi SR**, Rocha BGM, daSilva MFCG ( 2020) Synthesis, crystal structures, magnetic properties and antimicrobial screening of octahedral nickel(II) complexes with substituted quinolin-8-olates and pyridine ligands. **Journal of Molecular Structure.** 1200: 127106. doi.org/10.1016/j.molstruc.2019.127106
25. Paul S, Bhagobaty RK, Nihalani MC and **Joshi SR** (2019) Are endophytic fungi a feasible option as biofuel nanofactories? **International Journal of Scientific Research and Review.** 7(5): 1112-1118.
26. Nongkhlaw M and **Joshi SR** (2019) Molecular insight into the expression of metal transporter genes in *Chryseobacterium* sp. PMSZPI isolated from uranium deposit. **PLoS ONE** 14(5): e0216995. https://doi.org/10.1371/journal. pone.0216995
27. Baul TSB, Nongsiej K, Ka-ot AL, **Joshi SR**, Leon IR and Hopfi H (2019) Tweaking the affinity of aryl‐substituted diazosalicylato‐ and pyridine ligands towards Zn (II) and its neighbors in the periodic system of the elements, Cu (II) and Cd (II), and their antimicrobial activity. **Applied Organometallic Chemistry.** e4905. https://doi.org/10.1002/aoc.4905
28. 126. Gurung AB, Pamay P, Tripathy D, Biswas K, Chatterjee A, **Joshi SR** and Bhattacharjee A (2019) Bioprospection of anti‐inflammatory phytochemicals suggests rutaecarpine and quinine as promising 15‐lipoxygenase inhibitors. **Journal of Cellular Biochemistry.** DOI: 10.1002/jcb.28634

#  Biswas K, Sharma P and Joshi SR (2019) Co-occurrence of antibiotic resistance and virulence determinants in enterococci isolated from traditionally fermented fish products. Journal of Global Antimicrobial Resistance. 17: 79-83. DOI https://doi.org/10.1016/j.jgar.2018.11.012

1. **Joshi SR**, Nongbri EL and Biswas K (2018) Incidence of virulence determinants and antibiotic resistance in *Enterococcus* species of dairy origin. **Newsletter-Probiotic Association of India** , Vol 15: 9-10

# Bhattacherjee D, Sheet SK, Khatua S, Biswas K, Joshi SR, Myrboh B (2018) A reusable magnetic nickel nanoparticle based catalyst for the aqueous synthesis of diverse heterocycles and their evaluation as potential anti-bacterial agent. Bioorganic & Medicinal Chemistry, 26: 5018-28. https://doi.org/10.1016/j.bmc.2018.08.033

# Banerjee S, Joshi SR, Mandal T and Halder G ( 2018) Application of zirconium caged activated biochar alginate beads towards deionization of Cr(VI) laden water in a fixed bed column reactor. Journal of Environmental Chemical Engineering 6(4). 4018-4029 . DOI: 10.1016/j.jece.2018.06.011

1. Baul, TS, Nongsiej K, Biswas K, **Joshi SR** and Hopfi H( 2018) Pyridine aided progression from amorphous to crystalline bis([5-(aryl)-1-diazenyl]quinolin-8-olato)zinc(II) compounds − Solution and solid-state structural characterization, nanoparticle formation and antibacterial activity. **Inorganica Chimica Acta**. DOI: 10.1016/j.ica.2018.06.049
2. Upadhyay S, Khyriem AB, Bhattacharya P, Bhattacharjee A, **Joshi SR** (2018). High-level aminoglycoside resistance in *Acinetobacter baumannii* recovered from intensive care unit patients in Northeastern India. **Indian Journal of Medical Microbiology**. 36: 43-48
3. Paul Susmita, Bhagobaty RK, Nihalani MC and **Joshi SR** ( 2018) Diversity and lipid content analysis of oleaginous endophytic fungi associated with biodiesel plants. **Sydowia :** 70: 27-35**.** DOI 10.12905/0380.sydowia70-2018-0027
4. Paul Susmita, Bhagobaty RK, Nihalani MC and **Joshi SR** ( 2017) Prospective oleaginous endophytic fungi isolated from biodiesel plants: An assessment of diversity and lipid content. **Kavaka.** **49: 15-22**
5. Sonu VK, Rajkumar I, Bhattacharjee K, **Joshi SR** and Mitra S (2018) Interaction of caffeine and sulfadiazine with Lysozyme adsorbed at colloidal metal nanoparticle interface: Influence on drug transport ability and antibacterial activity. **Journal of Biomolecular Structure and Dynamics**. https://doi.org/ 10.1080/ 07391102.2018.1426497
6. BhattacharjeeK, Palepu N R, Rao KM and **Joshi SR** (2017) Precursor-directed combinatorial biosynthesis of cephalosporin analogue by thiophene derivative utilizing endolithic bacterium *Streptomyces* sp. AL51**. 3Biotech,** DOI: 10.1007/s13205-017-1051-8
7. Kalita Debajit and **Joshi SR** (2017) Study on bioremediation of Lead by exopolysaccharide producing metallophilic bacteria isolated from extreme habitat. **Biotechnology Reports. 16: 48-57.** https://doi.org/10.1016/j.btre.2017.11.003
8. Bhattacharjee K, Kumar S, Palepu NR, Patra PK, Rao KM and **Joshi SR** (2017) Structure elucidation and *in-silico* docking studies of a novel furopyrimidine antibiotics synthesized by endolithic bacterium *Actinomadura* sp. AL2. **World Journal of Microbiology and Biotechnology**. DOI: 10.1007/s11274-017-2343-1.
9. Biswas K, Upadhayay S, Rapsang GF and **Joshi SR** (2017) Antibacterial and Synergistic Activity Against β-Lactamase-Producing Nosocomial Bacteria by Bacteriocin of LAB Isolated From Lesser Known Traditionally Fermented Products of India. **HAYATI Journal of Biosciences**. **24: 87-95.** https://doi.org/10.1016/j.hjb.2017.08.008
10. Das AR, Saha AK, **Joshi SR** and Das P (2017) Wild edible macrofungi consumed by ethnic tribes of Tripura in Northeast India with special reference to antibacterial activity of *Pleurotus djamor* (Rumph. ex Fr.) Boedijn. **International Food Research Journal 24(2): 834-838**
11. Ojha A, Tak N, Rathi S, Chouhan B, Rao SR, **Joshi SR**, Barik SK, Sprent JS, James EK, Gehlot HS (2017). Molecular characterization of novel *Bradyrhizobium* strains nodulating *Eriosema chinense* and *Flemingia vestita*, important unexplored native legumes of the sub- Himalayan region (Meghalaya) of India. **Systematic and Applied Microbiology. 40: 334-344**. http://dx.doi.org/10.1016/j.syapm.2017.06.003
12. Borthakur M, Gogoi J and **Joshi SR** ( 2017) Macro and microfungi mediated synthesis of Silver nanoparticles and its applications. **ADBU-Journal of Engineering Technology**. **6(1):** 00610605 (09 PP)
13. Borthakur M and **Joshi SR** (2017) Pigskin poison earthball mushroom of
Meghalaya: An identification paradox. **The NEHU Journal.** ***XIII(1): 65-78.***
14. Soumya Banerjee, Augustine Lamin Ka-ot, **S. R. Joshi**, Tamal Mandal and Gopinath Halder (2016) Optimization of Fe2+Removal from Coal Mine Wastewater using Activated Biochar of *Colocasia esculenta*. **Water Environment Research. 89 (2016)**
15. **Aishiki Banerjee, Donald A. Bareh and S.R. Joshi ( 2017)** Native microorganisms as potent bioinoculants for plant growth promotion in shifting agriculture (*Jhum*)systems. *Journal of Soil Science and Plant Nutrition,* 17 (1), 127-140. http://dx.doi.org/10.4067/S0718-95162017005000010
16. Das AR, Borthakur M, Saha AK, **Joshi SR** and Das P (2017) Molecular Characterization and Antioxidant Potential of Three Wild Culinary-Medicinal Mushrooms from Tripura, Northeast India**. International Journal of Medicinal Mushrooms,** 19(1): 55–63
17. Nath A and **Joshi SR** ( 2017) Anti-candidal efficacy of endophytic fungi isolated from tropical  ethnoveterinary plant**. Revista de Biología Tropical.** 64(4):1337-1347.
18. Ka-ot AL, Banerjee S, Haldar G and **Joshi SR** ( 2016). Acid and heavy metal tolerant *Bacillus* spp. from rat-hole coal mines of Meghalaya, India. **Proceedings of National Academy of Sciences. Section B: Biological Sciences***.* **88(3): 1187-1198** DOI :10. 1007/s40011-017-0856-x
19. Upadhyay S, Hussain A, Ingti B, Laskar MA, Choudhury MD, Bhattacharjee A and
 **Joshi SR** (2016) Detection of a new class C beta-lactamase CM-139 in *Klebsiella pneumoniae* of food origin from India. **Journal of Global Antimicrobial Resistance**. DOI: 10.1016/j.jgar.2016.11.002.
20. Nongkhlaw FMW and **Joshi SR** (2017) Microscopic study on colonization and antimicrobial property of endophytic bacteria associated with ethnomedicinal plants of Meghalaya. **Journal of Microscopy and Ultrastructure. 5: 132-139.** DOI: 10.1016/j.jmau.2016.09.002
21. Banerjee S, **Joshi SR**, Mandal T and Halder G (2017) Insight into Cr6þ reduction efficiency of *Rhodococcus erythropolis* isolated from coalmine waste water. **Chemosphere**. 167 :269- 281**.**

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| --- | --- |
| 1. Swer P, **Joshi SR** and Acharya C ( 2016) Cesium and strontium tolerant *Arthrobacter* sp. strain KMSZP6 isolated from a pristine uranium ore deposit. **AMB Express**.6:69DOI: 10.1186/s13568-016-0247-3.
2. Bhattacharjee K and **Joshi SR** (2016) A selective medium for recovery and enumeration of endolithic bacteria. **Journal of Microbiological Methods**. **129: 44-54** DOI:10.1016/j.mimet.2016.07.026.
 |  |
| 1. empty Dey J, Ray D, Biswas K, Aswal VK, **Joshi SR**, Joachim Kohlbrecher J, Dey P and Kochi Ismail K (2016) AOT Micelles/Vesicles for Synthesis of Silver Nanoparticles and Micellar Transitions Affected by Nanoparticles. **Chemistry Select:** 1, 2864 – 2871. DOI: 10.1002/slct.201600191.
 |

1. Sangilipandi S, Sutradhar D, Bhattacharjee K , Kaminsky W, **Joshi SR**, Chandra AK, Rao KM (2016) Synthesis, structure, antibacterial studies and DFT calculations of arene ruthenium, Cp\*Rh, Cp\*Ir and tricarbonylrhenium metal complexes containing 2-chloro-3-(3-(2-pyridyl) pyrazolyl) quinoxaline ligand. **Inorganica Chimica Acta.** 441: 95–108
2. Banerjee S, Mukherjee S, Ka-ot AL, **Joshi SR**, Mandal T, Halder G (2016) Biosorptive uptake of Fe 2+, Cu2+ and As5+ by activated biochar derived from *Colocasia esculenta*: Isotherm, kinetics, thermodynamics, and cost estimation. **Journal of Advanced Research.** http://dx.doi.org/ 10.1016 /j.jare.2016.06.002
3. Bareh DA, Banerjee A and **Joshi SR** (2015) Microbial dynamics and diversity in foot hills of Eastern Himalayan range: A focus on shifting cultivation. **ENVIS Himalayan Ecology**. 23: 1-8
4. Upadhyay S, **Joshi SR**, Khryiem AB and Bhattacharyya P (2016) Acquired 16s methyl transferase associated high level aminoglycoside resistance in *Acinetobacter baumannii* recovered from ICU patients from a tertiary referral hospital of northeast India. **International Journal of Infectious Diseases**. 45S-46. http://dx.doi.org/10.1016/j.ijid.2016.02.144
5. Nath A and **Joshi SR** (2016) Endophytic fungi from tropical ethnoveterinary plants and their antibacterial efficacy against *Pasteurella multocida* Capsular Type A strain. **Revista de Biología Tropical.** Vol. 64 (2): 733-745.
6. Borthakur M and **Joshi SR** (2016) Micrographical analysis of growth deformities in common pathogens induced by voucher fungi from India. **Journal of Microscopy and Ultrastructure**. 4: 203-210. DOI: 10.1016/j.jmau.2016.04.001.

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| --- | --- |
| 1. Lyngwi NA, Nongkhlaw M, Kalita D and **Joshi SR** (2016) Bioprospecting of Plant Growth Promoting Bacilli and Related Genera Prevalent in Soils of Pristine Sacred Groves: Biochemical and Molecular Approach. **PLoS ONE** 11(4): e0152951. doi:10.1371/ journal.pone.0152951.
 |  |

