

Dr Uma Sekar

Degree : MBBS, MD, DCP.,

Designation : Professor of Microbiology, Director of Laboratory Services and Associate Dean of Medical College

Area of research expertise with projects conducted : Clinical Microbiology, Serology, Antimicrobial resistance, Infection control, Antimicrobial stewardship

Projects conducted:

- Establishment of Antimicrobial resistance Surveillance network – Enterobacteriaceae (ICMR)
- Establishment of Antimicrobial resistance Surveillance network – Salmonella (ICMR)
- Establishment of Antimicrobial resistance Surveillance network – Gram negative non-fermenters(ICMR)
- Establishment of Antimicrobial resistance Surveillance network –MRSA(ICMR)
- Characterization of mechanisms of quinolone resistance in GNB (PhD research)-DST
- Characterization of aminoglycoside resistance in in GNB (PhD research)-DST Inspire
- Characterization of virulence factors and beta lactamase production in Klebsiella pneumoniae-SRU Chancellor fellowship grant(PhD Research)
- Testing for incidence of Microbes producing ESBLs study involving screening of Gram Negative bacteria causing serious nosocomial / ICU infections for production of ESBLs [TIME study]- Coinvestigator
- Multi-drug resistant Pseudomonas aeruginosa and Acinetobacter baumannii infections among hospitalised patients: risk factors and outcomes
- Efficacy of IV itraconazole vs fluconazole in candidemia. Multicentric international drug trial study.
- Efficacy of Meropenem in serious hospital infections. Multicentric national drug trial study.
- Minimal Inhibitory Concentration and Clinical correlation in typhoid fever treated with ofloxacin, ciprofloxacin and ceftriaxone.
- Efficacy of moxifloxacin in the treatment of bacterial conjunctivitis.
- Comparison of Voriconazole Vs Fluconazole in the treatment of Candidemia – International Multicentric trial.

- Linezolid Vs Vancomycin / Dicloxacillin in the prevention of colonization and treatment of gram positive catheter related blood stream infections.
- Testing for incidence of Microbes producing ESBLs study involving screening of Gram Negative bacteria causing serious nosocomial / ICU infections for production of ESBLs [TIME study]
- TEST study- Tigecycline evaluation and surveillance trial conducted by International Health Management Associates, Inc-
- STAR study- Evaluation of the susceptibility of Staphylococcal isolates including methicillin resistant Staphylococcus aureus (MRSA) to teicoplanin isolated from hospitalised patients in high risk areas
- Study for monitoring antimicrobial trends and in vitro susceptibility of Gram negative isolates from intraabdominal infection and Ertapenem trial(SMART study)
- MYSTIC study- 2007 (Meropenem yearly susceptibility test information collection) program International study
- Detection of Metallobetalactamases among carbapenem resistant Pseudomonas aeruginosa using MBL E-test strips
- Testing of natural compounds for activity pathogenic gram positive and gram negative isolates and estimation of minimal inhibitory concentration – Piramal life sciences 2009-10
- Antimicrobial resistance surveillance network –Indian Council of Medical Research 2011-12
- Co- investigator in TEST study- Tigecycline evaluation and surveillance trial conducted by International Health Management Associates, Inc
- Co- investigator in STAR study- Evaluation of the susceptibility of Staphylococcal isolates including methicillin resistant Staphylococcus aureus (MRSA) to teicoplanin isolated from hospitalized patients in high risk areas
- Co- investigator in Study for monitoring antimicrobial trends and in vitro susceptibility of Gram negative isolates from intra abdominal infection and Ertapenem trial(SMART study)
- Co-investigator in MYSTIC study 2007 (Meropenem yearly susceptibility test information collection program)
- Detection of Metallobetalactamases among carbapenem resistant Pseudomonas aeruginosa using MBL E-test strips

Awards and recognitions of faculty:

- Award for publication by the Sri Ramachandra University -7th place in the University

Workshops and training undergone by faculty:

- Workshop in ICT in teaching and learning- 6th and 7th March 2015
- Immunofluorescence in Autoimmune disease -16th May 2015
- Immunofluorescence in Autoimmune disease – 13th and 14th March 2014
- Research methodology and research ethics -30th August 2014
- Faculty development workshop

Membership in committee :

- Life member in Indian Association of Medical Microbiologist
- Life member in Academy of Clinical Microbiologist
- Member of Infection control committee- Sri Ramachandra medical centre
- Member of Antibiotics monitoring Committee
- Member of Academic, Audit and administration committee
- Member of Publication oversight committee
- Member of Women`s advancement cell
- Member of QIPST
- Life Member of the Indian Association of Medical Microbiologists (LM 1055)
- Member of the Hospital Infection Society ,India .(LM 374)
- Member of the Indian society of Peritoneal Dialysis
- Member of Asia pacific society of Infection control
- Past Treasurer of the TN & Pondy chapter of the Indian Association of Medical Microbiologists.

