

BIOGRAPHICAL SKETCH

- **NAME:** Dr. Ram Das
- **POSITION:** Scientist C
- **GROUP:** Host-Parasite Biology (Molecular Biology)
- **ADDRESS:** ICMR-National Institute of Malaria Research, Dwarka, Sector-8, New Delhi-10077
- **EMAIL:** drdas_3@yahoo.co.in
- Education: Ph.D.; Year 2004; Specialization: Molecular Biology

A. Research Experience

I have been in research with over fourteen years of experience in microbiology and molecular biology, with having extensive skills in molecular mechanisms of drug resistance. I have been involved in the various research project related to detection of drug resistance of microbes by microbiological and molecular methods. Prior to joining of National Institute of Malaria Research (NIMR) I have been worked on (i) anti-tubercular agents activities, particularly in molecular mechanisms of multi drug resistant (MDR) isolates of *M. tuberculosis*, *M. leprae*. (ii) Early detection of Mycobacterial species and other microorganisms by molecular methods such as 16S rRNA gene PCR and DNA sequencing. (iii) Diagnosis of bacilli by *in-situ* hybridization approaches for characterization of histological specimen.(iv) Molecular epidemiology for strain variation in *Mycobacterium tuberculosis* and *M. leprae* by IS6110, DNA fingerprinting and microsatellite markers. (v) Host and pathogen interaction in leprosy and tuberculosis patients.

Since 2012, I am working on malaria (i) As a PI /Co-PI carried out the research projects related development of molecular tools for differentiation between relapse and re-infection of *Plasmodium vivax* malaria and pattern of transmission of *vivax* malaria. (ii) Developing molecular tools for detection of asymptomatic malaria. (iii) Initiating the research project on gametocyte biomarker for detection of *Plasmodium falciparum* infectious reservoirs in relation to malaria control. (iv) Initiated the research project development of molecular diagnostics tool for identification of non-human primates malaria parasites.(v). Molecular epidemiology of dengue virus. (vi) Translational research on control of *vivax* malaria by anti-relapse drug therapy in field area.

B. Received training: 14

C. Membership of National body: 2

D. Research Training received: 14

E. Work published in last

1. Savargaonkar D, Sinha S, Srivastava B, Nagpal BN, Sinha A, Shamim A, **Ram Das**, Pande V, Anvikar A R, Valecha N. An Epidemiological study of dengue and its coinfections in Delhi. *International Journal of Infectious Diseases* **2018**,74:41-46. <https://doi.org/10.1016/j.ijid.2018.06.020>.
2. **Ram Das**, Savargaonkar D, Avanikar AR, Singh OP, Prajapati S Valecha N. Determining the genetic variability of Plasmodium vivax by merozoite surface protein-3 α gene from Delhi North India. *Malaria Journal* 2018 (in manuscript).
3. Mittal M , Biswas SK , Singh V Arela N , Katoch VM , **Ram Das** , Yadav VS , Bajaj B, Mohanty KK Association of Toll like receptor 2 and 9 gene variants with pulmonary tuberculosis: exploration in a northern Indian population. *Molecular Biology Reports* .**2018**, DOI: 10.1007/s11033-018-4182-z.
4. Kumar D, Kumar G, **Ram Das** Veena A. Strong larvicidal potential of silver nanoparticles (AgNPs) synthesized using Holarrhena antidysenterica (L.) Wall. bark extract against malarial vector, Anopheles stephensi Liston. *Pro Saf Envir Prot* 2018, 116: 137–148. <https://doi.org/10.1016/j.psep.2018.02.001>.
5. Kumar D, Kumar G, **Das R**, Kumar R, Agrawal V. In vitro elicitation, isolation, and characterization of conessine biomolecule from Holarrhenaantidysenterica (L.) Wall. callus and its larvicidal activity against malaria vector, Anopheles stephensi Liston. *Environ Sci Pollut Res* . **2018**, 25:6783-6796. doi: 10.1007/s11356-017-1038-3.
6. Mercy Aparna , Aparna S., Sarada I, **Ram Das**. Assessment of Sputum Quality and Its Importance in the Rapid Diagnosis of Pulmonary Tuberculosis. *Archi Clin Microbiol* **2017**, 8:1-3: DOI: 10.4172/1989-8436.100053.
7. **Ram Das**, Dhiman RC, Savargaonkar D, Anvikar AR Valecha N. Genotyping of *Plasmodium vivax* by minisatellite marker and its application in differentiating relapse and new infection. *Malaria Journal* **2016**, 15:115. DOI: 10.1186/s12936-016-1139-3.
8. Devender S Chauhan, R Sharma, D parashar, P Sharma, Ram Das, M Chahar, AV Singh, K Katoch, VM Katoch Early Detection of multidrug resistance (MDR) Mycobacterium tuberculosis in a single tube within a single tube with in-house designed fluorescence resonance energy transfer (FRET) probes using real-time PCR. *Ind J Exp Biol* 2016; 4:229-236.
9. Raizada N, Sachdeva KS, Malhotra B, Thakur R, Reddy K, Chauhan DS, Dave P, Mohammed F, **Das R**, Sharma P, Sharma SK, Wares F, Sahu S, O'Brien R, Mundade Y, Dewan PK, Paramasivan CN. Proficiency assessment mechanism for Line-Probe Assay testing for diagnosis of Multidrug-Resistant Tuberculosis in India. *Int J Pathol Clin Res* 2015, 1:004.
10. Raizada N, Sachdeva KS, Chauhan DS, Malhotra B, Reddy K, Dave PV, Mundade Y, Patel P, Ramachandran R, **Ram Das**, Solanki R, Douglas FW, Sahu S, O'Brien R, Paramasivan CN, Dewan PK. A Multi-Site Validation in India of the Line Probe Assay for the rapid diagnosis of Multi-Drug Resistant Tuberculosis directly from specimens. *PLoS ONE*. 2014, 9: e88626. doi:10.1371/journal.pone.0088626.
11. Bharti R, **Das R** , Sharma P , Katoch K, Bhattacharya A. MTCID: A database of genetic polymorphisms in clinical isolates of *Mycobacterium tuberculosis*. *Tuberculosis* 2012, 92:166-72.
12. Singh V, Gaur R, Mittal M, Biswas S, **Das R**, Girdhar BK, Bajaj B, Katoch VM, Kumar A and Mohanty KK. Absence of nucleotide-binding oligomerization domain-