1. Banerjee S and **Joshi SR** (2016) Culturable bacteria associated with the caves of Meghalaya in India contribute to speleogenesis. **Journal of Caves and Karst Studies :**78(3) 144–157. DOI: 10.4311/2015MB0131.
2. Palepu NR, Premkumar JR, Verma AK, Bhattacharjee K, **Joshi SR**, Forbes S, Mozharivskyj Y, Rao KM (2015) Antibacterial, in vitro antitumor activity and structural studies of rhodium and iridium complexes featuring the two positional isomers of pyridine carbaldehyde picolinic hydrazone ligand. **Arabian Journal of Chemistry**. http://dx.doi.org/10.1016/j.arabjc.2015.10.011
3. Upadhyay S, Mustafa M, **Joshi SR** (2016) Naturally evolving extended spectrum cephalosporin resistance in soil borne isolates of Enterobacteriaceae. **National Academy Science Letters**.39. 181-184. DOI:101007/s40009-016-0463-z.
4. Khaund P and **Joshi SR** (2016) *Lentinula edodes* based GIS mapping, biometabolites and antiinflamatory activity of wild edible mushrooms from tropical ‘sacred grove’ forests ofMeghalaya, India. **Revista de Biología Tropical.** Vol. 64 (1): 247-257.
5. Upadhyay S, Hussain A, Mishra S, Maurya AP, Bhattacharjee A and **Joshi SR** (2015) Genetic environment of plasmid mediated CTX-M-15 extended spectrum beta- lactamases from clinical and food borne bacteria in north-eastern India**. PLoS ONE** 10(9): e0138056. doi:10.1371/journal. pone.0138056
6. Nongkhlaw FMW and **Joshi SR** (2016) Horizontal gene transfer of the non-ribosomal peptide synthetase gene among endophytic and epiphytic bacteria associated with ethnomedicinal plants. **Current Microbiology**. **72: 1-11**. doi:10.1007/s00284-015-0910-y.
7. Banerjee S and **Joshi SR** (2016) Mineralogical footprints of bacterial biofilms associated with Labit cave, a part of the longest cave system in India. **Geomicrobiolgy Journal** 33(8): 699–708. DOI: 10.1080/01490451.2015.1083060
8. Das, AR, Borthakur M, Saha AK, **Joshi SR** and Das P (2015) Growth of mycelial biomass and fruit body cultivation of *Lentinus squarrosulus* collected from home garden of Tripura in Northeast India. **Journal of Applied Biology & Biotechnology**. **03(04):** 17-19.
9. Lyngwi, NA and **Joshi SR** (2015) ‘Traditional Sacred Groves’, an ethnic strategy for conservation of microbial diversity. **Indian Journal of Traditional Knowledge. 14(3)**: 474-480.
10. Upadhyay, S and **Joshi SR** ( 2015) Carriage of multidrug resistant integrin gene cassette arrays within environment and food isolates in a high altitude city of northeast India. **International Journal of Antimicrobial Agents**. **45(suppl. 2)**: S84-S85**.**
11. Palepu NR, Nongbri SL, Premkumar JR, Verma AK, Bhattacharjee K, **Joshi SR**, Forbes S, Mozharivskyi Y, Thounaojam R, Aguan K, Rao KM (2015) Synthesis and evaluation of new salicylaldehyde-2- picolinylhydrazone Schiff base compounds of Ru(II), Rh(III) and Ir(III) as in vitro antitumor, antibacterial and fluorescence imaging agents. **Journal of Biological Inorganic Chemistry.** 20(4):619-638. DOI: 10.1007/s00775-015-1249-3.
12. **Joshi SR**, Banerjee S., Bhattacharjee [K](https://www.researchgate.net/researcher/60023846_Kaushik_Bhattacharjee),  [Lyngwi NA](https://www.researchgate.net/researcher/2006243182_Nathaniel_A_Lyngwi) , Koijam [K](https://www.researchgate.net/researcher/2006243396_Khedarani_Koijam) , Khaund [P](https://www.researchgate.net/researcher/84800512_P_Khaund) , Dev LS, and Nongkhlaw [FMW](https://www.researchgate.net/researcher/2002141590_Fenella_MW_Nongkhlaw) (2015). Northeast Microbial database: A web based databank of culturable soil microbes from Northeast India. **Current Science**.108(9): 1702-1706
13. Khaund P and **Joshi SR** ( 2014) Functional nutraceutical profiling of wild edible and medicinal mushrooms consumed by ethnic tribes in India. **International Journal of Medicinal Mushrooms 17(2): 187-197**
14. Dey J, Biswas K, Thapa U, **Joshi SR**, Kharbanga I,; Sultana N and , Ismail K ( 2014) Facile synthesis of silver nanoparticles and their synergistic antibacterial activity in combination with commercial antibiotics. **Bulletin of the Chemical Society of Japan** 88, 352–357 | doi:10.1246/bcsj.20140255
15. Upadhyay S and **Joshi SR** (2015) TEM mediated extended spectrum cephalosporin resistance in clinical and environmental isolates: A report from northeast India. **Indian Journal of Medical Research**. **142: 614-617**
16. Nongkhlaw FMW and **Joshi SR** (2014) L-asparaginase and antioxidant activity of endophytic bacteria associated with ethnomedicinal plants. **Indian Journal of Biotechnology**. Vol 14: 59-64
17. Nath A, Pathak J and **Joshi** **SR** (2014) Bioactivity assessment of endophytic fungi associated with *Centella asiatica* and *Murraya koengii.* **Journal of Applied Biology & Biotechnology**. *2(5):**6-11*. DOI: 10.7324JABB.2014.2502
18. Devi LS and **Joshi** **SR** (2014) Ultrastructures of silver nanoparticles biosynthesized using endophytic fungi. **Journal of Microscopy and Ultrastructure***.* 3: 29-37 DOI:10.1016/j.jmau.2014.10.004
19. Devi LS and **Joshi** **SR** (2014) Evaluation of the antimicrobial potency of silver nanoparticles biosynthesized by using an endophytic fungus, *Cryptosporiopsis ericae* PS4. **Journal of Microbiology***.*58(4):667-674. DOI 10.1007/s12275-014-4113-1
20. Nath A and **Joshi** **SR** (2014) Ultrastructural effect on mastitis pathogens by extract of endophytic fungi associated with ethnoveterinary plant, *Hibiscus sabdariffa* L. **Journal of Microscopy and Ultrastructure***.* **3: 38-43 .** DOI: 10.1016/j.jmau.2014.10.001
21. Khaund P and **Joshi** **SR** (2014) DNA barcoding of wild edible mushrooms consumed by the ethnic tribes of India. **Gene**. 550:123–130DOI:http://dx.doi.org/10.1016/j.gene.2014.08.027
22. Khaund P and **Joshi** **SR** (2014) Micromorphological characterization of wild edible mushroom spores using Scanning Electron Microscopy. **National Academy Science Letters.** 37(6):521-527. DOI: 10.1007/s40009-014-0272-1
23. Khaund P and **Joshi** **SR** (2014) Enzymatic profiling of wild edible mushrooms consumed by the ethnic tribes of India. **Journal of Korean Society of Applied Biological Chemistry***.***57(2):** 263−271
24. Banerjee S and **Joshi** **SR** (2014) Ultrastructural analysis of calcite crystal patterns formed by biofilm bacteria associated with cave speleothems. **Journal of Microscopy and Ultrastructure***.* 2: 217-223. DOI: 10.1016/j.jmau.2014.06.001
25. Thokchom S and **Joshi** **SR** (2015) Screening of fibrinolytic enzymes from lactic acid bacterial isolates associated with traditional fermented soybean foods. **Food Science and Biotechnology***.* 23(5): 1601-1604 (2014) DOI :10.1007/s10068-014-0217-y
26. Bhattacharjee K and **Joshi** **SR** (2014) NEMiD: A web-based curated microbial diversity database with Geo-based plotting. **PLoS ONE**. 9(4): e94088. doi:10.1371/journal.pone.0094088.
27. Nongkhlaw FMW and **Joshi** **SR** (2014) Distribution pattern analysis of epiphytic bacteria on ethnomedicinal plant surfaces: A micrographical and molecular approach. **Journal of Microscopy and Ultrastructure**. 2: 34-40. DOI 10.1016/j.jmau.2014.02.003
28. Nongkhlaw FMW and **Joshi** **SR** (2014) Micrographical assessment of antifungal effect of endophytic bacteria. **Proceedings of National Academy of Sciences. Section B: Biological Sciences***.* DOI: 10.1007/s40011-014-0321-z
29. Nath A and **Joshi** **SR** (2013) Bioactivity assessment of endophytic fungi associated with the ethnomedicinal plant *Potentilla fulgens.* **World Journal of Pharmaceutical Research***.* 2(6): 2596-2607
30. Rapsang GF and **Joshi** **SR** (2015) Molecular and probiotic functional characterization of *Lactobacillus* spp. associated with traditionally fermented fish, Tungtap of Meghalaya in Northeast India. **Proceedings of National Academy of Sciences. Section B: Biological Sciences***.* **85(4): 923-933** DOI 10.1007/s40011-013-0234-2.
31. Koijam K and **Joshi** **SR** (2014) Exopolysaccharide production by a lactic acid bacteria, *Leuconostoc lactis* isolated from ethnically fermented beverage. **National Academy Science Letters***.* 37(1):59–64 DOI 10.1007/s40009-013-0203-6
32. Sarma B, Acharya C and **Joshi** **SR** (2013) Characterization of metal tolerant *Serratia* spp. isolates from sediments of uranium ore deposit of Domiasiat in Northeast India. **Proceedings of National Academy of Sciences. Section B: Biological Sciences***.* 86(2) 253-260.DOI: 10.1007/s40011-013-0236-0
33. Sarma B, Acharya C and **Joshi** **SR** (2013)Plant growth promoting and metal bioadsorption activity of metal tolerant *Pseudomonas aeruginosa* isolate characterized from uranium ore deposit. **Proceedings of National Academy of Sciences. Section B: Biological Sciences***.*DOI 10.1007/s40011-012-0136-8.
34. Khaund P and **Joshi** **SR** ( 2013) [Wild edible macrofungal species consumed by the Khasi tribe of Meghalaya, India](https://www.researchgate.net/publication/252932820_Wild_edible_macrofungal_species_consumed_by_the_Khasi_tribe_of_Meghalaya_India?ev=prf_pub). **Indian Journal of Natural Products and Resources***.* 4(2):179-204
35. Bhattacharjee K, Banerjee S, Bawitlung L, Krishnappa D and **Joshi SR** (2014)A study on parameter optimization for degradation of endosulfan by bacterial consortia isolated from contaminated soil. **Proceedings of National Academy of Sciences. Section B: Biological Sciences***.*84(3):657–667.DOI: 10.1007/s40011-013-0223-.
36. Blah MM and **Joshi** **SR** (2013) Nutritional content evaluation of traditional recipes consumed by ethnic communities of Meghalaya, India. **Indian Journal of Traditional Knowledge***.*12(3), 498-505
37. Thokchom S and **Joshi** **SR** (2013) Physicochemical analysis of ethnically fermented soybean products of North-East India and molecular characterization of associated lactic acid bacteria. **Proceedings of National Academy of Sciences. Section B: Biological Sciences***.*85(2) 527-533 . DOI: 10.1007/s40011-013-0199-1
38. Nath A, Chattopadhyay A and **Joshi** **SR** (2013) Biological activity of endophytic fungi of *Rouwolfia serpentina* Benth, an ethnomedicinal plant used in folk medicines in Northeast India. **Proceedings of National Academy of Sciences. Section B: Biological Sciences.** DOI: 10.1007/s40011-013-0184-8.
39. Devi LS, Bareh DA and **Joshi** **SR** (2014) Studies on biosynthesis of antimicrobial silver nanoparticles using endophytic fungi isolated from the ethno-medicinal plant *Gloriosa superba* L. **Proceedings of National Academy of Sciences. Section B: Biological Sciences.** 84(4):1091–1099**.** DOI: 10.1007/s40011-013-0185-7
40. Banerjee S and **Joshi** **SR** (2012) Preliminary screening and compositional analysis of bacterial biofilm from hypogean environments of Meghalaya, India. **Keanean Journal of Science**.1**:**20-32
41. Banerjee S and **Joshi** **SR** (2012) Insights into cave architecture and the role of bacterial biofilm. **Proceedings of National Academy of Sciences. Section B: Biological Sciences.** 83(3):277-290**.** DOI: 10.1007/s40011-012-0149-3.
42. Bhattacharjee K and **Joshi** **SR** (2013) Phylogenetic rearrangement of *Streptomyces* spp. On the basis of Internal transcribed Spacer (ITS) region using molecular morphometrics approach. **Indian Journal of Biotechnology.** 12: 67-79.
43. Kumar R, Nongkhlaw M, Acharya C and **Joshi** **SR** (2013) Soil bacterial metagenomic analysis from uranium ore deposit of Domiasiat in North-east India. **Current Science**:105(4): 495-498
44. Kumar R, Nongkhlaw M, Acharya C and **SR Joshi**(2013) Bacterial community structure from the perspective of the uranium ore deposits of Domiasiat in India. **Proceedings of National Academy of Sciences. Section B: Biological Sciences***.*83(4):485-497.DOI: 10.1007/s40011-013-0164-z.
45. Kumar R, Nongkhlaw M, Acharya C and **Joshi** **SR** (2013) Growth media composition and heavy metal tolerance behaviour of bacteria characterized from the sub-surface soil of uranium rich ore bearing site of Domiasiat in Meghalaya. **Indian Journal of Biotechnology***.* 12: 115-119
46. Kumar R, Nongkhlaw M, Acharya C and **Joshi** **SR** (2013) Uranium (U)-tolerant bacterial diversity from U ore deposit of Domiasiat in North-East India and its prospective utilisation in bioremediation. **Microbes and Environment.** 28(1):33-41.
47. Saikia P and **Joshi SR** (2014) A study on the occurrence of non-O157 Shiga toxin-producing *Escherichia coli* isolates in retail chicken meats marketed in North-East India . **Proceedings of National Academy of Sciences. Section B: Biological Sciences**.**8**4:337-342 ; DOI: 10.1007/s40011-012-0143-9.
48. Lyngwi NA, Koijam K,Sharma D and **Joshi** **SR** (2013) Culturable bacterial diversity along the altitudinal zonations and vegetation range of tropical Eastern Himalaya. **Revista de Biología Tropical.** 61(1): 467-490
49. Nongkhlaw M, Kumar R, Acharya C and **Joshi** **SR** (2012) Occurrence of horizontal gene transfer of PIB-type ATPase genes among bacteria isolated from the uranium rich deposit of Domiasiat in North East India. **PLoS ONE**. 7(10): e48199. doi:10.1371/journal.pone.0048199
50. Devi LS, Khaund P, Nongkhlaw FMW and **Joshi** **SR** (2012) Diversity of culturable soil micro-fungi along altitudinal gradients of eastern Himalayas. **Mycobiology**40(3):151-158.
51. Saikia P and **Joshi** **SR** (2012) Changes in microfungal community in Cherrapunjee – the wettest patch on earth as influenced by heavy rain and soil degradation. **Advances in Microbiology***.* 2: 456-464. doi:10.4236/aim.2012.24059
52. Banerjee S, Rai S, Sarma B and **Joshi****SR** (2012) Bacterial biofilm in water bodies of Cherrapunjee: the rainiest place on planet earth. **Advances in Microbiology**.2:465-475. doi:10.4236/aim.2012.24060
53. Bhattacharjee K, Banerjee S and **Joshi** **SR** (2012) Diversity of *Streptomyces* spp**. i**n eastern Himalayan region- computational RNomics approach to phylogeny. **Bioinformation***.* 8(12): 548-554
54. Kumar R, Acharya C and **Joshi** **SR** (2012) Diversity of uranium tolerating bacteria at Domiasiat, West Khasi Hills, Meghalaya. **Assam University Journal of Science & Technology: Biological and Environmental Sciences.** 9(1):186-190
55. Devi LS and **Joshi** **SR** (2012) Antimicrobial and synergistic effects of silver nanoparticles synthesized using soil fungi of high altitudes of eastern Himalaya. **Mycobiology***:* 40(1): 27-34
56. Bhagobaty RK and **Joshi SR** (2012) Antimicrobial and antioxidant activity of endophytic fungi isolated from ethnomedicinal plants of the  “Sacred forests" of Meghalaya, India. **Mikologia Lekarska** 19 (1):5-11
57. Bhagobaty RK and **Joshi SR** (2012) Enzymatic activity of fungi endophytic on five medicinal plant species of the pristine sacred forests of Meghalaya, India. **Biotechnology and Bioprocess Engineering.** 17:33-40
58. Nath A, Raghunatha P and **Joshi SR** ( 2012) Diversity and biological activities of endophytic fungi of *Emblica officinalis,* an ethnomedicinalplant of India. **Mycobiology**40(1): 8-13
59. Thokchom S and **Joshi** **SR** (2012) Probiotic and bacteriocin efficacy of lactic acid bacteria from traditionally fermented foods: a review. **Assam University Journal of Science and Technology: Biological and Environmental Sciences.** 10(1):142-155
60. Thokchom S and **Joshi SR** (2012)Antibiotic resistance and probiotic properties of dominant lactic microflora from *Tungrymbai*, an ethnic fermented soybean food of India. **Journal of Microbiology**. 50(3): 535-539
61. Thokchom S and **Joshi** **SR** (2012) Microbial and chemical changes during preparation in the traditionally fermented soybean product Tungrymbai of ethnic tribes of Meghalaya. **Indian Journal of Traditional Knowledge.** 11(1):139-42
62. Rapsang George F. and **Joshi** **SR** ( 2012) Bacterial diversity associated with *Tungtap,* an ethnic traditionally fermented fish product of Meghalaya. **Indian Journal of Traditional Knowledge***.*11(1):134-138
63. Rapsang GF, Kumar R and **Joshi SR** (2011) Identification of *Lactobaccilus pobuzihii* from Tungtap-a traditionally fermented fish food and analysis of its bacteriociogenic potential. **African Journal of Biotechnology**. 10(57): 12237-12243.
64. Bhagobaty RK and **Joshi SR** (2011) Fungal endophytes of five medicinal plants prevalent in the traditionally preserved `sacred forests` of Meghalaya, India. **Forest Science and Technology**. 7(4): 151–154
65. Bhagobaty RK and **Joshi SR** (2011) Metabolite profiling of endophytic fungal isolates of five ethno-pharmacologically important plants of Meghalaya, India. **Journal of Metabolomics and Systems Biology**. 2(2): 20-31
66. Bhagobaty RK and **Joshi SR** (2011) Multi-loci molecular characterization of endophytic fungi isolated from five medicinal plants of Meghalaya, India. **Mycobiology***,*39(2): 71-78
67. Pfoze NL, Kumar Y, Myrboh B, Bhagobaty RK and **Joshi SR** (2011) *In vitro* antibacterial activity of alkaloid extract from stem bark of *Mahonia manipurensis* Takeda**.  Journal of Medicinal Plants Research.** 5(5), 859-86
68. Kumar R, Acharya C and **Joshi** **SR** (2011) Isolation and analyses of uranium tolerant *Serratia marcescens* strains and their utilization for aerobic uranium U(VI) bioadsorption. **Journal of Microbiology***.* 49(4):568-574
69. Purusothaman KG, Bhattacharjee K, **Joshi** **SR** and Vasanthakumari R (2010) Comparative efficacies of three acid-fast staining techniques under field conditions for *Mycobacterium tuberculosis* in the Indian context. **The Internet Journal of Microbiology**. 4 (2)
70. Sarma B, Acharya C and **Joshi** **SR** (2010) Pseudomonads : a versatile bacterial group exhibiting dual resistance to metals and antibiotics. **African journal of Microbiology Research**.4(25): 2828-2835.
71. Saikia P and **Joshi** **SR** (2010) Retail market poultry meats of North-east India : A microbiological survey for pathogenic microorganisms. **Research Journal of Microbiology**. 5(1) : 36-43
72. Devi LS, Khaund P and **Joshi SR** (2010) Thermostable α-amylase from natural variants of *Bacillus* spp. Prevalent in eastern himalayan range. **African journal of Microbiology Research**. 4(23): 2534-2542
73. Bhagobaty RK, **Joshi SR** and Kumar R (2010) *Penicillium verruculosum* RS7PF: a root fungal endophyte associated with an ethno-medicinal plant of the indigenous tribes of eastern India. **African journal of Microbiology Research**. 4(9): 766-770.
74. **Joshi SR**, R Kumar, Saikia P, Bhagobaty RK and Thokchom S (2010) Impact of roadside pollution on microbial activities in sub-tropical forest soils of North-East India. **Research Journal of Environmental Sciences***,* 4(3) : 280-287
75. Bhagobaty RK, Ghosh A and **Joshi SR** (2009) Degradation of non-petroleum based natural and synthetic oil by lipase producing fluorescent *Pseudomonas* spp isolated from petroleum based hydrocarbon saturated soils of shilling, Meghalaya, India. **Online Journal of Biotechnology Research****1(3):** 78-83
76. **Joshi SR**, Saikia P and Koijam K (2009) Characterization of microbial indicators to assess the health of degraded soil in Cherrapunjee, India-highest rainfall area of the world. **International Journal of Biotechnology & Biochemistry**. 5(4) 379-391
77. Sohliya I, Bhagobaty RK, Kumar R and **Joshi SR** ( 2009) *Tungrymbai*- traditional fermented soybean food of the ethnic tribes of Meghalaya. **Indian Journal of Traditional Knowledge.** 8(4): 559-561
78. Rapsang GF and **Joshi** **SR** (2009) Microbes in food: Hazards and regulating factors. **Agrobios**  VII(12) 15-17
79. Bhagobaty RK and **Joshi** **SR** (2009) Promotion of seed germination of green gram and chick pea by *Penicillium verruculosum* RS&PF, a root endophytic fungus of *Potentilla fulgens* L. **Advanced Biotech**.VIII (07): 16-18
80. Bhagobaty RK, **Joshi** **SR** and Das RN ( 2008) Prediction of the microbial biodegradative pathway of organophosphorus pesticide Chlorpyrifos using the web based open access pathway prediction system of the University of Minnesota Biocatalysis/Biodegradation database. **Bioinformatics Trends** . 3(4) : 9-14
81. Kumar R, Acharya C and **Joshi** **SR** ( 2008) Metal tolerant Bacillus and Pseudomonas from uranium rich soils of Meghalaya. **Research Journal of Biotechnology** (Special Issue. Dec 2008) 345-350
82. Bhattacharjee A, Choudhury H, Maheshwari U and **Joshi SR** (2008*) In-silico* prediction of structural and functional aspects of a hypothetical protein of *Arabidopsis thaliana* (L) Heynh. **Advanced Biotech.**VII (06):14-18
83. Majaw S, Kurkalang S, **Joshi SR** and A Chatterjee (2008) Effect of *Clerodendron colebrokianum* walp.leaf extract on cold – restraint stress in mice. **Pharmacologyonline**. 2: 742-753.
84. Bhagobaty RK and **Joshi SR** (2008) DNA damage protective activity of the crude metabolites of endophytic fungi isolated from two ethno-pharmacologically important medicinal plants of the Khasi Hills of Meghalaya, India. **Pharmacologyonline***.* 3*:* 882-888.
85. **Joshi SR**, Bhagobaty RK and Kumar R (2008).Microbial community on leaf surfaces of broad-leaved alder (*Alnus nepalensis* D.Don) and needle-leaved khasi pine (*Pinus* *kesiya* Royle Ex Gordon) as influenced by atmospheric dry deposition of roadside pollution In eastern Himalayas. **Research Journal of Environmental Sciences**.2(4) : 234-242
86. **Joshi SR** (2008). Influence of roadside pollution on phylloplane microbial community of  *Alnus* *nepalensis .* **Revista de Biología Tropical**. 56(3) : 1521-29
87. Bhagobaty RK, **Joshi SR** and Malik A (2007). Microbial Degradation of Organophosphorous Pesticide: Chlorpyrifos (Mini-Review)*.* **The Internet Journal of Microbiology***.* Vol 4 No. 1
88. **Joshi SR,** Sharma GD and Mishra RR (1993). Effect of heavy metal accumulation on leaf surface microorganisms of sub-tropical pine *( Pinus kesiya*). **Tropical Ecology**. 34(2): 230-239.
89. **Joshi SR**, Sharma GD and Mishra RR (1993). Microbial enzyme activities related to litter decomposition near a highway in a sub-tropical forest of North-East India. **Soil Biology and Biochemistry***.* 25(12). 1763-1770. doi:10.1016/0038-0717(93)90181-A
90. **Joshi SR,** Chauhan M, Sharma GD and Mishra RR (1991). Effect of deforestation on microbes, VAM fungi and their enzymatic activity in Eastern Himalaya. **Recent Researches in Ecology, Environment and Pollution***.* 6: 141-152.

# Book Chapters: (42)

1. **SR Joshi**, G.D.Sharma and R.R.Mishra (1991). Effect of disturbance on microbial population and their activities in forest soils at higher altitudes of Meghalaya. In: High Altitudes of Himalaya (Biogeography, Ecology & Conservation) (Eds. P.S.Pangtey & R.S. Rawal) Gyanodaya Prakashan, Nainital, pp.298-309
2. D Syiem, **SR Joshi** and MB Syiem (2004). Intellectual Property rights and North East India- Issues and relevance. **In:** Intellectual Property Rights. pp.145-149.
3. **SR Joshi** ( 2005) . Bioresource and Bioprospecting in NE India: Unlocking the  treasure for  socio-economic   development of the region. **In**:  Socio-Economic Development of India with special reference to NE India**.**Shillong College Academic Society pp.141-144.
4. R Kumar and **SR Joshi** (2008). Microbial ecology of the soil: Studying the diversity of microorganisms in the most complex of environments- A review. **In**: Advances in Applied Microbiology, Agrobios, Jodhpur, India. pp: 267-277
5. **SR Joshi** (2008) Relevance of microbial biosensors in environmental toxicity studies. In :Proceedings of National Seminar on toxicity of chemicals & their hazards with special reference to heavy metals. St.Edmund’s College, Meghalaya (India), pp.81-86.
6. RK Bhagobaty, P Biswa, and **SR**  **Joshi** (2009) Isolation of endophytic fungus from *Osbeckia stellata* Buch. Ham.ex D.Don, a medicinal plant of the Pine forests of Meghalaya, India. In: Biodiversity– Herbal Medicine, pp: 148-157. Akansha Publishing House, Darya Ganj, New Delhi, India.
7. RM Syiem, A Chatterjee, S Majaw and **SR Joshi** ( 2009). Study on the adaptogenic properties of *Clerodendron colebrrokianum* walp. On cold stress induced –mice. In: Biodiversity–Herbal Medicine, pp: 134-139. Akansha Publishing House, Darya Ganj, New Delhi, India
8. R Kumar and **SR Joshi**  (2009). Probiotics: Indigenous fermented foods as a source of potential medicinal microbes.In: Biodiversity– Herbal Medicine, pp: 211-222. Akansha Publishing House, Darya Ganj, New Delhi, India.
9. Rakshak Kumar and **SR Joshi** ( 2009) Probiotics: Biotechnology in prolongation of life . In: Biotechnology Applications (eds CSK Mishra and Pascale Champagne). IK International Publishing House . India. Pp. 187-212
10. RK Bhagobaty and **SR Joshi** ( 2009) Endophytes: A biotechnological goldmine . **In**: Biotechnology Applications ( eds CSK Mishra and Pascale Champagne) IK International Publishing House . India. Pp. 300-308
11. **SR Joshi** (2010) Roadside pollution and microbial community of alder and khasi pine . In: Advances in Biotechnology and Microbiology ( Eds PR Jatkar, P parihar and L Parihar) . Agrobios ( India) pp.101-108
12. **SR Joshi** and RS Singh (1999). Comparative study on the production of biogas using different slurries in a miniature biogas production system. **In:**  Proceedings of National Seminar on Pollution, Man & Environment. Pp. 87-91.
13. Nathaniel A Lyngwi and **SR Joshi** ( 2014) Economically important Bacillus and related genera: a mini review. **In**: Biology of useful plants and microbes. Narosa Publishing House, New Delhi, India pp 33-43.
14. Polashree Khaund and **SR Joshi** ( 2014) The Gomphus Paradox of Meghalaya: Wild Edible Fungus or a Poisonous Mushroom? In: Microbial Diversity and Biotechnology in Food Security ( Eds:R.N. Kharwar, R.S. Upadhyay, N.K. Dubey, Richa Raghuwanshi ) Pp 171-176 .DOI:10.1007/978-81-322-1801-2\_13. Springer Link
15. **SR Joshi**, Debajit Kalita, Rakshak Kumar, Macmillan Nongkhlaw, Pynskhem Bok Swer (2014) Metal–Microbe Interaction and Bioremediation. In: Radionuclide Contamination and Remediation Through Plants (Eds Dharmendra Kumar Gupta, Clemens Walther) pp 235-251.DOI:10.1007/978-3-319-07665-2\_12 http://link.springer.com/chapter/
16. Debajit Kalita, Barnali Sarma and **SR Joshi**(2015) Lead(Pb) tolerant bacterial strains from uranium rich soil of Domiasiat in Meghalaya. In: Bioreview-National Perspectives and Sustainable Development” Morigaon College, Assam. pp 63-69.
17. Barnali Sarma and **SR Joshi** (2015) Environmental toxicity and the role of Pseudomonads in biodegradation of xenobiotics. ***In:*** Biology, Biotechnology andSustainable Development. (Ed: H. Choudhury) Research India Publications, India pp. 41-61
18. **Joshi SR** and Biswas K(2015) Antioxidants in fermented Foods. In: Health Benefits of Fermented Foods and Beverages (Ed: J.P. Tamang), CRC Press. Pp 553-565.
19. Molins AC, Galvez A, **Joshi SR**, et al. ( 2016) Indigenous Fermented Foods of South Asia. *In*: Indigenous Fermented Foods of South Asia (Ed: V.K. Joshi). Taylor and Francis Group, LLC. Pp. 1-67.
20. Senapati AK, Ann A, **Joshi SR**, et al. (2016) Diversity of Indigenous Fermented Foods and Beverages of South Asia. *In*: Indigenous Fermented Foods of South Asia (Ed: V.K. Joshi). Taylor and Francis Group, LLC. Pp.69-106.
21. Kumari K, Pandey A, **Joshi SR**, et al. (2016) Indigenous Alcoholic beverages of South Asia. *In*: Indigenous Fermented Foods of South Asia (Ed: V.K. Joshi). Taylor and Francis Group, LLC. Pp. 501-596.
22. Rosma A, Singh A, **Joshi SR**, et al. (2016) Indigenous Fermented foods. *In*: Indigenous Fermented Foods of South Asia (Ed: V.K. Joshi). Taylor and Francis Group, LLC. Pp. 645-713.
23. **Joshi SR** and Biswas K (2017) Enterococci Prevalent in Processed Food Products: From Probiotics to Food Safety. In: Kalia V., Shouche Y., Purohit H., Rahi P. (eds) Mining of Microbial Wealth and MetaGenomics. Springer, Singapore . pp. 287-299. https://doi.org/10.1007/978-981-10-5708-3\_17.
24. Bhattacharjee K and **Joshi SR** (2018) Lithic bacteria, a lesser known group in biomining arena. In: Microbial Cell Factories. (Eds: Deepansh Sharma, Baljeet Singh Saharan ) Taylor & Francis Group, CRC Press, Boca Raton, Florida, USA. pp 51-68
25. **Joshi SR** and Kalita D (2018) Biological, Chemical and Nanosorption Approaches in Remediation of Metal Wastes. In: Remediation Measures for Radioactively Contaminated Areas. (Eds: D.K. Gupta and A.Voronina) Springer Nature, Switzerland. Pp. 93-112.
26. Borthakur M and **Joshi SR** (2019) Wild Mushrooms as Functional Foods: The Significance of Inherent Perilous Metabolites. *In:* New and Future Developments in Microbial Biotechnology and Bioengineering. (Eds: VK Gupta & A Pandey) Elsevier , Netherlands. Pg 1-12 . DOI: https://doi.org/10.1016/B978-0-444-63504-4.00001-3
27. Banerjee S, Jha DK and **Joshi SR** (2019) Cave Microbiome for Human Welfare. *In:* Satyanarayana T., Das S., Johri B. (eds) Microbial Diversity in Ecosystem Sustainability and Biotechnological Applications. Springer, Singapore. pp. 3-30. https://doi.org/10.1007/978-981-13-8487-5\_1
28. **Joshi SR**, Bareh D and Banerjee A (2019) Soil Microbiota and Sustainable Jhum Agroecosystem. *In:* Satyanarayana T., Das S., Johri B. (eds) Microbial Diversity in Ecosystem Sustainability and Biotechnological Applications. Springer, Singapore. pp 57-82. https://doi.org/10.1007/978-981-13-8487-5\_3.
29. **Joshi SR** and Chettri Upashna (2019) Fungi in Hypogean Environment: Bioprospection Perspective**.**  ***In:*** Satyanarayana T, Deshmukh SK, Deshpande MV (eds) Advancing Frontiers in Mycology and Mycotechnology: Basic and Applied Aspects of Fungi. Springer, Singapore pp. 539-562.
30. **Joshi SR,** Khongriah Welfareson and Biswas Koel (2020) Ethnic Fermented Foods and Beverages of Meghalaya. **In**: J.P. Tamang (ed.) Ethnic Fermented Foods and Beverages of India: Science History and Culture. Springer Nature Singapore Pte Ltd. pp. 421-434.
31. Nath Archana and **Joshi SR** (2020) Bioprospection of endophytic fungi associated with ethnoveterinary plants for novel metabolites. **In**: VK Sharma, MP Shah, S Parmar and A Kumar (Eds). Fungi Bio-Prospects in Sustainable Agriculture, Environment and Nano-Technology. Volume 1: Fungal Diversity of Sustainable Agriculture Academic Press, Elsevier, United Kingdom. pp. 375-399. https://doi.org/10.1016/B978-0-12-821394-0.00015-9.
32. Thabah S. and **Joshi S.R.** (2021) Plant growth promoting rhizobacteria from the perspectives of tea plantations and diseases. **In:** HB Singh and Anukool Vaishnav (Eds). New and Future Developments in Microbial Biotechnology and Bioengineering . Elsevier Amsterdam, Netherlands pp. 315-332. ISBN: 978-0-323-85163-3
33. Pun B. and **Joshi S.R.** (2022) Microbes as biomedicinal minifactories and medical product evaluation models. In: PV Mohanan (Ed.) Biomedical Product and Materials Evaluation Standards and Ethics. Elsevier WoodHead Publishing. United Kingdom. pp. 667-701.
34. Akoijam N. and **Joshi S.R. (**2022) Conservation Metagenomics: Understanding Microbiomes for Biodiversity Sustenance and Conservation. **In:** A. Kumar et al. (eds.), Molecular Genetics and Genomics Tools in Biodiversity Conservation, Springer Nature Singapore Ltd. https://doi.org/10.1007/978-981-16-6005-4\_3
35. Banerjee A. Barik S.K. and **Joshi S.R.** (2022) Bacilli and Sustainable *Jhum* Agrobiotechnology. **In**: M. T. Islam et al. (eds.), *Bacilli in Agrobiotechnology*, Bacilli in Climate Resilient Agriculture and Bioprospecting. Springer Nature Switzerland. https://doi.org/10.1007/978-3-030-85465-2\_11
36. Chanda P. and **Joshi S.R.** (2022) Understanding the Small World. **In**: ( P. Verma Ed.) The Microbes Industrial Microbiology and Biotechnology. Springer Nature Singapore Pte Ltd. pp. 1-62. https://doi.org/10.1007/978-981-16-5214-1. ISBN 978-981-16-5213-4 ISBN 978-981-16-5214-1 (eBook)
37. Akoijam N., Kalita D. and **Joshi S.R.** (2022) Bacteria and Their Industrial Importance. **In**: ( P. Verma Ed.) The Microbes Industrial Microbiology and Biotechnology. Springer Nature Singapore Pte Ltd . pp. 63-80. https://doi.org/10.1007/978-981-16-5214-1. ISBN 978-981-16-5213-4 ISBN 978-981-16-5214-1 (eBook)
38. Paul S. and **Joshi S.R.** (2022) Industrial Perspectives of Fungi. **In**: ( P. Verma Ed.) The Microbes Industrial Microbiology and Biotechnology. Springer Nature Singapore Pte Ltd . pp. 81- 106.https://doi.org/10.1007/978-981-16-5214-1. ISBN 978-981-16-5213-4 ISBN 978-981-16-5214-1 (eBook)
39. Chettri U., Rai A.K. Thabah S. and **Joshi S.R.** (2020) Production of Malt-Based Beverages. **In**: P.Verma (Ed.) The Microbes Industrial Microbiology and Biotechnology. Springer Nature Singapore Pte Ltd. pp. 279-306. https://doi.org/10.1007/978-981-16-5214-1. ISBN 978-981-16-5213-4 ISBN 978-981-16-5214-1 (eBook)
40. Joshi, S.R. and Baskar, S. (2022). Factors Affecting Biomineralization. In: Berenjian, A., Seifan, M. (eds) Mineral Formation by Microorganisms. Microbiology Monographs, vol 36. Springer, Cham. Pp. 283-314 https://doi.org/10.1007/978-3-030-80807-5\_8
41. Pun, B., Nongkhlaw, F.M.W. and Joshi S.R. (2022) Metaomics Technologies in Understanding Ethnomedicinal Plants and Endophyte Microbiome. In: J. Sahu, A. Vaishnav and HB Singh (Eds) . Plant-Microbe Interactions, harnessing Next-Generation Molecular technologies for Sustainable Agriculture CRC Press (Taylor & Francis Group). DOI: 10.1201/9781003171416. ISBN: 9781003171416 (eBook)
42. Joshi, S.R. and Kalita, D. (2022) Bioderived and bioconjugated materials for remediation of heavy metals and dyes from waste water. **In:** Recent Trends and Innovations in Sustainable Treatment Technologies for Heavy Metals, Dyes and Other Xenobiotics. (Ed: Biswanath Bhunia & Muthusivaramapandian Muthuraj). Bentham Science Publishers Pte Ltd. Singapore . ISBN (online) : 978-981-5049-72-5