List of publications

1. Mariappan S, **Sekar U**, Kamalanathan A. Carbapenemase-producing Enterobacteriaceae: risk factors for infection and impact of resistance on outcomes. International Journal of Applied and Basic Medical Research. 2017 Jan;7(1):32.
2. M.Shanthi, **Uma Sekar** ,K Arunagiri, B,Sekar. Detection of NDM-1 carbapenemase in Pseudomonas aeruginosa in a single centre in southern India. India Journal of Medical research 2014;140:546-550.
3. M.Shanthi, **Uma Sekar**,K Arunagiri, HG. Brahmne. OXA -181 betalactamase is not a major mediator of carbapenem resistance in Enterobacteriaceae. Journal of clinical and diagnostic research. 2013; 7(9): 1986-88
4. M.Shanthi, **Uma Sekar** ,K Arunagiri, B,Sekar. Clonal diversity of New Delhi

- metalloβ-lactamase -1 producing Enterobacteriaceae in a tertiary care centre. Indian Journal of Medical Microbiology. 2013; 31(3): 242-249
5. Ramya Rengaraj , Shanthi Mariappan , **Uma Sekar** , Arunagiri Kamalanadhan. Detection of Vancomycin Resistance among Enterococcus faecalis and Staphylococcus aureus. Journal of Clinical and Diagnostic Research. 2016 , Vol-10(2): DC04-DC06
 6. Padmalakshmi Y.,Shanthi M.,**Uma Sekar**, Arunagiri K.,Pugazhenthien. Phenotypic and Molecular Characterisation of Carbapenemases in Acinetobacter Species in a Tertiary Care Centre in Tamil Nadu, India. National Journal of Laboratory Medicine. 2015 Vol 4(3): 55-60
 7. Abiramasundari VK, **Uma Sekar** , Shanthi. M et al . Detection of carbapenemase production in *Klebsiella pneumoniae* in a tertiary care centre . Int J Pharm Bio Sci 2015; 6(3): (B) 847 - 856
 8. Mariappan Shanthi, **Uma Sekar** et al . Disseminated Cryptococcosis presenting as community acquired pneumonia in a patient with acquired immunodeficiency syndrome. International Journal of Biomedical Research 2016; &(3): 150-152
 9. M.Shanthi, **Uma Sekar** .Unusual presentation of *Streptococcus pneumoniae* in Human immunodeficiency virus infection – A case report- Journal of association of physicians of India 2013;61:47-48
 10. Premamalini T, M.Shanthi, **Uma Sekar** et al. Disseminated *Mycobacterium fortuitum* infection associated with venous access device. IJSS case reports and reviews. 2015;1(11): 66-69
 11. M.Shanthi, **Uma Sekar**, K.S. Sridharan. Septic arthritis of hip caused by Salmonella typhi: A case report. Case reports in Infectious diseases 2012; ID 464527.
 12. **Uma Sekar**, M.Shanthi. Recent insights into the genetic diversity ,epidemiology and clinical relevance of Blastocystis species. The journal of Medical research 2015;1(1):33-39. [review article]
 13. **Uma Sekar**, Shanthi. M. Blastocystis hominis- consensus of treatment and controversies. Tropical parasitology, 2013;3(1): 35-39 [review article]
 14. Alagiri Sivaranjini, **Sekar Uma**, Kindo Anupma Jyoti, V. Shankar. *Cryptococcus gattii* meningitis in a young adult in South India: A case report. Int J Case Rep Images 2015;6(11):702–706.
 15. Anupma Jyoti Kindo, Divya Tharmalingam, **Uma Sekar**, Nagarjuna G, Muralidharan TR, S Thanikachalam. Aortic ring abscess caused by *Streptococcus pluranimalium*: A case report Journal of The Academy of Clinical Microbiologists 2015 ;17(2):127-129.
 16. Aravanan AC, **Uma Sekar** et al .Pattern and antimicrobial susceptibility of organisms causing blood stream infection in a neonatal intensive care unit from India. Journal of clinical Neonatology 2014;3(4): 200-04
 17. Rubina Zehra, P.Kennedy Kumar, KS.Sridharan, **Uma Sekar**. Nasal carriage of community acquired methicillin resistant Staphylococcus aureus in Indian school children. International Journal of Preventive Medicine. 2014.5(9):1210-11
 18. **Uma Sekar** et al. Identification of natural compounds which inhibit biofilm formation in clinical isolate of *Klebsiella pneumoniae*. Indian Journal of Experimental Biology.2013;51:764-72
 19. Santhosh P, Senthil N , **Uma Sekar** et al. A case of Pulmonary nocardiosis. Sri Ramachandra Journal of Medicine. 2013;6(1):37
 20. Harish Manoharan, Sribal Selvarajan, K. S. Sridharan, and **Uma Sekar**, “Pulmonary