**Books Authored:**

* 1. **SR Joshi** and N Joshi (1999): Man & His Environment. A text book for Degree Course. Published by Gautam Bros. Shillong. 1999 pp. 132
	2. **SR Joshi**: Health Education.(1993) A text book for high school . Published by Gautam Bros. Shillong. 1993. pp.202
	3. **SR Joshi** and SP Adhikari (2000): Paryavaran Adhyan – Part I A Text Book on Environmental Studies for Class I and Class II. . Published by Text Book Committee Shillong, Meghalaya. Recommended by Meghalaya & Mizoram Board of School Education.pp. 87.
	4. **SR Joshi** and SP Adhikari (2000): Paryavaran Adhyan – Part II A Text Book on Environmental Studies for Class I and Class II. . Published by Text Book Committee Shillong, Meghalaya. Recommended by Meghalaya & Mizoram Board of School Education. pp. 89
	5. **SR Joshi** and SP Adhikari (2001): ParyavaranAdhyan – Part III. A Text Book on Environmental Studies for Class III and Class IV. Published by Text Book Committee Shillong, Meghalaya. Recommended by Meghalaya & Mizoram Board of School Education..pp. 98.
	6. **SR Joshi** and SP Adhikari (2001): Paryavaran Adhyan – Part IV. A Text Book on Environmental Studies for Class III and Class IV. Published by Text Book Committee Shillong, Meghalaya. Recommended by Meghalaya & Mizoram Board of School Education. pp.158
	7. **SR Joshi** (2005): The Teaching of Science. A reference book for science teachers and B.Ed trainees Courses. Published by APH Publishing Corporation, New Delhi,. pp. 383
	8. **SR Joshi** (2006): Biopesticides: A Biotechnological Approach. A reference book on Biopesticides. Published by New Age International(P) Limited, New Delhi.. pp.103
	9. **SR Joshi** (2007) Microbes: Redefined Personality. Published by APH Publishing Corporation. Ansari Road, New Delhi. pp 236.
	10. **SR Joshi** and SP Adhikari (2008): Art of Healthy and Productive Living. Text Book for Class II. Book Palace, Shillong. pp 100
	11. **SR Joshi** and SP Adhikari (2008): Art of Healthy and Productive Living. Text Book for Class III. Book Palace, Shillong. pp 63
	12. **SR Joshi** and SP Adhikari (2008): Art of Healthy and Productive Living. Text Book for Class II. Book Palace, Shillong. pp 62.
1. **Papers Presented in conferences:** International (21) : National (50).
2. **Awards :**
* Gold Medalist in B.Sc (Botany-Hons) Examination under NEHU.
* Gold Medalist in M.Sc (Botany) Examination under NEHU.
* Gold medalist in B.Ed Examination under NEHU.
* Best Graduate of North-Eastern Hill University ( 1985-86)
* Merit Prize winner of NEHU for B.Sc Examination.
* Merit Prize winner of NEHU for M.Sc Examination.
* Merit Prize winner of Meghalaya Science Society for B.Sc Examination.
* Merit Prize winner of Meghalaya Science Society for M.Sc Examination.
* Merit Prize awarded by Jawaharlal Nehru Memorial Trust, New Delhi, for B.Sc Examination.
* Merit Prize awarded by Jawaharlal Nehru Memorial Trust, New Delhi, for M.Sc Examination.
* Merit Prize winner of NEHU for B.Ed Examination.
* Recipient of Post-Matric Scholarship of Govt. of Meghalaya
* Recipient of Post-Graduate Scholarship of NEHU.
* Recipient of National Merit Scholarship of Ministry of Human Resource Development, Govt. of India, New Delhi.

 **Recognitions**

* Felicitated by the then Prime Minister of India (Late Rajiv Gandhi) for topping in Graduate Level examination of NEHU, 1986.
* Topper in the course for NCC officer in Officer Training School, Kamptee, 1997 and awarded All India Best Officer Cadet by NCC Directorate, New Delhi.
* Received Felicitation Award and Certificate of Appreciation by St. Anthony's College in 1999, for outstanding teaching and involvement in extra-curricular activities.
* Felicitated by NSS Cell of North-Eastern Hill University in 1994 for valuable contributions and services to NSS related activities.
* Awarded the best speaker trophy by ISRO for the presentation on “Role of Space Science and Technology in Science Journalism: Science communicators in the new age” at the Science Communicators Meet during 97th Indian Science Congress at University of Kerela , Trivandrum
* Awarded Dr. Ambedkar Fellowhip National Award 2009 by Bharatiya Dalit Sahitya Akademi for literary and social services rendered for upliftment of less fortunates by way of writing books for School curriculum in vernacular language.
1. **Extramural Research Projects:** Completed (16); Ongoing (2)
2. **M.Sc Dissertation Guided:** 62
3. **National Academies (NASI-INSA-IAS) Fellowship Scholars Mentored:** 11
4. **Ph.D. Supervised and Awarded:** 25 ; **Thesis Submitted**: 02: **Registered**: 08

|  |  |  |
| --- | --- | --- |
| Sl. No | Name of Ph.D. Mentee  | P.G Degree |
| 1 | Dr. Ranjan K. Bhagobaty | M.Sc. (Agri.)-Aligarh Muslim University |
| 2 | Dr. Rakshak Kumar | M.Sc. Biotechnology- Madras University |
| 3 | Dr. Sharmila Thokchom | M.Sc. (Microbiology)- Madras UniversityM.Phil -Bharathidasan University |
| 4 | Dr. Barnali Sharma | M.Sc. Biotechnology- Gauhati University |
| 5 | Dr. Purabi Saikia | M.Sc. Biotechnology- Gauhati University |
| 6 | Dr. George F. Rapsang | M.Sc. Biotechnology-North-Eastern Hill University |
| 7 | Dr. Khedarani Koijam | M.Sc. Microbiology-Mangalore University |
| 8 | Dr. Lamabam S Devi | M.Sc. Microbiology- HNB Garhwal University |
| 9 | Dr. Polashree Khaund | M.Sc. Biotechnology-Nagpur University |
| 10 | Dr. Nathaniel A. Lyngwi | M.Sc. Biotechnology-North-Eastern Hill University |
| 11 | Dr. Archana Nath | M.V.Sc. -Assam Agricultural University |
| 12 | Dr. Subhro Banerjee | M.Sc. Microbiology- Jiwaji University, Gwalior |
| 13 | Dr. Fenella M W. Nongkhlaw | M.Sc. Biotechnology-North-Eastern Hill University |
| 14 | Dr. Archana Ojha(Joint Supervisor) | M.Sc. Microbiology- Lucknow University |
| 15 | Dr. Kaushik Bhattacharjee | M.Sc. Microbiology- Dr. MGR University, Chennai |
| 16 | Dr. H. Romola Devi( Joint Supervisor) | M.Sc . Microbiology- Bangalore University |
| 17 | Dr. Koel Biswas | M.Sc. Biotechnology- North-Eastern Hill University |
| 18 | Dr. Debajit Kalita | M.Sc. Applied Microbiology- Bangalore University |
| 19 | Dr. Madhusmita Borthakur | M.Sc. Biotechnology- VIT Vellore |
| 20 | Dr. Aishiki Banerjee | M.Sc. Microbiology- VIT Vellore |
| 21 | Dr. Susmita Paul | M.Sc. Biotechnology- Bangalore University |
| 22 | Dr. Donald A. Bareh | M.Sc. Biotechnology- North-Eastern Hill University |
| 23 | Dr. Lily Shylla | M.Sc. Biotechnology- North-Eastern Hill University |
| 24 | Dr. Augustine Lamin Ka-Ot | M.Sc. Microbiology- Sikkim University |
| 25 | Ms. Upashna Chettri | M.Sc. Microbiology- North Bengal University |

**Research Team**

|  |  |  |
| --- | --- | --- |
| 1. | Dr. Macmillan Nongkhlaw | PDF:DST-Inspire Faculty Awardee (PhD-JNU) |
| 2. | Ms. Nirmala Akoijam | M.Sc. Biotechnology- North-Eastern Hill University |
| 3. | Mr. Welfareson Khongriah | M.Sc Microbiology, Pondicherry University |
| 4. | Mr. Bishal Pun | M.Sc. Biotechnology- North-Eastern Hill University |
| 5. | Mr. Aawaj Kuloong Rai | M.Sc. Biotechnology- North Bengal University |
| 6. | Mr. Stevenson Thabah | M.Sc. Biotechnology- North-Eastern Hill University |
| 7.  | Ms. Debaraty Chakraborty | M.Sc. Biotechnology- SGRITS, Dehradun, Uttarakhand |
| 8. | Mr. Arigo W. Sangma | M.Sc Biotechnology- Mizoram University |
| 9. | Mr. Vishal Kumar Mohan | M.Sc Microbiology- Punjabi University, Patiala |
| 10. | Ms. Sheetal Joshi | M.Sc Biotechnology- North-Eastern Hill University |
| 11.  | Ms. Piyali Das | M.Sc Biotechnology- North-Eastern Hill University |
| 12. | Ms. Deihaphishisha Kharpran | M.Sc Biotechnology- North-Eastern Hill University |

1. **Administrative responsibilities:**
	* Member, Board of School of Life Sciences, NEHU, Shillong
	* Member, School Board of Physical Sciences. NEHU, Shillong
	* Member, Institutional Biosafety Committee, Mizoram University, Mizoram
	* Member, Institutional Biosafety Committee, NEHU, Shillong
	* Member, Board of Studies, Biotechnology & Bioinformatics, NEHU, Shillong
	* Advisory member, IQAC, St. Anthony`s College, Shillong
	* Advisory Member, Star College Scheme, St. Edmund`s College, Shillong
	* Advisory Member, Star College Scheme, St. Mary`s College, Shillong
	* Advisory Member, Star College Scheme, Lady Keane College, Shillong
	* Deputy Coordinator, UGC-SAP Scheme, Biotechnology & Bioinformatics, NEHU, Shillong
	* Coordinator, DST-FIST Programme, Biotechnology & Bioinformatics, NEHU, Shillong
	* Task Force Member, DST-SERB, Govt of Inida
	* Secretary, North East Region Local Chapter, The National Academy of Sciences, India (NASI), Allahabad
	* Editor, The NEHU Journal, NEHU, Shillong (2018-2021).
* Member, Board of Post Graduate Studies in Botany, Nagaland University, Lumami, Nagaland
* Member, Scientific Advisory Committee, National Agri-Food Biotechnology Institute (NABI), Mohali
* Member, Scientific Advisory Committee, Centre for Innovative and Applied Bioprocessing (CIAB), Mohali
* Member of Governing Body, National Agri-Food Biotechnology Institute (NABI), Mohali
* Member of Governing Body, Centre for Innovative and Applied Bioprocessing, Mohali
* Member, “State Steering Committee for SCF- School Education & SCF-ECCE“ Govt. of Meghalaya
* Member, NEIGRIHMS Scientific Advisory Committee (NSAC), NEIGRIHMS Shillong.
* Member, Academic Expert, Advisory Committee of Department of Molecular Biology & Biotechnology, Tezpur University, Assam.
* Member, Scientific Advisory Committee, NIT Arunchal Pradesh.
* Coordinator, “DBT M.Sc Support Programme” Department of Biotechnology & Bioinformatics, NEHU, Shillong.
* Chairman, Board of Studies, North Eastern Institute of Ayurveda & Homoeopathy (NEIAH), Shillong.
* Chairman, NIRF Committee, NEHU, Shillong ( 2021-till date).
* Member, Institutional Ethics Committee for Human Samples/Participants(IECHSP) (2022-2025)
* Member, Editorial Board, Annual Report, NEHU, Shillong ( 2020- till date).
* Member, NAAC Committee, NEHU, Shillong.
* Member, Institutionalization of Corpus Fund, NEHU, Shilllong
* Member, Board of Management, Deen Dayal Upadhyay Community College, Wahiajer, Meghalaya.
* Member, Board of Research Studies, Mizoram University(2021-2027).
* Member, Planning Committee, NEHU, Shillong.
* Member, Governing Boday, College of Nursing Dr. H. Gordon Roberts Hospital, Shillong.
* Member, Board of Studies in Microbiology, NEHU, Shillong (2021-2024)
* Chairman, Board of Studies in Biotechnology, NEHU, Shillong (2021-2024)
* Member, Board of Studies in Botany, Nagaland University, Nagaland ( 2022-25)
* Member, Board of Studies in Zoology, Sikkim University, Sikkim ( 2023-26).
* Member, Institutional Ethics Committee Pasteur Institute, Govt of Meghalaya(2023-2028)
1. **Academic affiliations:**
* Indian Society of Analytical Scientists(2006)
* National Academy of Sciences, India ((NASI, Allahabad)(2007)
* Association of Microbiologists of India (2007)
* Biotech Research Society of India (2008)
* Mycological Society of India (2017)
* DNA Society of India (2018)
1. **Academic Fellowships/Grants Received**
* Indian Council of Medical Research (ICMR), Govt. of India Travel Grant to Maastricht, The Netherlands ( 2015)
* Department of Science & Technology, SERB, Govt. of India Travel Grant to visit Boston, USA ( 2016)
* Centre for International Co-operation in Science (CICS-INSA) Travel Grant to Maastricht, The Netherlands ( 2015)
* Department of Biotechnology Overseas Fellowship to visit The University of Hawaii at Manoa, USA (2015-2016)
1. **Collaboration/Mentor-Consultancy :**
* Prof. A. Chattopadhyaya,Viswa Bharati University, Santiniketan, West Bengal
* Prof. G. Haldar, National Institute of Technology, Durgapur, West Bengal
* Dr. Kiran K., National Agri-Biotechnology Institute, Mohali
* Prof. K. Chopra, Panjab University, Mohali
* Dr. C. Acharya, Bhabha Atomic Research Centre, BARC, Mumbai
* Dr. A. Bezbaruah, North Dakota State University, USA
* Prof. T.S. Basu Baul, Department of Chemistry, NEHU, Shillong
* Prof. S. Mitra, Department of Chemistry, NEHU, Shillong
* Prof. K.M. Rao, Department of Chemistry, NEHU, Shillong
* Prof. B. Myrboh, Department of Chemistry, NEHU, Shillong
* Dr. R.L. Nongkhlaw, Department of Chemistry, NEHU, Shillong
* Prof. SB Prasad, Department of Zoology, NEHU, Shillong
* Prof. M.S. Dkhar, Department of Botany, NEHU, Shillong
* Prof. S.K. Barik, Director, CSIR-NBRI, Lucknow
* Mentor for a start-up company M/s Caliche, Incubated at IIT Guwahati, Assam.
* Prof. H.S. Gehlot /Dr. Nisha Tak, JNV University, Jodhpur, rajasthan
* Prof. P.R. Gajurel, NERIST, Arunachal Pradesh
* Prof. P Pandey, Assam University, Silchar, Assam
* Dr. Panna Das, Tripura University, Tripura
* Dr. Indira Devi, IBSD-Imphal, Manipur
* Prof. Madumita Barooah, Assam Agricultural University, Jorhat, Assam
1. **Patents : 01 ( Applied); (01)Published)**
2. **Any other:**

**GENOMICS MARKER SEQUENCES SUBMITTED TO GENBANK DATABASES ::**

**Sl. NO: : Accession Number : Organism Name: : Authors: Marker Gene: Partial/Full: Base Pair length**

**JN230520:***Staphylococcus equorum* CM5: Joshi,S.R., Bhattacharjee,K. and Bawitlung,L.:16S rRNA : Partial: >1300bp

**JN230521:** *Enterobacter* sp.MF-1: : Joshi,S.R., Bhattacharjee,K. and Bawitlung,L.:16S rRNA: Partial :>1300bp

**JN230522:** *Bacillus subtilis* MF-2: : Joshi,S.R., Bhattacharjee,K. and Bawitlung,L.: 16S rRNA:Partial :>1300bp

**JN408703:** *Bacterium* PRI5: Joshi,S.R., Bhattacharjee,K. and Banerjee,S.: 16S rRNA: Partial :>1300bp

**JN408704:** *Bacterium* LM5 : Joshi,S.R., Bhattacharjee,K. and Banerjee,S. : 16S rRNA: Partial : >1300bp

**JN408705:** *Streptomyces* sp. RH4: : Joshi,S.R., Bhattacharjee,K. and Banerjee,S.: : 16S rRNA: Partial : >1300bp

**JN408706**: *Streptomyces vinaceus* strain LANG-3: Joshi,S.R., Bhattacharjee,K. and Banerjee,S.: 16S rRNA:Partial : >1300bp

**JN408707:** *Kitasatospora* sp. LANG-2: Joshi,S.R., Bhattacharjee,K. and Banerjee,S.:16S rRNA: Partial:>1300bp

**JN408708:** *Nocardia aobensis* strain AM-1: Joshi,S.R., Bhattacharjee,K. and Banerjee,S.:16S rRNA: Partial : >1300bp

**JF827349:** *Streptomyces aureofaciens* strain GL2: Joshi,S.R., Bhattacharjee,K. and Banerjee,S.: 16S rRNA:Partial : >1300bp

**JF827350:***Streptomyces chattanoogensis* strain GP4:Joshi,S.R., Bhattacharjee,K. and Banerjee,S.:16S rRNA: >1300bp

**JF827351:** *Streptomyces niveoruber* strain MA1: Joshi,S.R., Bhattacharjee,K. and Banerjee,S.:16S rRNA:Partial :>1300bp

**JF827352:** *Streptomyces cacao*i subsp. *asoensis* strain MB2:Joshi,SR,Bhattacharjee,K and Banerjee,S:16S rRNA: 1300bp

 **JF827353:** *Streptomyces galbus* strain NG4: Joshi,S.R., Bhattacharjee,K. and Banerjee,S.:16S rRNA : Partial : >1300bp

**JF827354:** *Streptomyces griseoruber* strain NG5: Joshi,S.R., Bhattacharjee,K. andBanerjee,S.: 16S rRNA: Partial :>1300bp

**KU258198:** *Actinokineospora bangkokensis* AL1: Bhattacharjee,K. and Joshi,S.R.:16S rRNA:Partial : >1300bp

**KU258199:** *Actinomadura* sp. AL2: Bhattacharjee,K. and Joshi,S.R.:16S rRNA: Partial : >1300bp

**KU258200:** *Actinomadura scrupuli* AL3: Bhattacharjee,K. and Joshi,S.R.:16S rRNA: Partial :>1300bp

**KU258201:** *Actinoplanes nipponensis* AL4: Bhattacharjee,K. and Joshi,S.R.:16S rRNA: : Partial:>1300bp

**KU258202:** *Actinopolyspora righensis* AL5: Bhattacharjee,K. and Joshi,S.R.: 16S rRNA : Partial : >1300bp

**KU258203:** *Actinopolyspora saharensis* AL6 : Bhattacharjee,K. and Joshi,S.R.: 16S rRNA : Partial : > 1300bp

**KU258204**: *Actinospica acidiphila*AL7 : Bhattacharjee,K. and Joshi,S.R.: 16S rRNA: Partial : > 1300bp

**KU258205**: *Angustibacter luteus* AL8 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258206**:*Arthrobacter* sp. AL9 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258207**: *Arthrobacter agilis* AL10 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258208**: *Arthrobacter* sp. AL11 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

 **KU258209**:*Auraticoccus monumenti* AL12Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258210:** *Beutenbergia cavernae* AL13 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258211**: *Blastococcus jejuensis* AL14 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > 1300bp

**KU258212**: *Blastococcus saxobsidens*  AL15 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258213**: *Blastococcus* sp. AL16 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258214**: *Conexibacter woesei* AL17 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > : 1300bp

**KU258215**: *Dietzia natronolimnaea* AL18 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258216**: *Geodermatophilus* sp. AL19 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258217**: *Geodermatophilus siccatus* AL20 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > 1300bp

**KU258218:***Geodermatophilus tzadiensis* AL21 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > 1300bp

**KU258219:** *Granulicoccus phenolivorans* AL22 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > 1300bp

**KU258220**: *Kibdelosporangium aridum* AL23 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > 1300bp

**KU258221**: *Kitasatospora cheerisanensis* AL24 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258222**: *Micromonospora endolithica* AL25 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > : 1300bp

**KU258223**: *Micromonospora* sp. AL26 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > : 1300bp

**KU258224**: *Modestobacter marinus* AL27 : Bhattacharjee,K. and Joshi,S.R. : : 16S rRNA : Partial : >1300bp

**KU258225**: *Nocardioides albertanoniae* AL28 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258226**: *Nocardioides* sp. AL29 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258227**: *Pseudokineococcus marinus* AL30 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258228**: *Pseudonocardia antarctica* AL31 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > 300bp

 **KU258229**: *Pseudonocardia antitumoralis* AL32 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

 **KU258230:** *Pseudonocardia sediminis* AL33 : Bhattacharjee,K. and Joshi,S.R. : : 16S rRNA : Partial : >1300bp

 **KU258231**: *Rhodococcus baikonurensis* AL34 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258232**: *Rhodococcus canchipurensis* AL35 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : > 1300bp

 **KU258233**: *Rhodococcus kroppenstedtii*  AL37 : Bhattacharjee,K. and Joshi,S.R : 16S rRNA ; Partial : > 1300bp

**KU761254**: *Rhodococcus jostii* AL36 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258234**: *Rhodococcus nanhaiensis* AL38 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258235:** *Rubrobacter radiotolerans* AL39 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258236**: *Saccharothrix algeriensis* AL40 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258237**: *Saccharothrix lopnurensis* AL41 : Bhattacharjee,K. and Joshi,S.R. : : 16S rRNA : Partial : >1300bp

**KU258238**: *Sporichthya polymorpha* AL42 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258239:***Sporichthya* sp. AL43 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258240**: *Streptoalloteichus tenebrarius* AL44 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258241**: *Streptomyces aureofaciens* AL45 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258242**: *Streptomyces avermitilis* AL46 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258243**: *Streptomyces gramineus* AL47 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA :Partial :> : 1300bp

 **KU258244**: *Streptomyces graminisoli* AL48 : Bhattacharjee,K. and Joshi,S.R. : : 16S rRNA : Partial :>1300bp

**KU258245**: *Streptomyces hypolithicus* AL49 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258246**: *Streptomyces* sp. AL50 : Bhattacharjee,K. and Joshi,S.R. : : 16S rRNA : Partial :>1300bp

**KU258247**: *Streptomyces* sp. AL51 : Bhattacharjee,K. and Joshi,S.R. : : 16S rRNA : Partial :>1300bp

**KU258248**: *Thermopolyspora flexuosa* AL52 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258249:** *Tsukamurella paurometabola* AL53 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258250**: *Streptomyces luteireticuli* CB4 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258251**: *Streptomyces nigrogriseolus* LT1 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258252**: *Acinetobacter guangdongensis* BL1 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

 **KU258253**: *Acinetobacter johnsonii* BL2 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

 **KU258254**: *Amaricoccus tamworthensis* BL3 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258255**: *Amaricoccus tamworthensis* BL4 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258256**: *Anaerococcus octavius* BL5 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :> : 1300bp

**KU258257**: *Bacillus cereus* BL6 : : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258258**: *Fictibacillus barbaricus* BL7 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA :Partial :>1300bp

**KU258259**: *Bacillus drentensis* BL8 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258260**: *Bacillus megaterium* BL9 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258261**: *Bacillus simplex* BL10 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258262**: *Bacillus niacini* BL11 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258263**: *Belliella pelovolcani* BL12 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

 **KU258264**: *Desulfomicrobium macestii* BL13 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258265**: *Desulfovibrio alaskensis* BL14 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258266**: *Dyadobacter alkalitolerans* BL15 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258267**: *Emticicia sediminis* BL16 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258268**: *Candidatus Entotheonella* palauensis BL17 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258269**: *Flexibacter flexilis* BL18 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258270**: *Massilia timonae* BL19 : Bhattacharjee,K. and Joshi,S.R. : : 16S rRNA : Partial :>1300bp

**KU258272**: *Methylocystis bryophila* BL21 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :> 1300bp

 **KU258273**: *Microbulbifer arenaceous* BL22 : Bhattacharjee,K. and Joshi,S.R. : : 16S rRNA : Partial :> 1300bp

 **KU258274:** *Nitrospira moscoviensis* BL23 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :> 1300bp

**KU258275**: *Nordella oligomobilis* BL24 : : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :> : 1300bp

**KU258276:** *Novosphingobium subterraneum* BL25 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258277**: *Pantoea agglomerans* BL26 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258278**: *Paracraurococcus ruber* BL27 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258279**: *Pseudomonas migulae* BL28 : : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :> 1300bp

 **KU258280**: *Pseudomonas xinjiangensis* BL29 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258281**: *Psychrobacter aestuarii* BL30 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial :>1300bp

**KU258282**: *Rheinheimera perlucida* BL31 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258283:***Rhodoplanes elegans* BL32 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : : Partial : >1300bp

**KU258284**: *Serratia ureilytica* BL33 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258285**: *Shewanella* sp. BL34 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258286**: *Variovorax paradoxus* BL35 : : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258287**: *Bacillus aryabhattai* DG12 : : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : : Partial : >1300bp

**KU258288**: *Bacilluscereus* BK4 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258289**: *Bacillus cereus* DG1 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258290**: *Bacillus* sp. DT21 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258291**: *Bacillus pseudomycoides* DT11 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

110.**KU761252**: *Bacillus* sp. AM2 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU761253**: *Bacillus* sp. CB2 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258292**: *Bacillus subtilis* GP2 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258293**: *Burkholderiacenocepacia* DG11 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258294**: *Burkholderia* sp. DG7 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**KU258295**: *Pseudomonas* sp. BM1 : Bhattacharjee,K. and Joshi,S.R. : 16S rRNA : Partial : >1300bp

**HQ728330**: *Lactococcus lactis* : Sharmila Thokchom and SR Joshi : : 16S rRNA : Partial : : 1444bp :

**HQ728331**: *Weissella hellenica*: Sharmila Thokchom and SR Joshi : 16S rRNA : Partial : 1467bp :

**HQ728333**: *Lactobacillus plantarum*: Sharmila Thokchom and SR Joshi : 16S rRNA : Partial : 1460bp :

**HQ728324**: *Enterococcus durans* : Sharmila Thokchom and SR Joshi : 16S rRNA : Partial : 1470bp :

**JN104057**: *Enterococcus casseliflavus* : : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1323bp

**JN029837**: *Vagococcus lutrae*: SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1357bp :

**JN029833**: *Vagococcus fluvialis*: SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1306bp :

**JF827598:***Weissella thailandensis*: SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1467bp :

**HQ728335:***Lactobacillus curvatus*: Sharmila Thokchom and SR Joshi : 16S rRNA : Partial : 1466bp :

**JN029838**: *Lactococcus garvieae* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1338bp :

**HQ728336**: *Lactococcus lactis*: : Sharmila Thokchom and SR Joshi : : 16S rRNA : Partial : : 1453bp :

**HQ728325:** *Vagococcus lutrae*: Sharmila Thokchom and SR Joshi : : 16S rRNA : Partial : : 1503bp :

**JN029835:** *Staphylococcus equorum* : Sharmila Thokchom and SR Joshi : 16S rRNA : : Partial : 1268bp :

**HQ728328**: *Staphylococcus cohnii* : Sharmila Thokchom and SR Joshi : 16S rRNA : Partial : 1455bp :

**JN104059:***Staphylococcus sciuri* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1360bp :

**JN104058:** *Staphylococcus lentus*: SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1420bp :

**HQ728327:** *Bacillus tequilensis* : : Sharmila Thokchom and SR Joshi : 16S rRNA : Partial : 1471bp :

**HQ728329:***Bacillus methylotrophicus* : Sharmila Thokchom and SR Joshi : 16S rRNA : Partial : : 1463bp :

**JN104061:** *Rummeliibacillus stabekisii* : : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1341bp :

**JN029834:** *Corynebacterium stationis* : : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1002bp :

**JN029832:** *Proteus mirabilis* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : : 1017bp :

**JQ770189:** *Vagococcus fluvialis* : SR Joshi and Sharmila Thokchom : : 16S rRNA : Partial : 1100bp :

**JQ770190:***Vagococcus carniphilus* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1052bp :

 **JQ770191:** *Vagococcus fluvialis* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1372bp :

**JQ770192:***Trichococcus flocculiformis* : SR Joshi and Sharmila Thokchom : 16S rRNA :Partial : 1322bp :

**JQ770193:** *Trichococcus patagoniensis* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1085bp :

**JQ770194:** *Proteus mirabilis* : SR Joshi and Sharmila Thokchom : 16S rRNA : : Partial : 1377bp :

**JQ770195:** *Enterococcus casseliflavus* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : : 1318bp :

**HQ728326:** *Bacillus tequilensis* : : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1438bp :

**HQ728332:** *Lactococcus lactis* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1441bp :

**HQ728334**: *Lactobacillus pentosus* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1461bp :

**JN029831:** *Enterococcus canis* : : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1339bp :

**JN029836:** *Staphylococcus equorum* : SR Joshi and Sharmila Thokchom : 16S rRNA : : Partial : 1227bp :

**JN104056:** *Staphylococcus lentus* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1380bp :

**JN104060:** *Enterococcus faecium* : SR Joshi and Sharmila Thokchom : 16S rRNA : Partial : 1265bp :

**KM282281:** *Formitopsis ostreiformis* : M Borthakur, and SR Joshi : : ITS : partial : 788bp

**KM282282:** *Russula foetens* : M Borthakur and SR Joshi : ITS : partial : 801bp

**KM282283**: *Mycena galericulata* : M Borthakur and SR Joshi : ITS : partial : 640bp

**KM282284:** *Hypholoma fasciculare* : M Borthakur and SR Joshi : ITS : partial : 644bp

**KM282285**:*Panus conchatus* : M Borthakur and SR Joshi : ITS : partial : 583bp

**KM282286**: *Galerina* sp. : M Borthakur and SR Joshi : ITS : partial : 795bp

**KM282287**: *Lactifluus glaucescens* : M Borthakur and SR Joshi : ITS : partial : 709bp

**KM282288**: *Trichaptum biforme* : M Borthakur and SR Joshi : ITS : : partial : 759bp

**KP843880:** *Russula variata* : M Borthakur and SR Joshi : ITS : partial : 765bp

**KP843881**:*Campanophyllum proboscideum* : M Borthakur,and SR Joshi : ITS : partial : 501bp

**KP843882**:*Trichaptum biforme* : M Borthakur and SR Joshi : ITS : partial : 605bp

**KP843883:** *Baorangia pseudocalopus* : M Borthakur and SR Joshi : ITS : partial : 603bp

**KP843884:** *Echinoderma asperum :* M Borthakur and SR Joshi : ITS : partial : 725bp

 **KP877447:** *Micromphale foetidum*: M Borthakur and SR Joshi : ITS : partial : 871bp

**KM983609:** *Lentinus tuber-regium* : AR Das, AK Saha, P Das, SR Joshi and M Borthakur : ITS : partial : 604bp

**KM983610:** *Microcybe gigantean* : AR Das, AK Saha, P Das, SR Joshi and M Borthakur : ITS : partial : 567bp

**KX831664:** *Trichoderma strigosellum*: M Borthakur, J Gogoi, and SR Joshi : ITS : partial : 573bp

**KX831667:** *Ganoderma australe* **:** M Borthakur, S Sangma, and SR Joshi : ITS : partial : 506bp

**KX011029:** *Pseudomonas* sp. : D Kalita and SR Joshi : 16S rRNA: full : 1493bp

**KX831665:** *Penicillium citrinum :*D. Bareh, D Patra and S.R. Joshi : ITS : partial : 580bp

**KX831666** *: Myrothecium verrucaria*D. Bareh, D Patra and S.R. Joshi : ITS : partial : 568bp

**JN600358** : *proteobacterium* : Kumar R, Joshi SR : 16S rRNA : Partial : -285bp

**JN600359 :** *Acidobacteria bacterium*: Kumar R, Joshi SR : 16S rRNA : Partial : -278bp

**JN600360 :** *proteobacterium :* : Kumar R, Joshi SR : 16S rRNA : partial : -285bp

**JN600361 :** *proteobacterium* : : Kumar R, Joshi SR : 16S rRNA : partial : -285bp

**JN600362.1 :** *proteobacterium*: KumarR andJoshiSR : 16SrRNA : partial : -285bp

**JN600363.1 :***Acidobacteriabacterium* : : 16SrRNA : partial : -285bp

**JN600364.1 :** *proteobacterium* : Kumar R and JoshiSR : 16SrRNA : partial :

**JN600365.1**: *Acidobacteriabacterium* : Kumar R and Joshi SR : 16SrRNA : partial : -285bp

**JN600366.1**: *Acidobacteriabacterium* : Kumar R and Joshi SR : 16SrRNA : partial : -285bp

**JN600367.1**: *Firmicutesbacterium* : Kumar R and Joshi SR : 16SrRNA : partial : -285bp

**JN600368.1** : *proteobacterium* : Kumar R and Joshi SR : 16SrRNA : partial : -286bp

 **JN600369.1**: *proteobacterium* : Kumar R and Joshi SR : 16SrRNA : partial : -286bp

**JN600370.1** : *Acidobacteriabacterium* : Kumar R and Joshi SR : 16SrRNA : partial : -274bp

**JN600371.1** : *proteobacterium* : KumarR and Joshi SR : 16SrRNA : partial : -285bp

**JN600372.1**: *proteobacterium* : Kumar R and Joshi SR : 16SrRNA : partial : -285bp

**JN600373.1**: *proteobacterium* : Kumar R and Joshi SR : 16SrRNA : partial : -286bp

**JN600374.1**: *proteobacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -290bp

**JN600375.1**: *proteobacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -282bp

**JN600376.1**: *Firmicutesbacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -256bp

**JN600377.1**: *proteobacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -286bp

**JN600378.1**: *proteobacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -286bp

**JN600379.1**  : *proteobacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -285bp

**JN600380.1**: *proteobacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -286bp

**JN600381.1**: *proteobacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -224bp

**JN600382.1**: *Chloroflexibacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -285bp

**JN600383.1**: *Acidobacteriabacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -285bp

**JN600384.1**: *Acidobacteriabacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -285bp

**JN600385.1**: *Acidobacteriabacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -286bp

**JN600386.1**: *proteobacterium* : Kumar R and Joshi SR: 16SrRNA : partial : -286bp

**JN600386.1** : *Proteobcaterium* : Kumar R and Joshi SR : 16S rRNA : partial : -285bp

**JN600387.1** : *Acidobacteria bacterium* : Kumar R and Joshi SR: 16S rRNA : partial : -285bp

**JN600388.1** : *Proteobcaterium*: Kumar R and Joshi SR: 16S rRNA : partial : -285bp

**JN600389.1** : *Acidobacteria bacterium* : Kumar R and Joshi SR : 16S rRNA : partial : -285bp

**JN600390.1** : *Verrucomicrobium* sp. : Kumar R and Joshi SR: 16S rRNA : partial : -285bp

**JN600391.1** : *Proteobcaterium* : Kumar R and Joshi SR: 16S rRNA : partial : -285bp

**JN600392.1** : *Acidobacteria bacterium* : Kumar R and Joshi SR: 16S rRNA : partial : -285bp

**JN600393.1** : *Acidobacteria bacterium* : Kumar R and Joshi SR: 16S rRNA : partial : -285bp

**JN600394.1** : *Acidobacteria bacterium* : Kumar R and Joshi SR: 16S rRNA : partial : -285bp

**JN600395.1** : *Proteobcaterium*: Kumar R and Joshi SR: 16S rRNA : partial : -285bp

**JN600396.1***: Proteobcaterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600397.1** : *Actinobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -286bp

**JN600398.1** : *Firmicutes bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600399.1** : *Proteobcaterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600400.1** : *Proteobcaterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600401.1** : *Firmicutes bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600402.1** : *Firmicutes bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600403.1** : *Proteobcaterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600404.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -290bp

**JN600405.1** : *Acidobacteria bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600406.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600407.1** : *Chloroflexi bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -283bp

**JN600408.1** : *Proteobcaterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -290bp

**JN600409.1** : *Acidobacteria bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -290bp

**JN600410.1** : *Firmicutes bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600411.1** : *Actinobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600412.1** : *Acidobacteria bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600413.1** : *Actinobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600414.1** : *Actinobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600415.1** : *Acidobacteria bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -290bp

**JN600416.1** : *Verrucomicrobium* sp. : Kumar R, and Joshi SR : 16S rRNA : partial : -290bp

**JN600417.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600418.1** : *Acidobacteria bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600419.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600420.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600421.1** : *Acidobacteria bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -290bp

**JN600422.1** : *Acidobacteria bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -290bp

**JN600423.1** : *Proteobcaterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600424.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -283bp

**JN600425.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -283bp

**JN600426.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -288bp

**JN600427.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -283bp

**JN600428.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -283bp

**JN600429.1** : Chlorobi bacterium : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600430.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600431.1** : Firmicutes bacterium : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600432.1** : Acidobacteria bacterium : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600433.1** : Acidobacteria bacterium : Kumar R, and Joshi SR : 16S rRNA : partial : -290bp

**JN600434.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600435.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600436.1** : Firmicutes bacterium : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600437.1** : Firmicutes bacterium : Kumar R, and Joshi SR : 16S rRNA : partial : -285bp

**JN600438.1** : *Proteobacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : -264bp

**JN600439.1** : *Acidobacteria bacterium* : Kumar R, and Joshi SR : 16S rRNA : partial : 264bp

**JX040437** : *Sphingobacterium kitahiroshimense* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040438** : *Bacillus* sp. : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040439** : *Pseudomonasagri*  : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040440** : *Sphingobacterium faecium* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040441** : *Achromobacter xylosoxidans* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040442** : *Iodobacter fluviatilis* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040443** : *Bacillus cereus* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040444** : *Pseudomonas* sp. : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040445** : *Pseudomonasagri*  : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040446** : *Lysinibacillus parviboronicapiens*  : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX040447** : *Bacillus amyloliquefaciens* subsp. *Amyloliquefaciens* : S.R.Joshi & S.Banerjee :16S rRNA : ~1500