- Infections Caused by Emerging Pathogenic Species of Nocardia,” Case Reports in Infectious Diseases, vol. 2019, Article ID 5184386
21. **Sekar U**, Madan M, Ranjitham M, Abraham G, Eapen G. Strongyloides hyperinfection syndrome--an unappreciated opportunistic infection. *The Journal of the Association of Physicians of India*. 2000 Oct;48(10):1017-9.
 22. Does the method of sampling influence the microbiological diagnosis of peritonitis in CAPD? *Indian journal of peritoneal dialysis* . Volume 2 ,August 1999
 23. Krishnamurthy R, Aparajitha C, Abraham G, Shroff S, **Sekar U**, Kuruvilla S. Renal aspergillosis giving rise to obstructive uropathy and recurrent anuric renal failure. *Geriatric nephrology and urology*. 1998 Oct 1;8(3):137-9.
 24. Anantharaman P, Abraham G, **Shekar U**, Moorthy A, Shroff S, Soundararajan P. Klebsiella endocarditis in the early post-operative period after renal transplantation. *Nephrology, dialysis, transplantation: official publication of the European Dialysis and Transplant Association-European Renal Association*. 1998 Oct 1;13(10):2665-6.
 25. Ranjitham M, Madan M, **Shekar U**, Mani R. Typhoid fever caused by a typical variants of Salmonella typhi--a preliminary report. *The Journal of communicable diseases*. 1999 Mar;31(1):29-34.
 26. Suppiah R, Abraham G, **Sekhar U**, Mathew M, Shroff S, Soundararajan P. Nocardial endophthalmitis leading to blindness in a renal transplant recipient. *Nephrology, dialysis, transplantation: official publication of the European Dialysis and Transplant Association-European Renal Association*. 1999 Jun 1;14(6):1576-7.
 27. Outcome of patients on CAPD with fungal peritonitis . *Indian journal of peritoneal dialysis .Vol 1 ,August 1998*
 28. Klebsiella endocarditis in the early post operator period after renal transplantation *Infectious diseases-review series in bacterial skin & soft tissue infections*. Issue 1/99 .
 29. Cyclospora cayetanensis-A new emerging coccidian parasite . *Journal of communicable diseases .Volume 31 ,No 2 , June 1999 .*
 30. Hydropneumothorax caused by Nocardia asteroides Case report . *Chest ,January 2004 .*
 31. Diagnostic dilemma in co-infections . *Journal of association of physicians of India October.Vol 49 2001.*
 32. Rao K, **Sekar U**, Iraivan KT, Abraham G, Soundararajan P. Blastocystis hominis—an emerging cause of diarrhoea in renal transplant recipients. *J Assoc Physicians India*. 2003 Jul;51(1):719-21.
 33. Abraham G, Mathews M, Sekar L, Srikanth A, **Sekar U**, Soundarajan P. Tuberculous peritonitis in a cohort of continuous ambulatory peritoneal dialysis patients. *Peritoneal dialysis international*. 2001 Jan 1;21(Suppl 3):S202-4.
 34. Renal abscesses Review of literature and report of 5 cases. *Journal of association of physicians of India*
 35. Recurrent peritonitis in chronic peritoneal dialysis. *Indian Journal of Peritoneal Dialysis . Vol.1.April 2003.23-26 .*
 36. Hemalatha V, **Sekar U**, Kamat V. Detection of metallo betalactamase producing Pseudomonas aeruginosa in hospitalized patients. *Indian Journal of Medical Research*. 2005 Aug 1;122(2):148.
 37. Two cases of splenic abscesses in CAPD patients with diverse outcomes. *Indian journal of peritoneal dialysis*. Vol 7. August 2004.
 38. Subcutaneous infections by Phoma species in a renal allograft recipient- a case report. *Indian Journal of Practicing Doctor- vol3(1) 2006*