**JX144942** : *Kocuria rosea* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144943** : *Lysinibacillus macroides* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144944** : *Pseudomonasagri*  : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144945** : *Pseudomonasgessardii* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144946** : *Pseudomonasvranovensis* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144947** : *Pseudomonaschlororaphis* subsp. Aurantiaca : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144948** : *Pseudomonastaiwanensis* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144949** : *Staphylococcus saprophyticus* subsp. bovis : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144950** : *Acinetobacter johnsonii* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144951** : *Bacillus vallismortis* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144952** : *Pseudomonasmosselii* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144953** : *Bacillus subtilis* subsp. Inaquosorum : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144954** : *Kurthia gibsonii* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144955** : *Bacillus vallismortis* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144956** : *Aeromonas hydrophila* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144957** : *Flavobacterium chungangense* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144958** : *Staphylococcu*s equorum subsp. Equorum : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144959** : *Pseudomonas* monteilii : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX144960** : *Pseudomonas* alcaligenes : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX298811** : *Ensifer adhaerens* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JX298812** : *Bacillus halodurans* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**KF515731** : *Bacillus thuringiensis* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**KF515732** : *Bacillus circulans* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**KF515733** : *Paenibacillus massiliensis* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**KF515734** : *Brevibacterium frigoritolerans* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**KF515735** : *Bacillus isronensis* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**KF515736** : *Bacillus cereus* : S.R.Joshi & S.Banerjee : 16S rRNA : Partial : ~1500

**JN408709** : *Beauveria* sp. : Joshi,S.R. and Nath,A. : 18S rRNA : partial : 746 bp

**JN408710** : *Eladia* sp. : Joshi,S.R. and Nath,A. : 18S rRNA : partial : 747bp

**JN408711** : *Bulgaria* sp. : Joshi,S.R. and Nath,A. : 18S rRNA : partial : 666bp

**JN408712** : *Glomus* sp. : Joshi,S.R. and Nath,A. : 18S rRNA : partial : 699bp

**JN408713** : *Penicillium* sp. : Joshi,S.R. and Nath,A. : 18S rRNA : partial : 559bp

**JN247756** : *Phomopsis* sp. : Joshi,S.R., Nath,A. and Devi,L.S. : 18S rRNA : partial : 623bp

**JQ256456** : *Colletotrichum gloeosporioides* : Joshi,S.R., Das,S. and Nath,A. : 18S rRNA : partial : 521bp

**JQ256457** : *Colletotrichum gloeosporioides* : Joshi,S.R., Das,S. and Nath,A. : 18S rRNA : partial : 541bp

**JQ256458** : *Colletotrichum gloeosporioides* : Joshi,S.R., Das,S. and Nath,A. : 18S rRNA : partial : 514bp

**JQ256459** : *Penicillium* sp. : Joshi,S.R., Das,S. and Nath,A. : 18S rRNA : partial : 659bp

**JQ256460** : *Colletotrichum gloeosporioides* : Joshi,S.R., Das,S. and Nath,A. : 18S rRNA : partial : 586bp

**JQ256461** : *Colletotrichum* sp. : Joshi,S.R., Das,S. and Nath,A. : 18S rRNA : Partial : 661bp

**JQ256462** : *Colletotrichum* sp. : Joshi,S.R., Das,S. and Nath,A. : 18S rRNA : Partial : 641bp

**JQ256463** : *Aspergillus awamori* : Joshi,S.R., Das,S. and Nath,A. : 18S rRNA : Partial : 616bp

**KF928279** : *Epicoccum sorghinum* : Joshi,S.R. and Nath,A. : ITS : Partial : 446bp

**KF928280** : *Phomopsis asparagi* : Joshi,S.R. and Nath,A. : ITS : Partial : 552bp

**KF928281** : *Colletotrichum gloeosporioides* : Joshi,S.R. and Nath,A. : ITS : Partial : 553bp

**KF928284** : *Colletotrichum gloeosporioides* : Joshi,S.R. and Nath,A. : ITS : Partial : 552bp

**KM282291**: *Colletotrichum gloeosporioides* : Joshi,S.R. and Nath,A. : ITS : Partial : 554bp

**KF928283** : *Byssochlamys spectabilis* : Joshi,S.R. and Nath,A. : ITS : Partial : 677bp

**KF928286** : *Corynespora cassiicola* : Joshi,S.R. and Nath,A. : ITS : Partial : 533bp

**KF928287** : *Corynespora cassiicola* : Joshi,S.R. and Nath,A. : ITS : Partial : 534bp

**KF928288** : *Corynespora cassiicola* : Joshi,S.R. and Nath,A. : ITS : Partial : 534bp

**KF928292** : *Corynespora cassiicola* : Joshi,S.R. and Nath,A. : ITS : Partial : 535bp

**KF928289** : *Calonectria eucalypti* : Joshi,S.R. and Nath,A. : ITS : Partial : 522bp

**KF928290** : *Calonectria eucalypti* : Joshi,S.R. and Nath,A. : ITS : Partial : 518bp

**KF928285** : *Xylaria* sp. : Joshi,S.R. and Nath,A. : ITS : Partial : 556bp

**KF928291** : *Aspergillus niger* : Joshi,S.R. and Nath,A. : ITS : Partial : 723bp

**KF928293** : *Colletotrichum acutatum* : Joshi,S.R. and Nath,A. : ITS : Partial : 561bp

**KM282289**: *Glomerella magna* : Joshi,S.R. and Nath,A. : ITS : Partial : 547bp

**KM282290**: *Talaromyces stollii* : Joshi,S.R. and Nath,A. : ITS : Partial : 563bp

**KP178686** : *Epicoccum sorghinum* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 598bp

**KP178687** : *Phomopsis asparagi* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 601p

**KP178688** : *Colletotrichum gloeosporioides* : Joshi,S.R. and Nath,A. : (PKS) : Partial cds : 642bp

**KP178689** : *Colletotrichum gloeosporioides* : Joshi,S.R. and Nath,A. : (PKS) : Partial cds : 598bp

**KP178690** : *Corynespora cassiicola* : Joshi,S.R. and Nath,A. : PKS: Partial cds : 318bp

**KP178691** : *Corynespora cassiicola* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 568bp

**KP178692** : *Corynespora cassiicola* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 565bp

**KP178693** : *Calonectria eucalypti* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 655bp

**KP178694** : *Calonectria eucalypti* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 628bp

**KP178695** : *Aspergillus niger* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 649bp

**KP178696** : *Corynespora cassiicola* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 631bp

**KP178697** : *Colletotrichum acutatum* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 329bp

**KP178698** : *Talaromyces stollii* : Joshi,S.R. and Nath,A. :PKS : Partial cds : 666bp

**KP178699** : *Colletotrichum gloeosporioides* : Joshi,S.R. and Nath,A. : PKS : Partial cds : 583bp

**JN660056** : *Klebsiella variicola* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,340bp

**JN660057** : *Staphylococcus simulans* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,335bp

**JN660058** : *Enterococcus faecalis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,404bp

**JN660060** : *Staphylococcus gallinarum* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,397bp

**JX026015** : *Vagococcus carniphilus* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,475bp

**JX026016** : *Enterococcus saccharolyticus* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,473bp

**JX026017** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,472bp

**JX026018** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,469bp

**JX026019** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,472bp

**JX026020** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,475bp

**JX026021** : *Vagococcus carniphilus* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,474bp

**JX026022** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,476bp

**JX026023** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,472bp

**JX026024** : *Vagococcus carniphilus* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,479bp

**JX026025** : *Enterococcus lactis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,469bp

**JX026026** : *Vagococcus carniphilus* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,473bp

**JX026027** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,477bp

**JX026028** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,468bp

**JX026029** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,470bp

**JX026030** : *Vagococcus carniphilus* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,469bp

**JX026031** : *Vagococcus fluvialis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,471bp

**JX026032** : *Bacillus siamensis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,465bp

**JX026033** : *Leuconostoc holzapfelii* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,465bp

**JX026035** : *Leuconostoc holzapfelii* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,464bp

**JX026036** : *Leuconostoc holzapfelii* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,465bp

**JX026037** : *Leuconostoc lactis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,466bp

**JX026009** : *Brevundimonas Vesicularis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,374bp

**JX026010** : *Sphingomonas dokdonensis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,396bp

**JX026011** : *Brevundimonas nasdae* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,378bp

**JX026012** : *Acetobacter indonesiensis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,409bp

**JX026013** : *Acetobacter indonesiensis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,408bp

**JX026014** : *Acetobacter indonesiensis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,412bp

**JX026034** : *Leuconostoc lactis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,469bp

**JN660075** : *Staphylococcus epidermidis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,312bp

**JX026003** : *Enterococcus faecalis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,436bp

**KF186666** : *Lactobacillus pentosus* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,447bp

**JN660061** : *Lactobacillus fermentum* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,396bp

**JN660062** : *Staphylococcus condimenti* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,450bp

**JN660063** : *Staphylococcus saprophyticus*subsp. Bovis : Joshi,S.R. and Koijam,K. : 16S r RNA: Partial : 1,482bp

**JN660064** : *Bacillus licheniformis* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,418bp

**JF910013** : *Enterococcus casseliflavus* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,482bp

**JF910014** : *Enterococcus casseliflavus* : Joshi,S.R. and Koijam,K : 16S r RNA : Partial : 1,468bp

**JF910015** : *Enterococcus durans* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,464bp

**JF910016** : *Enterococcus durans* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,518bp

**JX026006** : *Staphylococcus sciuri* subsp. sciuri : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,466bp

**JX026007** : *Staphylococcus warneri* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,470bp

**JN660068** : *Bacillus methylotrophicus* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,326bp

**JN660069** : *Staphylococcus sciuri* subsp. sciuri : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,434bp

**JN660070** : *Vagococcus lutrae* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,459bp

**JN660071** : *Staphylococcus sciuri* subsp. sciuri : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,464bp

**JF910017** : *Staphylococcus sciuri* subsp. sciuri : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,468bp

**JF910020** : *Bacillus siamensis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,456bp

**JN660065** : *Bacillus vallismortis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,469bp

**JN660066** : *Bacillus safensis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,428bp

**JN660067** : *Bacillus tequilensis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,445bp

**JN660072** : *Lactobacillus brevis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,439bp

**JF910018** : *Bacillus aerophilus* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,456bp

**KF186667** : *Psychrobacter pulmonis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,451bp

**KF186668** : *Enterococcus faecalis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,444bp

**KF186669** : *Pisciglobus halotolerans* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,444bp

**KF186670** : *Enterobacter cancerogenus* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,418bp

**KF186671** : *Vitreoscilla stercoraria* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,433bp

**KF186672** : *Pantoea rodasii* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,410bp

**JX026004** : *Staphylococcus haemolyticus* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,466bp

J**X026005** : *Lactobacillus pentosus* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,487bp

**KF186664** : *Staphylococcus cohnii* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,437bp

**KF186665** : *Bacillus safensis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,435bp

**JF910019** : *Enterococcus casseliflavus* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,411bp

**JX026008** : *Brachybacterium sacelli* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,323bp

**JN860201** : *Lactobacillus fermentum* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 855bp

**JN660059** : *Lactobacillus pobuzihii* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1,437bp

**JN860202** : *Staphylococcus epidermis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 700bp

**JN860203** : *Bacillus altitudinis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 702bp

**JN860204** : *Staphylococcus epidermis* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 699bp

**JN860205** : *Lactobacillus fermentum* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 678bp

**JN860206** : *Brachybacterium paraconglomeratum* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 620bp

**JN860207** : *Bacillus clausii* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 821bp

**JN860208** : *Bacillus subtilis* subsp. subtilis : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 703bp

**JN860209** : *Staphylococcus arlettae* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 702bp

**JN660073** : *Bacillus thioparans* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1440bp

**JN660074** : *Lactobacillus pobuzihii* : Joshi,S.R. and Koijam,K. : 16S r RNA : Partial : 1377bp

**JN660076** : *Lactobacillus acidipiscis* : Joshi,S.R. and Koijam,K. : 16S rRNA : Partial : 121bp

**KX896657**:*Bacillus subtilis* subsp.*inaquosorum*SK22: AL Ka-ot,S Banerjee, G Haldar, SR Joshi:16s rRNA: 1417

**KX896658** : *Bacillus cereus* SK44 : AL Ka-ot, S Banerjee, G Haldar, SR Joshi : 16s rRNA : partial : 1415bp

**HM448979** : *Pseudomonas* aeruginosa : Joshi,S.R., Sarma,B., Kumar,R. and Acharya,C. : 16s rRNA : 1390bp

**HM448980** : *P. aeruginosa* : Joshi,S.R., Sarma,B.,Acharya,and CKumar,R. : 16s rRNA : partial : 1397bp

**HM448981** : *P. aeruginosa* : Joshi,S.R., Sarma,B.,Acharya,and CKumar,R. : 16s rRNA : partial : 1397bp

**HM448982** : *P. aeruginosa* : Joshi,S.R., Sarma,B.,Acharya,and CKumar,R. : 16s rRNA : partial : 1385bp

**HM448983** : *P. aeruginosa* : Joshi,S.R., Sarma,B.,Acharya,and CKumar,R. : 16s rRNA : partial : 1397bp

**HM448984** : *P. aeruginosa* : Joshi,S.R., Sarma,B.,Acharya,and CKumar,R. : 16s rRNA : partial : 1400bp

**HM448985** : *Comamonas testosteroni* : Joshi,S.R., Sarma,B.,Acharya,and CKumar,R. : 16s rRNA : 1387bp

**HM448986** : *P. poae* : Joshi,S.R., Sarma,B.,Acharya,and CKumar,R. : 16s rRNA : partial : 1408bp

**HM448987** : *P. lurida* : Joshi,S.R., Sarma,B.,Acharya,and CKumar,R. : 16s rRNA : partial : 1404bp

**JN247761** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1402bp

**JN247762** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1437bp

**JN247763** : *P. mosselii* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1338bp

**JN247764** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1418bp

**JN247765** : *P. lurida* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1396bp

**JN247766** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1357bp

**JN247767** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1386bp

**JN247768** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1385bp

**JN247769** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1382bp

**JN247770** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1365bp

**JN247771** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1395bp

**JN247772** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1381bp

**JN247773** : *P. aeruginosa* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1402bp

**JN247774** : *P. putida* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1400bp

**JN247775** : *P. simae* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1364bp

**JN247776** : *P. koreensis* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1307bp

**JQ074037** : *P. lurida* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1318bp

**JQ074038** : *P. palleroniana* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1301bp

**JQ074039** : *P. palleroniana* : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1318bp

**HM448988** : *Alcaligenes* sp : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1399bp

**HM448989** : *Alcaligenes* sp : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1399bp

**HM448990** : *Ochrobactrum* sp : Joshi,S.R., Sarma,B..and Acharya,C : 16s rRNA : partial : 1328bp

**HM448991** : *Brevundimonas diminuta* : Joshi,S.R., Sarma,B.,Kumar,R. and Acharya,C. : 16s rRNA : 1337bp

**HM448992** : *Serratia* sp. : Joshi,S.R., Sarma,B.,Kumar,R. and Acharya,C. : 16s rRNA : partial : 1446bp

**HM448993** : *Serratia* sp. : Joshi,S.R., Sarma,B.,Kumar,R. and Acharya,C. : 16s rRNA : partial : 1452bp

**HM991825** : *Ochrobactrum* sp : Joshi,S.R., Sarma,B.,Kumar,R. and Acharya,C. : 16s rRNA : partial : 1345bp

**HM991826** : *Achromobacter* sp : Joshi,S.R., Sarma,B.,Kumar,R. and Acharya,C. : 16s rRNA : partial : 1405bp

**HM991827** : *Achromobacter* sp : Joshi,S.R., Sarma,B.,Kumar,R. and Acharya,C. : 16s rRNA : partial : 1403bp

**HQ696505** : *S. nematodiphila* : Joshi,S.R., Sarma,B.,Kumar,R. and Acharya,C. : 16s rRNA : partial : 1361bp

**HQ696506**:*S. marcescens*subsp.*sakuensis*:Joshi SR, Sarma,B,Kumar,R and Acharya,C:16s rRNA: 1399bp

**JF804769** : *Paenochrobactrum* sp. : Joshi,S.R., Sarma,B.,and Acharya,C. : 16s rRNA : partial : 1404bp

**JQ074040** : *Stenotrophomonas maltophilia* : Joshi,S.R., Sarma,B.,and Acharya,C. : 16s rRNA : partial : 1301bp

**JQ074041** : *B. vesicularis* : Joshi,S.R., Sarma,B.,and Acharya,C. : 16s rRNA : partial : 1308bp

**JQ074042** : *S. marcescens* subsp. sakuensis : Joshi,S.R., Sarma,B.,and Acharya,C. : 16s rRNA : partial : 1303bp

**JQ074055** : *S. maltophilia* : Joshi,S.R., Sarma,B.,and Acharya,C. : 16s rRNA : partial : 1331bp

**JQ074056** : *S. maltophilia* : Joshi,S.R., Sarma,B.,and Acharya,C. : 16s rRNA : partial : 1304bp

**HM747949** : *Serratia* sp. : Joshi,S.R., Sarma,B.,and Acharya,C. : 16s rRNA : partial : 1443bp

**HM747950** : *Serratia* sp. : Joshi,S.R., Sarma,B.,and Acharya,C. : 16s rRNA : partial : 1410bp

**JN695728** : *Bacillus subtilis* subsp. *subtilis* : Joshi,S.R., Sarma,B. and Banerjee,S : 16s rRNA : partial : 1287bp

**JN653472** : *Pseudomonas aeruginosa* : Joshi,S.R., Sarma,B. and Banerjee,S : 16s rRNA : partial : 1395bp

**JN653473** : *Achromobacter ruhlandii* : Joshi,S.R., Sarma,B. and Banerjee,S : 16s rRNA : partial : 1384bp

**JN628283** : *Pseudomonasaeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 621bp

**JN247777** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 581bp

**JN247778** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 664bp

**JN628284** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 556bp

**JN418876** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 649bp

**JN418877** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 400bp

**JN628285** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 610bp

**JN418878** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 652bp

**JN418879** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 600bp

**JN247781** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 597bp

**JN418880** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 649bp

**JN418881** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 651bp

**JN418882** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 655bp

**JN628286** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 644bp

**JN247782** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 634bp

**JN418883** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 601bp

**JN418884** : *P. aeruginosa* : Joshi,S.R., Sarma,B.and Acharya,C. : 16-23S rRNA : partial : 664bp

**EU579531.1** : *Penicillium*  cf. verruculosum : Joshi,S.R.,R. Bhagobaty : 18-sr-RNA : partial : 1,155bp

**HM569608.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : ITS : partial : 234bp

**HM569609.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : ITS : partial : 278bp

**HM569610.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : ITS : partial : 122bp

**HM569611.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : ITS : partial : 239bp

**HM569612.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : ITS : partial : 240bp

**HM581667.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : 18-sr-RNA : partial : 746bp

**HM581668.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : 18-sr-RNA : partial : 740bp

**HM581669.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : 18-sr-RNA : partial : 742bp

**HM581670.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : 18-sr-RNA : partial : 748bp

**HM581671.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : 18-sr-RNA : partial : 749bp

**HM596779.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : BT : partial : 1026bp

**HM596780.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : BT : partial : 930bp

**HM596781.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : BT : partial : 1016bp

**HM596782.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : BT : partial : 1019bp

**HM596783.1** : *Fungal* sp. : Joshi,S.R.,R. Bhagobaty : BT : partial : 1029bp

**KT318608** : *Paenibacillus* sp : M. Nongkhlaw, D. Kalita,S.R. Joshi : 16S rRNA : Partial : 1417bp

**KT318609** : *Paenibacillus* sp : M. Nongkhlaw, D. Kalita,S.R. Joshi : 16S rRNA : Partial : 1449bp

**KT318610** : *Paenibacillus* sp : M. Nongkhlaw, D. Kalita,S.R. Joshi : 16S rRNA : Partial : 1435bp

**KT318611** : *Bacillus* sp : M. Nongkhlaw, D. Kalita,S.R. Joshi : 16S rRNA : Partial : 1442bp

**KT318612** : *Paenibacillus* sp : M. Nongkhlaw, D. Kalita,S.R. Joshi : 16S rRNA : Partial : 1426bp

**KT318613** : *Bacillus* sp : M. Nongkhlaw, D. Kalita,S.R. Joshi : 16S rRNA : Partial : 1430bp

**KT318614** : *Paenibacillus* sp : M. Nongkhlaw, D. Kalita,S.R. Joshi : 16S rRNA : Partial : 1435bp

**KT318615** : *Bacillus* sp : M. Nongkhlaw, D. Kalita,S.R. Joshi : 16S rRNA : Partial : 1439bp

**KT318616** : *Paenibacillus* sp : M. Nongkhlaw, D. Kalita,S.R. Joshi : 16S rRNA : Partial : 1439bp

**GQ468395** : *Bacillus* cereus : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1459bp

**GQ468396** : *Bacillus* altitudinis : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1506bp

**GU270571** : *Staphylococcus warneri* : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1460bp

**HQ232299** : *Bacillus* licheniformis : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1428bp

**JF768706.1** : *Arthrobacter* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1408bp

**JF768707.1** : *Arthrobacter* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1435bp

**JF768708.1** : *Arthrobacter* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1428bp

**JF768709.1** : *Arthrobacter* sp : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1436bp

**JF768710.1** : *Bacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1433bp

**JF768711.1** : *Bacillus* halmapalus : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1424bp

**JF768711.1** : *Bacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1422bp

**JF768712.1** : *Bacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1446bp

**JF768713.1** : *Bacillus* halmapalus : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1467bp

**JF768713.1** : *Bacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1467bp

**JF768714.1** : *Bacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1458bp

**JF768715.1** : *Bacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1457bp

**JF768716.1** : Chryseobacterium sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1420bp

**JF768717.1** : *Lysinibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1460bp

**JF768718.1** : *Lysinibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1463bp

**JF768719.1** : *Microbacterium* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1431bp

**JF768720.1** : *Microbacterium* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1419bp

**JF768721.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1455bp

**JF768722.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1461bp

**JF768723.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1500bp

**JF768724.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1462bp

**JF768725.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1466bp

**JF768726.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1457bp

**JF768727.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1469bp

**JF768728.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1459bp

**JF768729.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1465bp

**JF768730.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1462bp

**JF768731.1** : *Paenibacillus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1379bp

**JF768732.1** : *Rhodococcus* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1429bp

**JF768733.1** : *Sphingobacterium* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1343bp

**JF768734.1** : *Sphingobacterium* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA: partial : 1445bp

**JF768735.1** : *Sphingobacterium* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1438bp

**JF768736.1** : *Sphingobacterium* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA: partial : 1414bp

**JF768737.1** : *Sphingobacterium* sp. : Joshi SR,Kumar R,Acharya C : 16S rRNA: partial : 1440bp

**JN164000** : *Lysinibacillus* xylanilyticus : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1425bp

**JN164001** : *Bacillus* halmapalus : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1411bp

**JN164002** : *Lysinibacillus* sphaericus : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial: 1403bp

**JN164003** : *Lysinibacillus* xylanilyticus : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1456bp

**JN164004** : *Bacillus* thuringiensis : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1400bp

**JN164006** : *Paenibacillus* alkaliterrae : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1401bp

**JN164007** : *Lysinibacillus* xylanilyticus : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1397bp

**JN230423** : *Staphylococcus arlettae* : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1455bp

**GQ468397** : *Burkholderia arbores* : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1440bp

**GU270570** : *Stenotrophomonas* maltophilia : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1442bp

**HM747953** : *Pseudomonas* koreensis : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial :1413bp

**HM747951** : *Pseudomonas* koreensis : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial: 1416bp

**HM747952** : *Pseudomonas* ficuserectae : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1405bp

**HQ232300** : *Enterobacter kobei* : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1399bp

**GQ468398** : *Citrobacter freundii* : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1410bp

**GU270572** : *Acinetobacter beijerinckii* : Joshi SR,Kumar R,Acharya C : 16S rRNA : partial : 1439bp

**GU270569** : *Serratia marcescens* subsp. Sakuensis : Joshi SR,Kumar R,Acharya C:16S rRNA : partial :1494bp

**GQ468401** : *Serratia marcescens* subsp. sakuensis :Joshi SR,Kumar R,Acharya C :16S rRNA : partial :1481bp

**GU270568** : *Serratia marcescens* subsp.sakuensis :Joshi SR,Kumar R,Acharya C : 16S rRNA : partial:1485bp

**GQ468400** : *Serratia marcescens* subsp. sakuensis :Joshi SR,Kumar R,Acharya C : 16S rRNA : partial :1482bp

**GU270567** : *Serratia marcescens* subsp.marcescens :Joshi SR,Kumar R,Acharya C:16S rRNA: partial :1439bp

**HM747950**:*Serratia marcescens* subsp. marcescens: Joshi SR,Kumar R,Acharya C:16S rRNA : partial : 1410bp

**HM769816.1** : *Bacillus* cereus : Khaund P, Joshi SR : 16S rRNA : partial : 1479bp

**HM769817.1** : *Bacillus* subtilis : Khaund P, Joshi SR : 16S rRNA : partial : 1480bp

**HQ600965.1** : *Penicillium griseofulvum* : Khaund P, Joshi SR : 18S rRNA : partial : 719bp

**HQ600966.1** : *Talaromyces byssochlamydoides* : Khaund P, Joshi SR : 18S rRNA : partial : 729bp

**HQ600967.1** : *Aspergillus niger* : Khaund P, Joshi SR : 18S rRNA : partial : 736bp

**HQ600968.1** : *Umbelopsis* sp. : Khaund P, Joshi SR : 18S rRNA : partial : 746bp

**HQ600969.1** : *Penicillium charlesii* : Khaund P, Joshi SR : 18S rRNA : partial : 736bp

**HQ600970.1** : *Paecilomyces carneus* : Khaund P, Joshi SR : 18S rRNA : partial : 728bp

**HQ600971.1** : *Umbelopsis*  sp. : Khaund P, Joshi SR : 18S rRNA : partial : 858bp

**HQ600972.1** : *Davidiella* sp. : Khaund P, Joshi SR : 18S rRNA : partial : 716bp

**HQ600973.1** : *Penicillium purpurogenum* : Khaund P, Joshi SR : 18S rRNA : partial : 736bp

**HQ600974.1** : *Aspergillus* sp. : Khaund P, Joshi SR : 18S rRNA : partial : 743bp

**HQ600975.1** : *Penicillium charlesii* : Khaund P, Joshi SR : 18S rRNA : partial : 727bp

**HQ600976.1** : *Penicillium charlesii* : Khaund P, Joshi SR : 18S rRNA : partial : 729bp

**HQ600977.1** : *Penicillium janthinellum* : Khaund P, Joshi SR : 18S rRNA : partial : 732bp

**HQ600978.1** : *Paecilomyces lilacinus* : Khaund P, Joshi SR : 18S rRNA : partial : 730bp

**HQ600979.1** : *Penicillium charlesii* : Khaund P, Joshi SR : 18S rRNA : partial : 729bp

**HQ600980.1** : *Penicillium olsonii* : Khaund P, Joshi SR : 18S rRNA : partial : 731bp

**HQ600981.1** : *Penicillium* sp. : Khaund P, Joshi SR : 18S rRNA : partial : 742bp

**HQ600982.1** : *Aspergillus* nige : Khaund P, Joshi SR : 18S rRNA : partial : 730bp

**HQ600983.1** : *Emericellopsis maritime* : Khaund P, Joshi SR : 18S rRNA : partial : 720bp

**HQ600984.1** : Apiospora sp. : Khaund P, Joshi SR : 18S rRNA : partial : 729bp

**JF927992.1** : *Mucor* sp. : Khaund P, Joshi SR : 18S rRNA : partial : 741bp

**JF927993.1** : *Cladosporium* sp. : Khaund P, Joshi SR : 18S rRNA : partial : 744bp

**JF927994.1** : *Trichoderma* sp. : Khaund P, Joshi SR : 18S rRNA : partial : 707bp

**JF968421.1** : *Penicillium purpurogenum* : Khaund P, Joshi SR : 18S rRNA : partial : 485bp

**JF968422.1** : *Penicillium charlesii* : Khaund P, Joshi SR : 18S rRNA : partial : 521bp

**JF968423.1** : *Absidia glauca* : Khaund P, Joshi SR : 18S rRNA : partial : 762bp

**JF968424.1** : *Fusarium* sp. : Khaund P, Joshi SR : 18S rRNA : partial : 743bp

**JF968425.1** : *Alternaria alternate* : Khaund P, Joshi SR : 18S rRNA : partial : 727bp

**JF968426.1** : *Penicillium*  sp. : Khaund P, Joshi SR : 18S rRNA : partial : 741bp

**JF968427.1** : *Penicillium*  chrysogenum : Khaund P, Joshi SR : 18S rRNA : partial : 736bp

**JF968428.1** : *Emericellopsis maritime* : Khaund P, Joshi SR : 18S rRNA : partial : 742bp

**JF968429.1** : *Absidia glauca* : Khaund P, Joshi SR : 18S rRNA : partial : 755bp

**JF968430.1** : *Penicillium*  sp. : Khaund P, Joshi SR : 18S rRNA : partial : 749bp

**JF968431.1** : *Purpureocillium lilacinum* : Khaund P, Joshi SR : 18S rRNA : partial : 739bp

**JF968432.1** : *Thysanophora penicillioides* : Khaund P, Joshi SR : 18S rRNA : partial : 591bp

**JF968433.1** : *Penicillium purpurogenum* : Khaund P, Joshi SR : 18S rRNA : partial : 743bp

**JF968434.1** : *Thysanophora penicillioides* : Khaund P, Joshi SR : 18S rRNA : partial : 750bp

**JF968435.1** : *Niesslia exilis* : Khaund P, Joshi SR : 18S rRNA : partial : 576bp

**KF293400.1** : *Lactarius deliciosus* : Khaund P, Joshi SR : 18S rRNA : partial : 669bp

**KF293401.1** : *Lactarius volemus* : Khaund P, Joshi SR : 18S rRNA : partial : 673bp

**KF636761.1** : *Cantharellus cibarius* : Khaund P, Joshi SR : ITS : partial : 895bp

**KJ411941.1** : *Turbinellus floccosus* : Khaund P, Joshi SR : 18S rRNA : partial : 663bp

**KJ411942.1** : *Clavulina cristata* : Khaund P, Joshi SR : 18S rRNA : partial : 663bp

**KJ411943.1** : *Lactarius deliciosus* : Khaund P, Joshi SR : 18S rRNA : partial : 744bp

**KJ411944.1** : *Lactarius volemus* : Khaund P, Joshi SR : 18S rRNA : partial : 673bp

**KJ411945.1** : *Cantharellus cibarius* : Khaund P, Joshi SR : 18S rRNA : partial : 659bp

**KJ411946.1** : *Tricholoma viridiolivaceum* : Khaund P, Joshi SR : 18S rRNA : partial : 518bp

**KJ411947.1** : *Inocybe aff*. : Khaund P, Joshi SR : 18S rRNA : partial : 518bp

**KJ411948.1** : *Laccaria vinaceoavellanea* : Khaund P, Joshi SR : 18S rRNA : partial : 750bp

**KJ411949.1** : *Albatrellus ellisii* : Khaund P, Joshi SR : 18S rRNA : partial : 749bp

**KJ411950.1** : *Ramaria maculatipes* : Khaund P, Joshi SR : 18S rRNA : partial : 748bp

**KJ411951.1** : *Turbinellus floccosus* : Khaund P, Joshi SR : ITS : partial : 813bp

**KJ411952.1** : *Clavulina cristata* : Khaund P, Joshi SR : ITS : partial : 726bp

**KJ411953.1** : *Tricholoma viridiolivaceum* : Khaund P, Joshi SR : 18S : partial : 647bp

**KJ411954.1** : *Inocybe aff*. Sphaerospora : Khaund P, Joshi SR : 18S : partial : 700bp

**KJ411955.1** : *Laccaria vinaceoavellanea* : Khaund P, Joshi SR : 18S : partial : 659bp

**KJ411956.1** : *Albatrellus ellisii* : Khaund P, Joshi SR : ITS : partial : 680bp

**KJ411957.1** : *Ramaria maculatipes* : Khaund P, Joshi SR : ITS : partial : 707bp

**KJ411958.1** : *Turbinellus floccosus* : Khaund P, Joshi SR : RNA : partial : 728bp

**KJ411959.1** : *Lactarius volemus* : Khaund P, Joshi SR : RNA : partial : 686bp

**KJ411960.1** : *Cantharellus cibarius* : Khaund P, Joshi SR : RNA : partial : 804bp

**KJ411961.1** : *Tricholoma viridiolivaceum* : Khaund P, Joshi SR : RNA : partial : 766bp

**KJ411962.1** : *Inocybe aff*. Sphaerospora : Khaund P, Joshi SR : RNA : partial : 563bp

**KJ411963.1** : *Albatrellus ellisii* : Khaund P, Joshi SR : RNA : partial : 567bp

**KJ411964.1** : *Ramaria maculatipes* : Khaund P, Joshi SR : RNA : partial : 561bp

**KJ411965.1** : *Turbinellus floccosus* : Khaund P, Joshi SR : RNA : partial : 695bp

**KJ411966.1** : *Clavulina cristata* : Khaund P, Joshi SR : RNA : partial : 638bp

**KJ411967.1** : *Lactarius deliciosus* : Khaund P, Joshi SR : RNA : partial : 733bp

**KJ411968.1** : *Lactarius volemus* : Khaund P, Joshi SR : RNA : partial : 818bp

**KJ411969.1** : *Tricholoma viridiolivaceum* : Khaund P, Joshi SR : RNA : partial : 690bp

**KJ411970.1** : *Inocybe aff*. Sphaerospora : Khaund P, Joshi SR : RNA : partial : 724bp

**KJ411971.1** : *Albatrellus ellisii* : Khaund P, Joshi SR : RNA : partial : 559bp

**KJ411972.1** : *Ramaria maculatipes* : Khaund P, Joshi SR : RNA : partial : 732bp

**JX402416** : *Bacillus* thuringiensis : Joshi,S.R. and Lyngwi,N.A. : 16S r RNA : Partial : 1475bp

**JX402417** : *Lysinibacillus* xylanilyticus : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1470bp

**JX402418** : *Paenibacillus* taichungensis : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1498bp

**JX402419** : *Bacillus* marisflavi : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1488bp

**JX402420** : *Bacillus* mycoides : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1488bp

**JX402421** : *Bacillus* thuringiensis : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1482bp

**JX402422** : *Lysinibacillus parviboronicapiens*  : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 14822bp

**JX402423** : *Bacillus* aryabhattai : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1490bp

**JX402424** : *Bacillus* safensis : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1459bp

**JX402425** : *Bacillus* cereus : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1488bp

**JX402426** : *Bacillus* thuringiensis : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1489bp

**JX402427** : *Bacillus* flexus : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1488bp

**JX402428** : *Bacillus* sonorensis : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1474bp

**JX402429** : *Bacillus* methylotrophicus : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1460bp

**JX402430** : *Viridibacillus arenosi*  : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1486bp

**JX402431** : *Bacillus* psychrosaccharolyticus : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1489bp

**JX402432** : *Bacillus* thuringiensis : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1484bp

**JX402433** : *Bacillus* cereus : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1486bp

**JX402434** : *Bacillus* weihenstephanensis : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1458bp

**JX402435** : *Bacillus* mycoides : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1498bp

**JX402436** : *Bacillus* aryabhattai : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1483bp

**JX402437** : *Bacillus* humi : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1475bp

**JX402438** : *Bacillus* simplex : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1476bp

**JX402439** : *Paenibacillus* tylopili : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1461bp

**JX402440** : *Viridibacillus arvi* : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1491bp

**JX402441** : *Bacillus* methylotrophicus : Joshi, S. R and Lyngwi, N. A : 16S r RNA : Partial : 1451bp

**KF874290** : *Bacillus* thuringiensis SG1 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 837bp

**KF874291** : *Lysinibacillus* xylanilyticus SG2 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 801bp

**KF874292** : *Paenibacillus* taichungensis SG3 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 849bp

**KF874293** : *Bacillus* mycoides SG5 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 792bp

**KF874294** : *Bacillus* thuringiensis SG6 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 801bp

**KF874295** : *Lysinibacillus parviboronicapiens*  SG7 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 801bp

**KF874296** : *Bacillus* safensis SG9 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 804bp

**KF874297** : *Bacillus* cereus SG10 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 840bp

**KF874298** : *Bacillus* thuringiensis SG11 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 837bp

**KF874299** : *Bacillus* sonorensis SG13 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 807bp

**KF874300** : *Bacillus* methylotrophicus SG14 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 795bp

**KF874301** : *Viridibacillus arenosi* SG15 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 801bp

**KF874302** : *Bacillus* thuringiensis SG17 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 837bp

**KF874303** : *Bacillus* cereus SG18 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 840bp

**KF874304** : *Bacillus* weihenstephanensis SG19 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 810bp

**KF874305** : *Bacillus* mycoides SG20 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 792bp

**KF874306** : *Bacillus* humi SG22 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 804bp

**KF874307** : *Paenibacillus* tylopili SG24 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 849bp

**KF874308** : Viridibacillus arvi SG26 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 801bp

**KF874309** : *Bacillus* methylotrophicus SG27 : Joshi, S. R and Lyngwi, N. A : accd : Partial : 795bp

**KF874310** : *Bacillus* thuringiensis SG1 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1635bp

**KF874311** : *Paenibacillus* taichungensis SG3 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1654bp

**KF874312** : *Bacillus* mycoides SG5 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1714bp

**KF874313** : *Bacillus* thuringiensis SG6 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1596bp

**KF874314** : *Bacillus* cereus SG10 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1563bp

**KF874315** : *Bacillus* thuringiensis SG11 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1611bp

**KF874316** : *Bacillus* thuringiensis SG17 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1713bp

**KF874317** : *Bacillus* cereus SG18 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1491bp

**KF874318** : *Bacillus* weihenstephanensis SG19 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1691bp

**KF874319** : *Bacillus* mycoides SG20 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1701bp

**KF874320** : *Paenibacillus* tylopili SG24 : Joshi, S. R and Lyngwi, N. A : (asbA) : Partial : 1662bp

**JX469423** : *Aspergillus* fumigatus : Joshi SR and Lamabam S.D. : ITS : Partial : 574bp

**JX853767** : *Fusarium* oxysporum : Joshi SR and Lamabam S.D : ITS : Partial : 518bp

**JX469424** : *Aspergillus niger* : Joshi SR and Lamabam S.D : ITS : Partial : 581bp

**JX853766** : *Cladosporium* cladosporioides : Joshi SR and Lamabam S.D : ITS : Partial : 512bp

**JX469419** : *Aspergillus niger* : Joshi SR and Lamabam S.D : ITS : Partial : 573bp

**JX469420** : *Aspergillus* tamarii : Joshi SR and Lamabam S.D : ITS : Partial : 490bp

**JX469421** : *Alternaria solani* : Joshi SR and Lamabam S.D : ITS : Partial : 541bp

**JX469422** : *Penicillium*  funiculosum : Joshi SR and Lamabam S.D : ITS : Partial : 554bp

**JX853765** : *Cryptosporiopsis ericae* : Joshi SR and Lamabam S.D : ITS : Partial : 538bp

**KF358718** : *Arthrinium* sp : Joshi SR and Lamabam S.D : ITS : Partial : 557bp

**KF358719** : *Paecilomyces lilacinus* : Joshi SR and Lamabam S.D : ITS : Partial : 532bp

**KF358720** : *Penicillium*  ochrochloron : Joshi SR and Lamabam S.D : ITS : Partial : 563bp

**JN040731** : *Aspergillus* sp : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 712bp

**JN247750** : *Penicillium*  sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 724bp

**JN040743** : *Penicillium decumbens* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 720bp

**JN040746** : *Penicillium purpurogenum* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 669bp

**JN040747** : *Penicillium*  piceum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 722bp

**JN247760** : *Penicillium griseofulvum* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 741bp

**JN040728** : *Penicillium purpurogenum*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 718bp

**JN040733** : *Penicillium*  sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 743bp

**JN040744** : *Chromocleista malachitea* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 721bp

**JN040737** : *Chromocleista malachitea* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 720bp

**JN040748** : *Thysanophora longispora* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 744bp

**JN040735** : *Talaromyces leycettanus* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 707bp

**JN040739** : *Penicillium*  piceum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 730bp

**JN040738** : *Talaromyces leycettanus* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 443bp

**JN247757** : *Nectria lugdunensis* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 665bp

**JN040741** : *Fusarium* oxysporum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 743bp

**JN040749** : *Cladosporium* sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 745bp

JN040745 : *Hypocrea koningii* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 723bp

JN247755 : *Pleurostomophora richardsiae* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 663bp

JN247749 : *Mortierella wolfii* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 663bp

JN040732 : *Fusarium* oxysporum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 722bp

JN040730 : *Fusarium* sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 739bp

JN040736 : *Apiospora montagnei* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 743bp