39. Padma M, Lokeswari TS, **Sekar U**, Kamat V. Prevalence of Extended Spectrum Beta-Lactam Resistance among bacteria causing hospital infections-Detection using PCR. Sri Ramachandra Journal Of Medicine.:14.
40. Toleman MA, Vinodh H, **Sekar U**, Kamat V, Walsh TR. blaVIM-2-harboring integrons isolated in India, Russia, and the United States arise from an ancestral class 1 integron predating the formation of the 3' conserved sequence. Antimicrobial agents and chemotherapy. 2007 Jul 1;51(7):2636-8.
41. Shanthi M, **Sekar U**. Multi-drug resistant Pseudomonas aeruginosa and Acinetobacter baumannii infections among hospitalized patients: risk factors and outcomes. The Journal of the Association of Physicians of India. 2009 Sep;57:636-8.
42. Shanthi M, **Sekar U**. Antimicrobial susceptibility pattern of methicillin resistant staphylococcus aureus at sri ramachandra medical centre. Sri Ramachandra J Med. 2009 Jun;2(2).
43. **Uma sekar**, M. Shanthi, The expanding family of Beta lactamases. *Journal of the academy of Clinical Microbiologist* 2009, Vol:11(2):72-86
44. Revathy S, Sridharan KS, Elumalai AS, **Uma Sekar**. Phenotypic detection of High-Level Aminoglycoside Resistance (HLAR) in Enterococcus species in a tertiary care centre. Biosciences, Biotechnology Research Asia. 2009;6(2):751-6.
45. Kamatchi C, Magesh H, **Sekar U**. Identification of clonal clusters of Klebsiella pneumoniae isolates from Chennai by extended spectrum beta lactamase genotyping and antibiotic resistance phenotyping analysis.
46. Chaudhuri BN, Rodrigues C, Balaji V, Iyer R, **Sekar U**, Wattal C, Chitnis DS, Dhole TN, Joshi S. Incidence of ESBL producers amongst Gram-negative bacilli isolated from intra-abdominal infections across India (based on SMART study, 2007 data). JAPI. 2011 May;59(16):1-6.
47. M Shanthi, **Uma Sekar** Extended spectrum beta lactamase producing Escherichia coli and Klebsiella pneumoniae : Risk factors for infection and impact of resistance on outcomes.. Journal of Association of Physicians of India, December 2010. special issue on antibiotic resistance
48. M. Shanthi, **Uma Sekar**, K. Arunagiri, B. Sekar. OXA beta lactamase mediated carbapenem resistance in Acinetobacter baumannii . Indian Journal of Medical Microbiology 2011;29(3):269-74
49. M. Shanthi, **Uma Sekar** . In vitro Activity of Tigecycline Against Gram Positive and Gram Negative Isolates in a Tertiary Care Hospital. Journal of clinical and diagnostic research. 2011 .5(8): 1559-63.
50. M. Shanthi, **Uma Sekar** . Minimal inhibitor concentration of eight antimicrobial agents against hospital isolates of Gram negative bacteria in a tertiary care center. Journal of Academy of clinical Microbiologist; June 2011;13(1):4-14.
51. M. Shanthi, **Uma Sekar**. Extended spectrum beta lactamase producing Escherichia coli and Klebsiella pneumoniae: risk factors for infection and impact of resistance on outcomes. Supplement to Journal of Association of physicians of India Dec 2010;58:41-44.
52. M. Shanthi, **Uma Sekar**. Multidrug resistant Pseudomonas aeruginosa and Acinetobacter baumannii infections among hospitalized patients: risk factors and outcomes. Journal of Association of physicians of India. Sept 2009;57:636-640.
53. M. Shanthi, **Uma Sekar** . Antimicrobial susceptibility pattern of methicillin resistant Staphylococcus aureus at Sri Ramachandra Medical Centre. Sri Ramachandra Journal of Medicine June 2009; vol II(2):1-4

54. **Uma Sekar**, M.Shanthi. The expanding family of beta lactamases. The Journal of the academy of clinical Microbiologists 2009;11(2): 72-86
55. **Sekar U**, Srikanth P, Kindo AJ, Babu VP, Ramasubramanian V. Increase in minimum inhibitory concentration to quinolones and ceftriaxone in salmonellae causing enteric fever. The Journal of communicable diseases. 2003 Sep;35(3):162-9.
56. Epidemiology and antimicrobial susceptibility profile of aerobic and facultative gram negative bacilli isolated from patients with intraabdominal infections in the Asia Pacific region- 2008 Results from SMART. Int J Antimicro Agents 2010 Nov :36(5): 408-14
57. M.Shanthi, **Uma Sekar** ,K Arunagiri, B,Sekar. Bla_{VIM} and bla_{IMP} mediated carbapenem resistance in *Pseudomonas* species and *Acinetobacter* species in a tertiary care hospital in India- Journal of infections in developing countries 2012;6(11):757-762
58. M.Shanthi, **Uma Sekar** ,K Arunagiri, B,Sekar .Detection of Amp C genes encoding for beta-lactamases in *Escherichia coli* and *Klebsiella pneumonia*. Indian Journal of Medical Microbiology 2012;30(3):290-295
59. A study of incidence and risk factors in surgical site infections *International Medical Journal April 2016: (3) 4, 386-389*
60. A study on evaluation of appropriateness of antibiotics used in the Intensive care settings of a tertiary care teaching hospital *Int. J. Pharm. Sci. Rev. Res: 28 (2) Sept-Oct 2014 28-34*
61. **Sekar U**, Srikanth P, Kindo AJ, Babu VP, Ramasubramanian V. Increase in minimum inhibitory concentration to quinolones and ceftriaxone in salmonellae causing enteric fever. The Journal of communicable diseases. 2003 Sep;35(3):162-9.
62. Payal P, **Sekar U**, Sujatha S, Kindo AJ. Meningitis caused by *Cryptococcus neoformans* and Herpes simplex virus: Dual infection in an immunocompetent patient. Journal of The Academy of Clinical Microbiologists. 2016 Jul 1;18(2):114.
63. M.Shanthi, **Uma Sekar** ,K Arunagiri, B,Sekar . Occurrence of New Delhi Metallobetalactamase mediated carbapenem resistance among *Acinetobacter* species in intensive care units . International Journal of Recent Trends in Science And Technology,. 2016;21(2) Volume 21: 114-118
64. Varghese DS, **Sekar U**, Shanthi M, Arunagiri K, Vishwanathan A, Vidhya VM, Sekar B. Concurrent occurrence of Amp C and Cefotaxime (CTX)-M in clinical isolates of enterobacteriaceae. Journal of The Academy of Clinical Microbiologists. 2014 Jan 1;16(1):11.
65. Risk factors for Community acquired urinary tract infections by Extended beta lactamase producing organisms in children. *J. Paed. Inf. Dis 2015 :10:45-46*
66. Chowdhury G, Joshi S, Bhattacharya S, **Sekar U**, Birajdar B, Bhattacharyya A, Shinoda S, Ramamurthy T. Extraintestinal Infections Caused by Non-toxigenic *Vibrio cholerae* non-O1/non-O139. *Frontiers in microbiology*. 2016 Feb 11;7:144.
67. Visalachy S, Palraj KK, Kopula SS, **Sekar U**. Carriage of multidrug resistant bacteria on frequently contacted surfaces and hands of health care workers. Journal of clinical and diagnostic research: JCDR. 2016 May;10(5):DC18.
68. Aishwarya Ramachandran, Mariappan Shanthi, **Uma Sekar**. Detection of blaCTX-M Extended Spectrum Betalactamase Producing *Salmonella enterica* Serotype Typhi in a Tertiary Care Centre . Journal of clinical and diagnostic research. 2017; 11(9): DC21-DC24