**JN860210** : *Aspergillus* terreus : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 743bp

**JN247752** : *Hypocrea koningii* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 746bp

**JN247758** : *Mucor*  genevensis : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 741bp

**JN247753** : *Aspergillus* fumigates : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 722bp

**JN247751** : *Absidia glauca*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 685bp

**JQ256464** : *Penicillium*  sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 701bp

**JQ256465** : *Penicillium purpurogenum*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 696bp

**JQ256466** : *Penicillium*  sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 705bp

**JQ256467** : *Penicillium*  chrysogenum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 580bp

**JQ256468** : *Fusarium* oxysporum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 720bp

**JQ256469** : *Aspergillus* versicolor : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 702bp

**JQ256470** : *Talaromyces flavus* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 707bp

**JQ256473** : *Penicillium purpurogenum*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 653bp

**JQ256474** : *Chamaeleomyces granulomatis* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 599bp

**JQ256475** : *Penicillium decumbens* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 672bp

**JQ074019** : *Absidia glauca*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 769bp

**JQ074020** : *Talaromyces byssochlamydoides*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 750bp

**JQ074021** : *Penicillium purpurogenum*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 749bp

**JQ074022** : *Talaromyces flavus* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 735bp

**JQ074023** : *Fusarium* sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 742bp

**JQ074024** : *Fusarium* sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 743bp

**JQ074025** : *Fusarium* oxysporum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 731bp

**JQ074026** : *Aspergillus* nomius : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 734bp

**JQ074027** : *Penicillium purpurogenum*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 744bp

**JQ074028** : *Talaromyces flavus* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 742bp

**JQ074029** : *Penicillium*  sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 752bp

**JQ074030** : *Chromocleista malachitea*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 741bp

**JQ074031** : *Penicillium*  sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 738bp

**JQ074032** : *Hypocrea rufa* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 732bp

**JQ074033** : *Penicillium decumbens* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 736bp

**JQ074034** : *Penicillium*  sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 726bp

**JQ074036** : *Talaromyces flavus* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 747bp

**JQ281523** : *Aspergillus* versicolor : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 703bp

**JQ281524** : *Tricoderma* sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 669bp

**JQ281525** : *Talaromyces byssochlamydoides*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 690bp

**JQ281526** : *Fusarium* oxysporum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 701bp

**JQ281527** : *Penicillium decumbens* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 713bp

**JQ281528** : *Hypocrea rufa* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 705bp

**JQ281529** : *Fusarium* oxysporum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 691bp

**JQ281530** : *Talaromyces flavus* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 703bp

**JQ281531** : *Hypocrea rufa* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 729bp

**JQ824836** : *Aspergillus* flavus : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 670bp

**JQ824837** : *Talaromyces flavus* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 701bp

**JQ824838** : *Aspergillus* awamori : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 713bp

**JQ824839** : *Penicillium*  sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 700bp

**JQ824840** : *Aspergillus* fumigates : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 712bp

**JF927993** : *Trichoderma* viride : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 744bp

**JF968421** : *Penicillium purpurogenum*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 485bp

**JF968422** : *Penicillium charlesii*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 521bp

**JF968423** : *Absidia gluaca* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 762bp

**JF968424** : *Fusarium* oxysporum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 743bp

**JF968425** : *Alternaria alternata* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 727bp

**JF968426** : *Penicillium griseofulvum*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 741bp

**JF968429** : *Absidia gluaca* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 755bp

**JF968433** : *Penicillium purpurogenum*  : Joshi SR and Lamabam S.D, : 18S rRNA : Partial : 743bp

**JF968434** : *Thysanophora penicillioides*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 750bp

**HQ600965** : *Penicillium griseofulvum*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 719bp

**HQ600968** : *Umbelopsis*  sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 746bp

**HQ600969** : *Penicillium charlesii*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 736bp

**HQ600971** : *Umbilopses* sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 858bp

**HQ600972** : *Davidiella* tassiana : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 712bp

**HQ600973** : *Penicillium purpurogenum* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 736bp

**HQ600974** : Aspergillis sp. : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 743bp

**HQ600975** : *Penicillium charlesii*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 727bp

**HQ600976** : *Penicillium charlesii*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 729bp

**HQ600977** : *Penicillium janthinellum*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 732bp

**HQ600978** : *Paecilomyces lilacinus*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 730bp

**HQ600979** : *Penicillium charlesii*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 729bp

**HQ600980** : *Penicillium olsonii*  : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 731bp

**HQ600981** : *Penicillium*  glabrum : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 742bp

**HQ600982** : *Aspergillus niger* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 730bp

**HQ600984** : *Apiospora montagnei* : Joshi SR and Lamabam S.D : 18S rRNA : Partial : 729bp

**HQ141620** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1498bp

**HQ141621** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1479bp

**HQ141622** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1482bp

**HQ141623** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1487bp

**HQ141624** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1477bp

**JN680705** : *Lactobacillus pentosus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1510bp

**JN680706** : *Lactobacillus rossiae* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1507bp

**JN680707** : *Lactobacillus plantarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1519bp

**JN680708** : *Lactobacillus rossiae* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1504bp

**HQ141625** : *Bacillus* subtilis : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1470bp

**JF804773** : *Bacillus* thuringiensis : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1451bp

**JF804774** : *Bacillus* thuringiensis : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1474bp

**JF804770** : *Staphylococcus saprophyticus*  : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1481bp

**JF804771** : *Staphylococcus* saprophyticus  : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1434bp

**JN680696** : *Staphylococcus saprophyticus*  : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1432bp

**JF804772** : *Staphylococcus saprophyticus*  : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1458bp

**JN255522** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1423bp

**JN255524** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1402bp

**JN255521** : *Staphylococcus* gallinarum : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1366bp

**JN255525** : *Staphylococcus* condimenti : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1486bp

**JN255523** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1334bp

**JN680701** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1485bp

**JN680702** : *Staphylococcus* saprophyloticus. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1483bp

**JN680697** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1487bp

**JN680698** : *Enterobacter* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1439bp

**JN680699** : *Enterobacter* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1467bp

**JN680700** : *Enterobacter* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1474bp

**JN680703** : *Enterobacter* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1469bp

**JN680704** : *Raoutella* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1473bp

**KC478503** : *Lactobacillus plantarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1461bp

**KC478504** : *Lactobacillus plantarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1473bp

**KC478505** : *Lactobacillus xiangfangensis* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1482bp

**KC478506** : *Lactobacillus pentosus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1511bp

**KC478507** : *Lactobacillus plantarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1483bp

**KC478508** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1486bp

**KC478509** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1519bp

**KC478510** : *Enterococcus gallinarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1455bp

**KC478511** : Enterococcus faecalis : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1510bp

**KC478512** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1474bp

**KC478513** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1482bp

**KC478514** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1481bp

**KC478515** : *Enterococcus casseliflavus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1464bp

**HQ141620** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1498bp

**HQ141621** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1479bp

**HQ141622** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1482bp

**HQ141623** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1487bp

**HQ141624** : *Lactobacillus pobuzihii* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1477bp

**JN680705** : *Lactobacillus pentosus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1510bp

**JN680706** : *Lactobacillus rossiae* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1507bp

**JN680707** : *Lactobacillus plantarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1519bp

**JN680708** : *Lactobacillus rossiae* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1504bp

**HQ141625** : *Bacillus* subtilis : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1470bp

**JF804773** : *Bacillus* thuringiensis : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1451bp

**JF804774** : *Bacillus* thuringiensis : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1474bp

**JF804770** : *Staphylococcus saprophyticus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1481bp

**JF804771** : *Staphylococcus saprophyticus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1434bp

**JN680696** : *Staphylococcus saprophyticus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1432bp

**JF804772** : *Staphylococcus saprophyticus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1458bp

**JN255522** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1423bp

**JN255524** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1402bp

**JN255521** : *Staphylococcus* gallinarum : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1366bp

**JN255525** : *Staphylococcus* condimenti : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1486bp

**JN255523** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1334bp

**JN680701** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1485bp

**JN680702** : *Staphylococcus* saprophyloticus. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1483bp

**JN680697** : *Staphylococcus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1487bp

**JN680698** : *Enterobacter* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1439bp

**JN680699** : *Enterobacter* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1467bp

**JN680700** : *Enterobacter* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1474bp

**JN680703** : *Enterobacter* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1469bp**JN680704** : *Raoutella* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1473bp

**KC478503** : *Lactobacillus plantarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1461bp

**KC478504** : *Lactobacillus plantarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1473bp

**KC478505** : *Lactobacillus xiangfangensis* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1482bp

**KC478506** : *Lactobacillus pentosus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1511bp

**KC478507** : *Lactobacillus plantarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1483bp

 **KC478508** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1486bp

 **KC478509** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1519bp

**KC478510** : *Enterococcus gallinarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1455bp

 **KC478511** : Enterococcus faecalis : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1510bp

 **KC478512** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1474bp

**KC478513** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1482bp

**KC478514** : *Enterococcus faecium* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1481bp

**KC478515** : *Enterococcus casseliflavus* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1464bp

**JX188047** : *Lactobacillus* sp : SR Joshi and George F Rapsang : 16S rRNA : Partial : 545bp

**JX188046** : *Lactobacillus plantarum* : SR Joshi and George F Rapsang : 16S rRNA : Partial : 548bp

**JX188048** : *Lactobacillus* brevis : SR Joshi and George F Rapsang : 16S rRNA : Partial : 518bp

**JX500091** : *Lactobacillus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 748bp

**JX500092** : *Lactobacillus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 499bp

**JX500093** : *Lactobacillus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 1537bp

**JX500094** : *Lactobacillus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 455bp

**JX500095** : *Lactobacillus* sp. : SR Joshi and George F Rapsang : 16S rRNA : Partial : 577bp

**JN613282** : *Serratia marcescens* cenA : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1,368 bp

**JN613283** : *Bacillus* *subtilis* cenB : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1,411 bp

**JN628288** : *Bacillus* *tequilensis* CEN3E : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1,404 bp

**JN628290** : *Bacillus* *aryabhattai* CEN5E : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1,338 bp

**JN628291** : *Bacillus* *thuringiensis* CEN6E: SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1,290 bp

**JN628292** : *Pantoea eucalypti* CEN7E : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1,256 bp

**JX298807** : *Bacillus* sp. F21 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1,420 bp

**JN585959** : *Paenibacillus* *uliginis* C22 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 373 bp

**JN585960** : *Bacillus* *siamensis* : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 401 bp

**JN418870** : *Lysinibacillus* *xylanilyticus* F1 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 401 bp

**JX390622** : *Bacillus* *thuringiensis* F41 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1,412 bp

**JN653461** : *Enterobacter* sp. EP2a : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1,253 bp

**JN418873** : *Curtobacterium citreum* E4 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 381 bp

**JQ236632** : *Bacillus* *methylotrophicus* POTA:SR Joshi and Fenella MW Nongkhlaw :16S rRNA :Partial:1418bp

**JQ770186** :*Herminiimonas saxobsidens* AA : SRJoshi and Fenella MW Nongkhlaw :16S rRNA :Partial :1399 bp

**JQ281538** : *Bacillus* *thuringiensis* POT1 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1412 bp

**JQ281539**:*Pseudomonas* *palleroniana* POT2 : SR Joshi and FMW Nongkhlaw : 16S rRNA : Partial : 1405 bp

**JQ007727** : *Comamonas* sp. POUX : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1399 bp

**JQ281541** :*Stenotrophomonas* *maltophilia* POT5 :SR Joshi and Fenella MW Nongkhlaw :16S rRNA :Partial:1403 bp

**JQ770187**:*Pseudomonas* *palleroniana* Y1 :SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial :1406 bp

**JQ770188** : *Pseudomonas* *argentinensis* Y2 :SR Joshi and Fenella MW Nongkhlaw :16S rRNA :Partial:1407 bp

**JQ236625** :*Pseudomonas* *baetica* ENIB7 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1399 bp

**JQ446440** : *Pantoea eucalypti* Y5- : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1412 bp

**JQ446442** : *Bacillus* *thuringiensis* Y7: SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1425 bp

**JQ074052** : *Leclercia adecarboxylata* CC4:SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1270 bp

**JQ074054** : *Exiguobacterium indicum* CC8:SR Joshi and Fenella MW Nongkhlaw : 16S rRNA: Partial : 1372 bp

**JQ292906** : *Buttiauxella izardii* M22 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 840 bp

**JN585958** : *Lysinibacillus* *xylanilyticus* C21 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA :Partial:396 bp

**JX298809** : *Bacillus* *mycoides* M31 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1456bp

**JX390623** : *Citrobacter youngae* ME5 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1447 bp

**JN418875** : *Bacillus* *thuringiensis* MEA7 : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 387 bp

**JX390624**:*Raoultella ornithinolytica* ME11:SR Joshi and FMW Nongkhlaw:16SrRNA:Partial: 1442 bp

**JN680692** : *Enterobacter* *soli* MEA10- : SR Joshi and Fenella MW Nongkhlaw : 16S rRNA : Partial : 1331bp

**KC841158** : *Lactobacillus* *curvatus* : Koijam,K. and Joshi,S.R : priming glycosyltransferasepartial : 201bp

**KC841160** : *Lactobacillus* *fermentum* : Koijam,K. and Joshi,S.R : dextransucrase : partial : 576bp

**KC841161** : *Lactobacillus* *fermentum* : Koijam,K. and Joshi,S.R : dextransucrase : partial : 603bp

**KC841162** : *Lactobacillus* f*ermentum* : Koijam,K. and Joshi,S.R : dextransucrase : partial : 524bp

**KC841159**:*Vagococcus lutrae*:Koijam,K. and Joshi,S.R :putative glycosyl phosphotransferase:partial: 201bp

**KX951469** : *Iiyonectria* sp. : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS : Partial: 473bp

**KX951470** : *Xylariales* sp. : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS : Partial: 462bp

**KX951471** : *Phoma labilis* : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS : Partial: 477bp

**KX951472** : *Phoma exigua* : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS : Partial: 491bp

**KX951473** : *Diaporthe* sp. : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS : Partial: 461bp

**KX951474**:*Iiyonectria radicicola* : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani:ITS:Partial: 481bp

**KX951475** : *Diaporthales* sp. : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS : Partial: : 460bp

**KX951476** :*Colletotrichum gloeosporoids*: SR Joshi, Susmita Paul,RK Bhagobaty and MC Nihalani:ITS :510bp

**KX951477**:*Colletotrichum gloeosporoids*: SR Joshi, Susmita Paul,RK Bhagobaty and MCNihalani:ITS:464bp

**KX951478**:*Colletotrichum gloeosporoids*: SR Joshi, Susmita Paul,RK Bhagobaty and MC Nihalani:ITS: 458bp

**KX951479** : *Phomopsis* sp. :SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS : Partial: 443bp

**KX951480** : *Phomopsis* sp. : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS : Partial: 490bp

**KX951481** : *Colletotrichum gloeosporoids* :SR Joshi,Susmita Paul,RK Bhagobaty and MC Nihalani:ITS:469bp

**KX951482** : *Fusarium* solani : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS : Partial: 460bp

**KX951483** : *Pseudocosmospora vilior* : SR Joshi, Susmita Paul, RK Bhagobaty and MC Nihalani : ITS :495bp

**JN600439.1** : *Acidobacteria bacterium* RMSRJ93 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600438.1** : *Beta proteobacterium* RMSRJ92 : : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600437.1** : *Firmicutes bacterium* RMSRJ91 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600436.1** : *Firmicutes bacterium* RMSRJ90 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600435.1** : *Beta roteobacterium* RMSRJ89 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600434.1** : *Gamma proteobacterium* RMSRJ88 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600433.1** : *Acidobacteria bacterium* RMSRJ87 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600432.1** : *Acidobacteria bacterium* RMSRJ86 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600431.1** : *Firmicutes bacterium* RMSRJ85 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600430.1** : *Alpha proteobacterium* RMSRJ84 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600429.1** : *Chlorobi bacterium* RMSRJ83 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600428.1** : *Alpha proteobacterium* RMSRJ82 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600427.1** : *Alpha proteobacterium* RMSRJ81 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

 **JN600426.1** : *Beta proteobacterium* RMSRJ80 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600425.1** : *Alpha proteobacterium* RMSRJ79 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

 **JN600424.1** : *Beta proteobacterium* RMSRJ78 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600423.1** : *Alpha proteobacterium* RMSRJ77 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600422.1** : *Acidobacteria bacterium* RMSRJ76 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600421.1** : *Acidobacteria bacterium* RMSRJ75 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600420.1** : *Beta proteobacterium* RMSRJ74 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600419.1** : *Gamma proteobacterium* RMSRJ73 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600418.1** : *Acidobacteria bacterium* RMSRJ72 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600417.1** : *Gamma proteobacterium*  RMSRJ71 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA

**JN600416.1** : *Verrucomicrobium* sp. RMSRJ70 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600415.1** : *Acidobacteria bacterium* RMSRJ69 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600414.1** : *Actinobacterium* RMSRJ68 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600413.1** : *Actinobacterium* RMSRJ67 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600412.1** : *Acidobacteria bacterium* RMSRJ66 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600411.1** : *Actinobacterium* RMSRJ65 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600410.1** : *Firmicutes bacterium* RMSRJ64 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600409.1** : *Acidobacteria bacterium* RMSRJ63 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600408.1** : *Alph proteobacterium* RMSRJ62 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600407.1** : *Chloroflexi bacterium* RMSRJ61 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600406.1** : *Delta proteobacterium* RMSRJ60 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600405.1** : *Acidobacteria bacterium* RMSRJ59 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600404.1** : *Delta proteobacterium* RMSRJ58 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600403.1** : *Delta proteobacterium* RMSRJ57 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600402.1** : *Firmicutes bacterium* RMSRJ46 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600401.1** : *Firmicutes bacterium* RMSRJ45 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600400.1** : *Gamma proteobacterium* RMSRJ44 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600399.1** : *Gamma proteobacterium* RMSRJ43 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600398.1** : *Firmicutes bacterium* RMSRJ42 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600397.1** : *Actinobacterium* RMSRJ41 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

 **JN600396.1** : *Beta proteobacterium*  RMSRJ40 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600395.1** : *Beta proteobacterium* RMSRJ39 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600394.1** : *Acidobacteria bacterium* RMSRJ38 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600393.1** : *Acidobacteria bacterium* RMSRJ37 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600392.1** : *Acidobacteria bacterium* RMSRJ36 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600391.1** : *Delta proteobacterium*  RMSRJ35 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600390.1** : *Verrucomicrobium* sp. RMSRJ34 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600389.1** : *Acidobacteria bacterium* RMSRJ33 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600388.1** : *Beta proteobacterium*  RMSRJ32 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600387.1** : *Acidobacteria bacterium* RMSRJ31 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600386.1** : *Beta proteobacterium* RMSRJ30 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600385.1** : *Acidobacteria bacterium* RMSRJ29 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600384.1** : *Acidobacteria bacterium* RMSRJ28 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600383.1** : *Acidobacteria bacterium* RMSRJ27 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600382.1** : *Chloroflexi bacterium* RMSRJ26 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600381.1** : *Alpha proteobacterium* RMSRJ25 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600380.1** : *Alpha proteobacterium* RMSRJ24 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600379.1** : *Alpha proteobacterium* RMSRJ23 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600378.1** : *Alpha proteobacterium* RMSRJ22 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600377.1** : *Alpha proteobacterium* RMSRJ21 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600376.1** : *Firmicutes bacterium* RMSRJ20 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600375.1** : *Beta proteobacterium* RMSRJ19 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600374.1** : *Delta proteobacterium*  RMSRJ18 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600373.1** : *Alpha proteobacterium* RMSRJ17 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600372.1** : *Alpha proteobacterium* RMSRJ16 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600371.1** : *Alpha proteobacterium* RMSRJ15 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

 **JN600370.1** : *Acidobacteria bacterium* RMSRJ14 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600369.1** : *Beta proteobacterium*  RMSRJ13 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

 **JN600368.1** : *Beta proteobacterium*  RMSRJ12 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600367.1** : *Firmicutes bacterium* RMSRJ11 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600366.1** : *Acidobacteria bacterium*:RMSRJ10 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

 **JN600365.1** : *Acidobacteria bacterium* RMSRJ9 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

 **JN600364.1** : *Alpha proteobacterium* RMSRJ8 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

 **JN600363.1** : *Acidobacteria bacterium* RMSRJ6 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

**JN600362.1** : *Gamma proteobacterium* RMSRJ5 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

 **JN600361.1** : *Gamma proteobacterium* RMSRJ4 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600360.1** : *Gamma proteobacterium* RMSRJ3 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