69. Geetha PV, Aishwarya K, Shanthi M, **Uma Sekar**. Plasmid Mediated Fluoroquinolone Resistance Determinants in Clinical Isolates of *Escherichia coli*. *Int.J.Adv.Microbiol.Health.Res.*, 2019; 3(2):1-6.
70. Remya P, Shanthi M, **Sekar U**. Prevalence of *bla*_{KPC} and its occurrence with other beta-lactamases in *Klebsiella pneumoniae*. *J Lab Physicians* 2018;10:387-91.
71. Remya P, Shanthi M, **Sekar U**. Occurrence and characterization of hyperviscous K1 and K2 serotype in *Klebsiella pneumoniae*. *J Lab Physicians* 2018;10:283-8
72. Remya. PA, Shanthi. M, **Uma Sekar** Phenotypic and genotypic characterisation of extended Spectrum beta-lactamases (ESBLs) and amp C beta- lactamases among *Klebsiella pneumoniae*. *Int J Pharma Bio Sci* 2018 January; 9(1): (B) 341 – 347
73. M.Shanthi, **Uma Sekar**, Arunagiri.K. Carbapenemase producing Enterobacteriaceae: Risk factors for infection and impact of resistance on outcomes. *International Journal of Applied and Basic Medical Research* .2017; 7(1) :32-39
74. Aishwarya Ramachandran, Mariappan Shanthi, **Uma Sekar**. Detection of blaCTX-M Extended Spectrum Betalactamase Producing *Salmonella enterica* Serotype Typhi in a Tertiary Care Centre . *Journal of clinical and diagnostic research*. 2017; 11(9): DC21-DC24
75. Santhi Gunasekaran, Ananya Tupaki-Sreepurna, Vijayakishore Thanneru, **Uma Sekar**, Mariappan Shanthi, Anupma Jyoti Kindo. A Rare Case of *Curvularia Hawaiiensis* in the Ear Following Trauma . *Journal of Medical Sciences and Clinical research* . Volume 05 Issue 09 September 2017
76. Mathivanan KM, Sasikumar S, Periakaruppan G, Balakrishnan R, **Sekar U**. HRCT thorax findings of Influenza A H1N1 pneumonia in a tertiary care hospital in South India. *J Evid Based Med HealthC* 2017 : Vol 4(52) June 29; 2349-62
77. Pushparaj Selvadoss P, Nellore J, Balaraman Ravindrran M, **Sekar U**, Tippabathani J. Enhancement of antimicrobial activity by liposomal oleic acid-loaded antibiotics for the treatment of multidrug-resistant *Pseudomonas aeruginosa*. *Artificial cells, nanomedicine, and biotechnology*. 2018 Feb 17;46(2):268-73.
78. Pushparaj Selvadoss P, Nellore J, Balaraman Ravindrann M, **Sekar U**. Novel pyochelin-based PEGylated liposomes for enhanced delivery of antibiotics against resistant clinical isolates of *Pseudomonas aeruginosa*. *Artificial cells, nanomedicine, and biotechnology*. 2018 Nov 17;46(8):2043-53.
79. Remya P A, Shanthi M, **Sekar U**. Characterisation of virulence genes associated with pathogenicity in *Klebsiella pneumoniae*. *Indian J Med Microbiol* 2019;37:210-8

GENBANK Publications:

- JF702917- *Klebsiella pneumoniae* strain B2417/2010 plasmid mediated metallobeta-lactamase-1 (blaNDM-1) gene partial cds
- JF 702918- *Klebsiella pneumoniae* strain MS1968/2010 plasmid mediated metallobeta-lactamase-1 (blaNDM-1) gene partial cds
- JF 702919-*Acinetobacter baumannii* strain MS2671/2010 classI integron metallobeta-lactamase-1 (bla VIM) gene partial cds
- JF 702920-*Acinetobacter baumannii* strain MS2773/2010 classI integron metallobeta-lactamase-1 (bla VIM) gene partial cds
- JF 702921-*Acinetobacter baumannii* strain MS2536/2010 classI integron metallobeta-lactamase-1 (bla VIM) gene partial cds
- JF 702922-*Pseudomonas aeruginosa* strain MS4612/2010 classI integron metallobeta-lactamase-1 (bla VIM) gene partial cds
- JF 702923- *Pseudomonas aeruginosa* strain MS2333/2010 classI

integron metalloβ-lactamase-1 (bla VIM) gene partial cds

- JX 125053- *Klebsiella pneumonia* strain MS3242/SRMC/2010 carrying NewDelhi metalloβ-lactamase-1 (blaNDM-1) gene partial cds
- JX 215367- *Klebsiella pneumonia* strain MS4506/SRMC/2010 carrying NewDelhi metalloβ-lactamase-1 (blaNDM-1) gene partial cds
- JX 215368- *Escherichia coli* strain MS1772/SRMC/2010 carrying NewDelhi metalloβ-lactamase-1 (blaNDM-1) gene partial cds