 **JN600359.1** : *Acidobacteria bacterium* RMSRJ2 : R Kumar, M Nongkhlaw and SR Joshi : 16SrRNA : partial

**JN600358.1** : *Beta proteobacterium* RMSRJ1 : R Kumar, M Nongkhlaw and SR Joshi :16SrRNA : partial

 **KY216110** : *Absidia* sp. MER-R1 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 475bp

 **KY216111** : *Penicillium kojigenum* MER-01 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 565 bp

 **KY216112** : *Cladosporium sphaerospermum* MER-02 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 571 bp

 **KY216113** : *Penicillium atramentosum* MER-03 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 556 bp

**KY216114** : *Aspergillus ruber* MER-04 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS4 : 560 bp

**KY216115** : *Fusarium oxysporum* MER-05 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 566 bp

 **KY216116** : *Trichoderma atroviride* MER-06 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 569 bp

**KY216117** : *Penicillium aurantiogriseum* MER-08 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 573 bp

**KY216118** : *Metarhizium* sp. MER-14 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 612 bp

**KY216119** : *Trichoderma* sp. MER-10 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS4 : 581 bp

**KY216120** : *Penicillium* sp. MER-603 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 619 bp

**KY216121** : *Trichoderma amazonicum* MER-09 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS4 : 606 bp

**KY216122** : *Talaromyces* sp. MER-606 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 572 bp

**KY216123** : *Penicillium simplicissimum* MER-PC : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS4 : 613 bp

**KY216124** : *Trichoderma koningii* MER-508 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 588 bp

**KY216125** : *Aspergillus sydowii* MER-913 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 577 bp

**KY216126** : *Backusella tuberculispora* MER-31 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS4 : 625 bp

**KY216127** : *Pochonia rubescens* MER-GN : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 571 bp

**KY216128** : *Clonostachys* sp. MER-605 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 567 bp

**KY216129** : *Chaunopychnis* sp. MER-12 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 607 bp

**KY216130** : *Clonostachys* sp. MER-104 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS4 : 611 bp

**KY216131** : *Clonostachys candelabrum* MER-D : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS4 : 540 bp

**KY216132** : *Trichoderma erinaceum* MER-A2 : S. R. Joshi,H. Romola Devi,M. S. Dkhar : ITS1 : 584 bp

**KY594002:** *Pleurotus ostreatus* : M Borthakur, and SR Joshi : ITS : partial : 553bp

**KY594003:** *Myrothecium verrucaria* : M Borthakur, J Gogoi and SR Joshi: ITS: partial : 749 bp

**KY594004:** *Penicillium striatisporum*: M Borthakur, J Gogoi and SR Joshi : ITS: partial : 615 bp

**KY883344:** *Scleroderma citrinum* : M Borthakur and SR Joshi : ITS : partial : 693bp

**KX011029** : *Pseudomonas* sp. W2 : Debajit Kalita and SR Joshi : 16SrRNA : partial

**KX953851** : *Providencia* sp DKSRJ S7 : Debajit Kalita and SR Joshi : 16SrRNA : partial

**AJ575658** : *Paenibacillus jamilae* PKR1 : Debajit Kalita and SR Joshi : 16SrRNA : partial

**JF768708** : *Arthrobacter* sp RSBA 1 : Debajit Kalita and SR Joshi : 16SrRNA : partial

**MG234433:** *Bacillus amyloliquefaciens*  Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1475bp

**MG234434:** *Bacillus velezensis* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1464bp

**MG234435:** *Bacillus subtilis* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1459bp

**MG234436:** *Curtobacterium* sp. Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1395bp

**MG234437:** *Acinetobacter baumanii* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1449bp

**MG234438:** *Bacillus megaterium* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1472bp

**MG234439:** *Bacillus pumilus* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1462bp

**MG234440:** *Bacillus pumilus* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1480bp

**MG234441:** *Curtobacterium luteum* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1405bp

**MG234442:** *Curtobacterium* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1435bp

**MG234443:** *Enterobacter cloaceae* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1413bp

**MG234444:** *Bacillus licheniformis* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1455bp

**MG234445:** *Achromobacter* sp. Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1443bp

**MG234446:** *Streptomyces* sp. Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1411bp

**MG234447:** *Bacillus mycoides* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1466bp

**MG234448:** *Alcaligenes faecalis* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1516bp

**MG234449:** *Alcaligenes faecalis* Banerjee, A., Joshi,S.R.: 16S rRNA : Partial: 1443bp

**MG181224:** *Enterobacter mori* DKSRJ.DK2 : SR Joshi and Debajit Kalita: 16S rRNA : Partial : 1,460 bp

**MF564074**; *Penicillium chrysogenum;* SR Joshi and DA Bareh; ITS gene sequence; 545 bp

**MF564075**; *Penicillium manginii*; SR Joshi and DA Bareh; ITS gene sequence; 516 bp

**MF564076**; *Penicillium striatisporum*; SR Joshi and DA Bareh; ITS gene sequence; 530 bp

**MF564077**; *Penicillium chrysogenum*; SR Joshi and DA Bareh; ITS gene sequence; 519 bp

**MF564078**; *Penicillium crustosum*; SR Joshi and DA Bareh; ITS gene sequence; 520 bp

**MF564079**; *Cytospora* sp. SR Joshi and DA Bareh; ITS gene sequence; 558 bp

**MF564080**; *Penicillium* sp. SR Joshi and DA Bareh; ITS gene sequence; 525 bp

**MF564081**; *Purpureocillium lilacinum*; SR Joshi and DA Bareh; ITS gene sequence; 547 bp

**MF564082**; *Penicillium chrysogenum*; SR Joshi and DA Bareh; ITS gene sequence; 528 bp

**MF564083**; *Aspergillus westerdijkiae*; SR Joshi and DA Bareh; ITS gene sequence; 536 bp

**MF564084**; *Perenniporia tephropora*; SR Joshi and DA Bareh; ITS gene sequence; 587 bp

**MF564085**; *Talaromyces* sp. SR Joshi and DA Bareh; ITS gene sequence; 513 bp

**MF564086**; *Perenniporia tephropora*; SR Joshi and DA Bareh; ITS gene sequence; 591 bp

**MF564087**; *Trichoderma harzianum*; SR Joshi and DA Bareh; ITS gene sequence; 551 bp

**MF564088**; *Penicillium* sp. SR Joshi and DA Bareh; ITS gene sequence; 529 bp

**MF564089**; *Penicillium* sp. SR Joshi and DA Bareh; ITS gene sequence; 521 bp

**MF564090**; *Fungal* sp. SR Joshi and DA Bareh; ITS gene sequence; 594 bp

**MF564091**; *Peniophora* sp. SR Joshi and DA Bareh; ITS gene sequence; 589 bp

**MF564092**; *Phlebiopsis* sp. SR Joshi and DA Bareh; ITS gene sequence; 596 bp

**MF564093**; *Tbpalaromyces verruculosus*; SR Joshi and DA Bareh; ITS gene sequence; 535 bp

**MF564094**; *Penicillium chrysogenum*; SR Joshi and DA Bareh; ITS gene sequence; 538 bp

**MF564095**; *Penicillium citrinum*; SR Joshi and DA Bareh; ITS gene sequence; 511 bp

**MF564096**; *Aspergillus jensenii*; SR Joshi and DA Bareh; ITS gene sequence; 523 bp

**MF564097**; *Aspergillus aculeatinus*; SR Joshi and DA Bareh; ITS gene sequence; 526 bp

**MF564098**; *Aspergillus westerdijkiae*; SR Joshi and DA Bareh; ITS gene sequence; 539 bp

**MF564099;** *Aspergillus niger*; SR Joshi and DA Bareh; ITS gene sequence; 548 bp

**MF564100**; *Aspergillus niger*; SR Joshi and DA Bareh; ITS gene sequence; 542 bp

**MF564101**; *Clonostachys rosea*; SR Joshi and DA Bareh; ITS gene sequence; 517 bp

**MF564102**; *Bjerkandera adusta*; SR Joshi and DA Bareh; ITS gene sequence; 619 bp

**MF564103**; *Penicillium citrinum*; SR Joshi and DA Bareh; ITS gene sequence; 488 bp

**MF564104**; *Penicillium crustosum*; SR Joshi and DA Bareh; ITS gene sequence; 528 bp

**MF564105**; *Trichoderma gamsii*; SR Joshi and DA Bareh; ITS gene sequence; 547 bp

**MF564106**; *Meyerozyma caribbica*; SR Joshi and DA Bareh; ITS gene sequence; 547 bp

**MF564107**; *Penicillium crustosum*; SR Joshi and DA Bareh; ITS gene sequence; 482 bp

**MF564108**; *Cytospora* sp. SR Joshi and DA Bareh; ITS gene sequence; 548 bp

**MF564109**; *Purpureocillium lilacinum*; SR Joshi and DA Bareh; ITS gene sequence; 545 bp

**MF564110**; *Penicillium citrinum*; SR Joshi and DA Bareh; ITS gene sequence; 501 bp

**MF564111**; *Penicillium chrysogenum*; SR Joshi and DA Bareh; ITS gene sequence; 535 bp

**MF143554:** *Cladosporium cladosporioides* : SR Joshi and Susmita Paul : ITS: Partial : 530bp

**MF143555:** *Xylariaceae* sp.: SR Joshi and Susmita Paul : ITS:Partial : 609bp

**MF143556:** *Cladosporium tenuissimum* : SR Joshi and Susmita Paul : ITS: Partial : 525bp

**MF143557:** *Colletotrichum gloeosporioides* **:** SR Joshi and Susmita Paul : ITS:Partial : 607bp

**MF143558:** *Lasiodiplodia exigua***:** SR Joshi and Susmita Paul : ITS:Partial : 1005bp

**MF143559:** *Phomopsis* sp.**:** SR Joshi and Susmita Paul : ITS:Partial : 557bp

**MF143560:** *Diaporthe phaseolorum***:** SR Joshi and Susmita Paul : ITS:Partial : 639bp

**MF595896:** *Colletotrichum siamense***:** SR Joshi and Susmita Paul : ITS:Partial : 579bp

**MF595897:** *Diaporthe* sp.**:** SR Joshi and Susmita Paul : ITS:Partial : 561bp

**MF595898:** *Aspergillus niger* **:** SR Joshi and Susmita Paul : ITS:Partial : 653bp

**MF595899:** *Colletotrichum gloeosporioides* **:** SR Joshi and Susmita Paul : ITS:Partial : 813bp

**MF595900:** *Aspergillus niger* **:** SR Joshi and Susmita Paul : ITS:Partial : 568bp

**MF595901:** *Colletotrichum siamense* **:** SR Joshi and Susmita Paul : ITS:Partial : 573bp

**MF595902:** *Pestaliotopsis microspora* **:** SR Joshi and Susmita Paul : ITS:Partial : 578bp

**MF595903:** *Phomopsis* sp.**:** SR Joshi and Susmita Paul : ITS:Partial : 612bp

**MG214067** : *Hypholoma fasciculare* : SR Joshi and M Borthakur : ITS 1 : Complete : 281 bp

**MG214068** : *Lactifluus glaucescens* : SR Joshi and M Borthakur : ITS 1 : Complete : 204 bp

**MG214069** : *Russula lepida* : SR Joshi and M Borthakur : ITS 1 : Complete : 230 bp

**MG214070** : *Retiboletus* sp. : SR Joshi and M Borthakur : ITS 1 : Complete : 233 bp

**MG214071** : *Echinoderma aspera* : SR Joshi and M Borthakur : ITS 1 : Complete : 326 bp

**MG214072** : *Suillus ochraceoroseus* : SR Joshi and M Borthakur : ITS 1 : Complete :255 bp

**MG214073** : *Gymnomyces fallax* : SR Joshi and M Borthakur : ITS 1 : Complete :264 bp

**MG214074** : *Leccinum rugosiceps* : SR Joshi and M Borthakur : ITS 1 : Complete : 242 bp

**MG214075** : *Amauroderma* sp. : SR Joshi and M Borthakur : ITS 1 : Complete : 249 bp

**MG214076** : *Lactarius purpureus* : SR Joshi and M Borthakur : ITS 1 : Complete : 277 bp

**MG214077** : *Gymnopus subnudus* : SR Joshi and M Borthakur : ITS 1 : Complete : 230 bp

**MG214078** : *Pseudohydnum gelatinosum* : SR Joshi and M Borthakur : ITS 1 : Complete : 223 bp

**MG214079** : *Amanita lignitincta* : SR Joshi and M Borthakur : ITS 1 : Complete : 251 bp

**MG214080** : *Amanita griseofolia* : SR Joshi and M Borthakur : ITS 1 : Complete : 275 bp

**MG214081** : *Amanita spissacea* : SR Joshi and M Borthakur : ITS 1 : Complete : 251 bp

**MG214082** : *Amanita virgineoides* : SR Joshi and M Borthakur : ITS 1 : Complete : 241 bp

**MG214083** : *Heterobasidion annosum* : SR Joshi and M Borthakur : ITS 1 : Complete : 234 bp

**MG214084** : *Scleroderma citrinum* : SR Joshi and M Borthakur : ITS 1 : Complete : 222 bp

**MG214085** : *Pleurotus ostreatus* : SR Joshi and M Borthakur : ITS 1 : Complete : 204 bp

**MG214086** : *Inocybe perlata* : SR Joshi and M Borthakur : ITS 1 : Complete : 284 bp

**MG253008**: *Hypholoma fasciculare* : SR Joshi and M Borthakur : 28S rRNA : Partial : 479 bp

**MG253009**: *Lactifluus glaucescens* : SR Joshi and M Borthakur : 28S rRNA : Partial : 564 bp

**MG253010**: *Russula lepida* : SR Joshi and M Borthakur : 28S rRNA : Partial : 597 bp

**MG253011**: *Retiboletus fuscus* : SR Joshi and M Borthakur : 28S rRNA : Partial : 471 bp

**MG253012**: *Echinoderma aspera* : SR Joshi and M Borthakur : 28S rRNA : Partial : 584 bp

**MG253013**: *Suillus bovinus* : SR Joshi and M Borthakur : 28S rRNA : Partial : 422 bp

**MG253014**: *Gymnomyces nondistincta* : SR Joshi and M Borthakur : 28S rRNA : Partial : 577 bp

**MG253015**: *Rugiboletus extremiorientalis* : SR Joshi and M Borthakur : 28S rRNA : Partial : 491 bp

**MG253016**: *Amauroderma* sp. : SR Joshi and M Borthakur : 28S rRNA : Partial : 457 bp

**MG253017**: *Lactarius olympianus* : SR Joshi and M Borthakur : 28S rRNA : Partial : 600 bp

**MG253018**: *Gymnopus subnudus* : SR Joshi and M Borthakur : 28S rRNA : Partial : 536 bp

**MG253019:** *Gymnopus peronatus* :SR Joshi and M Borthakur : 28S rRNA : Partial : 633 bp

**MG253020**: *Pseudohydnum gelatinosum* : SR Joshi and M Borthakur : 28S rRNA : Partial : 572 bp

**MG253021**: *Amanita* sp. :SR Joshi and M Borthakur : 28S rRNA : Partial : 612 bp

**MG253022**: *Amanita griseofolia* : SR Joshi and M Borthakur : 28S rRNA : Partial : 586 bp

**MG253023**: *Amanita virgineoides* : SR Joshi and M Borthakur : 28S rRNA : Partial : 467 bp

**MG253024**: *Heterobasidion annosum* :SR Joshi and M Borthakur : 28S rRNA : Partial : 550 bp

**MG253025**: *Scleroderma citrinum* : SR Joshi and M Borthakur : 28S rRNA : Partial : 536 bp

**MG253026**: *Pleurotus pulmonarius* : SR Joshi and M Borthakur : 28S rRNA : Partial : 573 bp

**MG253027**: *Inocybe perlata* : SR Joshi and M Borthakur : 28S rRNA : Partial : 586 bp

**MG383648**: *Russula lepida* :SR Joshi and M Borthakur : ITS : Complete : 602 bp

**MG383649**: *Retiboletus* sp:SR Joshi and M Borthakur : ITS : Complete : 503 bp

**MG383650** : *Lactifluus vellereus* :SR Joshi and M Borthakur : ITS : Complete : 723 bp

**MG383651***: Phallus* sp. :SR Joshi and M Borthakur : ITS : Complete : 559 bp

**MG383652**: *Amauroderma rugosum* :SR Joshi and M Borthakur : ITS : Complete : 549 bp

**MG383653:** *Suillus bovines* :SR Joshi and M Borthakur : ITS : Complete : 539 bp

**MG383654**: *Gymnomyces* sp :SR Joshi and M Borthakur : ITS : Complete : 398 bp

**MG383655** : *Leccinum rugosiceps* :SR Joshi and M Borthakur : ITS : Complete : 568 bp

**MG38365**6: *Amauroderma* sp. :SR Joshi and M Borthakur : ITS : Complete : 581 bp

**MG383657**: *Agrocybe ochracea* :SR Joshi and M Borthakur : ITS : Complete : 788 bp

**MG383658**: *Lactarius purpureus* :SR Joshi and M Borthakur : ITS : Complete : 658 bp

**MG383659:** *Heterobasidion annosum* :SR Joshi and M Borthakur : ITS : Complete : 441 bp

**MG383660:** *Gymnopus subnudus* :SR Joshi and M Borthakur : ITS : Complete : 643 bp

**MG383661**: *Gymnopus* sp. :SR Joshi and M Borthakur : ITS : Complete : 535 bp

**MG383662**: *Pseudohydnum gelatinosum* :SR Joshi and M Borthakur : ITS : Complete : 508 bp

**MG383663**: *Inocybe perlata* :SR Joshi and M Borthakur : ITS : Complete : 570 bp

**MG383664**: *Amanita lignitincta* :SR Joshi and M Borthakur : ITS : Complete : 499 bp

**MG383665:** *Suillus luteus* :SR Joshi and M Borthakur : ITS : Complete : 554 bp

**MG383666** : *Amanita griseofolia* :SR Joshi and M Borthakur : ITS : Complete : 516 bp

**MG383667:** *Amanita spissacea* :SR Joshi and M Borthakur : ITS : Complete : 579 bp

**MG383668**: *Amanita virgineoides* :SR Joshi and M Borthakur : ITS : Complete : 651 bp

**MG383669**: *Amanita spreta* :SR Joshi and M Borthakur : ITS : Complete : 445 bp

**MH172469:** *Phomopsis* sp**. :** SR Joshi and Susmita Paul: ITS: Partial : 579 bp

**MH220722:** *Enterococcus faecalis* : SR Joshi and Koel Biswas: 16S rRNA : Partial : ~1,400 bp

**MH220723:** *Enterococcus faecalis* : SR Joshi and Koel Biswas: 16S rRNA : Partial : ~1,400 bp

**MH220724:** *Enterococcus faecalis* : SR Joshi and Koel Biswas: 16S rRNA : Partial : ~1,400 bp

**MH220725:** *Enterococcus faecalis* : SR Joshi and Koel Biswas: 16S rRNA : Partial : ~1,400 bp

**MH220726:** *Enterococcus faecalis* : SR Joshi and Koel Biswas: 16S rRNA : Partial : ~1,400 bp

**MH220727:** *Enterococcus faecalis* : SR Joshi and Koel Biswas: 16S rRNA : Partial : ~1,400 bp

**MH220728:** *Enterococcus faecalis* : SR Joshi and Koel Biswas: 16S rRNA : Partial : ~1,400 bp

**MG874760**: *Bacillus altitudinis* KH-16F: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

 **MG874761**: *Bacillus megaterium* KH-15A: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874762**: *Bacillus albus* KH-13A: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874763**: *Bacillus siamensis* KH-12A: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874764**: *Bacillus siamensis* KH-EA: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874765**: *Bacillus wiedmanii* KH-BB: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874766**: *Bacillus siamensis* KH-11B: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874767**: *Bacillus siamensis* KH-6A: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

 **MG874768**: *Bacillus siamensis* KH-5: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

  **MG874769**: *Bacillus velezensis* KH-11C: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

 **MG874771**: *Bacillus nakamurai* KH-6E: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874772**: *Bacillus pseudomycoides* KH-4: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874773**: *Rhodococcus equi* KH-EE: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874774**: *Serratia marcescens* KH-CC: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MG874775**: *Paenibacillus chibensis* KH-3A: SR Joshi and Lily Shylla: 16SrRNA:Partial:>1300bp

**MN727110:** *Rhodococcus qingshengii* SC1: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN727111:** *Exiguobacterium acetylicum* SC2: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727112:** *Stenotrophomonas pictorum* SC3: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727113:** *Exiguobacterium artemiae* SC4: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN727114:** *Comamonas jiangduensis* SC5: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN727115:** *Pseudarthrobacter oxydans* SC6: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN727116:** *Streptomyces olivaceus* SC7: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727117:** *Bacillus tequilensis* WC1: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727118:** *Haemophilus piscium* WC4: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727119:** *Pseudomonas mohnii* WC5: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727120:** *Pseudomonas helmanticensis* WC6: SR. Joshi and U. Chettri: 16SrRNA: Parti: ~1400al

**MN727121:** *Pseudomonas simiae* WC7: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727122:** *Pseudomonas migulae* WC8: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727123:** *Pseudomonas hunanensis* WC9: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727124:** *Pseudomonas simiae* WC11: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN727125:** *Acinetobacter oryzae* WC13: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727126:** *Brevundimonas vesicularis* WC14: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727127:** *Ideonella paludis* WC16: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN727128:** *Sphingomonas echinoides* WC17: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN727129:** *Pseudomonas fuscovaginae* WC18: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN727130:** *Roseateles terrae* WC19: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733078:** *Pseudomonas furukawaii* SS1:SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733079:** *Psychrobacillus lasiicapitis* SS2:SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733080:** *Acidovorax delafieldii* SS3:SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733081:** *Paenarthrobacter ureafaciens* SS4:SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733082:** *Pseudomonas furukawaii* SS5:SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733083:** *Diaphorobacter polyhydroxybutyrativorans* SS6:SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733084:** *Paenarthrobacter ureafaciens* SS7: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733085:** *Bosea vestrisii* SS8:SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733086:** *Lactococcus lactis* subsp. *lactis* WS1:SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733087:** *Serratia marcescens* subsp*. marcescens* WS2:SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733088:** *Glutamicibacter mysorens* WS3: SR. Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733089:** *Aeromonas caviae* WS4:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733090:** *Microbacterium hydrothermale* WS6: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733091:** *Microbacterium hydrothermale* WS7:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733092:** *Massilia buxea* WS8:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733093:** *Pseudomonas paralactis* WS9:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733094:** *Vogesella perlucida* WS10:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733095:** *Pseudomonas kribbensis* WS11:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733096:** *Acinetobacter johnsonii* WS12:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733097:** *Microbacterium oxydans* WS14:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733098:** *Acinetobacter johnsonii* WS15:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733099:** *Brevundimonas vesicularis* WS16:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733100:** *Pseudomonas kribbensis* WS19:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733101:** *Stenotrophomonas pictorum* SR1:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733102:** *Glutamicibacter mysorens* SR2: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733103:** *Acinetobacter tandoii* SR3:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733104:** *Micrococcus aloeverae* SR4:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733105:** *Acinetobacter tandoii* SR5:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733106:** *Deinococcus wulumuqiensis* SR6:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733107:** *Kocuria palustris* WR1:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733108:** *Comamonas terrigena* WR2:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733109:** *Chryseobacterium culicis*WR3:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733110:** *Kocuria palustris* WR4:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733111:** *Acinetobacter tjernbergiae* WR5: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733112:** *Myroides marinus* WR7:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733113:** *Stenotrophomonas terrae* WR8:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733114:** *Pseudomonas monteilii* WR9:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733115:** *Chryseobacterium endophyticum* WR10: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733116:** *Bacillus aryabhattai* WR11: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733117:** *Staphylococcus edaphicus* WR12: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733118:** *Chromobacterium vaccinii* WR13:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733119:** *Comamonas testosteroni* WR14:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733120:** *Acinetobacter oleivorans* WR15: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733121:** *Chromobacterium vaccinii* WR16:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733122:** *Streptomyces racemochromogenes* WR18: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733214:** *Glutamicibacter mysorens* ST2: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733215:** *Pseudomonas monteilii* ST3:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733216:** *Aeromonas caviae* ST4:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733217:** *Diaphorobacter polyhydroxybutyrativorans* ST5: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733218:** *Bosea vestrisii* ST6: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733219:** *Pseudoxanthomonas japonensis* WT1: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733220:** *Cellulosimicrobium aquatile* WT2: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733221:** *Bacillus toyonensis* WT3:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733222:** *Chryseobacterium endophyticum* WT4: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733223:** *Microbacterium gorillae* WT5: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733224:** *Serratia marcescens* subsp. *sakuensis* WT6: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

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**MN733226:** *Lysinibacillus xylanilyticus* WT8:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733227:** *Micrococcus yunnanensis* WT9: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733228:** *Arthrobacter pascens* WT10: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733229:** *Myroides xuanwuensis* WT12: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733230:** *Acinetobacter tjernbergiae* WT13: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733231:** *Glutamicibacter halophytocola* WT14: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733232:** *Klebsiella pneumoniae* subsp. *rhinoscleromatis* WT16: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733233:** *Serratia marcescens* subsp. *sakuensis* WT17: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733234:** *Microbacterium indicum* WT18:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733235:** *Lactococcus lactis* subsp. *lactis* WT19: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733236:** *Brevibacterium iodinum* WT20:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733237:** *Bacillus subtilis* subsp. *stercoris* WT21: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733238:** *Novosphingobium pokkalii* WT22: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733239:** *Chromobacterium piscinae* WT23: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733240:** *Deinococcus grandis* WT24: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733329:** *Exiguobacterium profundum* SRK2: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733330:** *Bacillus subtilis* subsp. *stercoris* SRK3: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733331:** *Pseudomonas monteilii* SRK4: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733332:** *Bacillus marisflavi* SRK5: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733333:** *Acinetobacter baumannii* SRK7:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733334:** *Paenarthrobacter ureafaciens* SRK8: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733335:** *Rhizobium radiobacter* SRK9: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733336:** *Stenotrophomonas acidaminiphila* SRK10: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733337:** *Hydrogenophaga atypica* SRK11: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733338:** *Pseudomonas alcaligenes* SRK12: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733339:** *Pseudomonas alcaligenes* SRK14: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733340:** *Serratia marcescens* subsp. *sakuensis* WRK1: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733341:** *Exiguobacterium acetylicum* WRK2: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733342:** *Pseudomonas extremaustralis* WRK3: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733343:** *Staphylococcus sciuri* WRK4: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733344:** *Enterobacter tabaci* WRK7: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733345:** *Pseudomonas simiae* WRK8: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733346:** *Aeromonas hydrophila* subsp. *hydrophila* WRK9:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733347:** *Chromobacterium rhizoryzae* WRK10: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733348:** *Micrococcus yunnanensis* WRK11: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733349:** *Dermacoccus nishinomiyaensis* WRK12: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733350:** *Micrococcus aloeverae* WRK13: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

 **MN733351:** *Kocuria palustris* WRK14: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733352:** *Aquincola tertiaricarbonis* WRK15: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733353:** *Pseudomonas paralactis* WRK16: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN733354:** *Serratia marcescens* subsp. *sakuensis* WRK17: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN726744:** *Exiguobacterium artemiae* SG1: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

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**MN726747:** *Cryobacterium arcticum* SG8: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN726748:** *Arthrobacter pityocampae* SG10: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN726749:** *Arthrobacter ginsengisoli* SG14: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN726750:** *Flavobacterium tiangeerense* WG1: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN726751:** *Brevundimonas mediterranea* WG3:SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN726752:** *Acinetobacter tjernbergiae* WG4: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**MN726753:** *Arthrobacter ruber* WG5: SR.Joshi and U. Chettri: 16SrRNA: Partial: ~1400

**List of accessions obtained for Microbial Markers from National Centre for Biotechnology Information(NCBI), USA:**

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