- containing protein 2 variants in patients with leprosy and tuberculosis. *Int J Immunogenet* 2012,39:353-56.
13. **Das R** Report of meeting on sentinel surveillance for drug resistance in Leprosy. A report 22-23 August 2011, World Health Organization SEA-GLP-2012.4:7
 14. Faujdar J, Gupta P, Natrajan M, Das R, Chauhan DS, Katoch VM, Gupta UD. *Mycobacterium indicus pranii* as stand-alone or adjunct immunotherapeutic in treatment of experimental animal tuberculosis. *Indian J Med Res* 2011, 134: 696-703.
 15. Lavania M, Katoch K, Sharma R, Sharma P, **Das R**, Gupta AK, Chauhan DS & Katoch VM . Molecular typing of *Mycobacterium leprae* strains from northern India using short tandem repeats. *Indian J Med Res* 2011, 133: 618-626.
 16. Narang R, Narang P, Jain AP, Mendiratta DK, Joshi R, **Das R**, Katoch VM. *Mycobacterium avium* bacteremia and dual infection with *Mycobacterium avium* and *Mycobacterium wolinskyi* in the gut of an Aids patient – first case report. *Indian J Tubercul* 2010, 57:148-151.
 17. Singh M, G.P.S. Jadaun, **Das R**, K. Srivastava, Vipin Chauhan, Ritu Mishra, Kavita Gupta, Surya Nair, D.S. Chauhan, V.D. Sharma, K. Venkatesan & V.M. Katoch. Effect of efflux pump inhibitors on drug susceptibility of ofloxacin resistant *Mycobacterium tuberculosis* isolates. *Indian J Med Res* 2011, 133:535-540.
 18. Narang, R Narang P, Jain A P, Mendiratta D K, Joshi R, Lavania M, **Das R**, Katoch V M. Disseminated disease caused by *Mycobacterium simiae* in AIDS patients: a report of three cases. *Clin Microbiol Infect* 2010, 16: 912–914.
 19. **Das R** Sentinel Surveillance for Drug Resistance in Leprosy. Report of the Workshop Paris, France, 26-27 October, World Health Organization 2009, SEA-GLP-2010.2: 13
 20. **Das R**, Gupta P, Shingh P, Chauhan D S, Katoch K & Katoch VM. Association of mutations in *rpsL* gene with high degree of streptomycin resistance in clinical isolates of *Mycobacterium tuberculosis* in India. *Indian J Med Res* 2009, 129: 108-110.
 21. Dave S, Faujdar J, Kumar P, Gupta P, Das R, Parasher D, Chauhan DS, Natrajan M, Gupta UD & Katoch VM. Comparative growth pattern of multi drug resistance versus susceptible isolates of *Mycobacterium tuberculosis* in mice lungs. *Indian J Med Res* 2009, 130: 58-62.
 22. Singh M, Chauhan DS, Gupta P, **Das R**, Srivastava RK, Upadhyay P, Singh P, Srivastava K, Faujdar J, Jadaun GPS, Yadav VS, Sharma VD, Venkatesan K, Sachan S, Sachan P, Katoch K & Katoch VM. *In vitro* effect of fluoroquinolones against *Mycobacterium tuberculosis* isolates from Agra & Kanpur region of north India. *Indian J Med Res* 2009, 129: 542-547.
 23. Parashar D, **Das R**, Chauhan DS, Sharma VD, Lavania M, Yadav VS, Chauhan SVS & Katoch VM. Identification of environmental mycobacteria isolated from Agra, north India by conventional & molecular approaches. *Indian J Med Res* 2009, 129: 424-431.
 24. Garg KB, Ganguli I, **Das R** & Talwar GP. Spectrum of *Lactobacillus* species present in healthy vagina of Indian women. *Indian J Med Res* 2009, 129: 652-657.
 25. Jadaun GPS, **Das R**, Upadhyay P, Chauhan DS, Sharma VD & Katoch VM. Role of *embCAB* gene mutations in ethambutol resistance in *Mycobacterium tuberculosis* isolates from India. *Int J Antimicrob Agents* 2009, 33: 463-486.
 26. Lavania M, Katoch K, Singh HB, **Das R**, Gupta AK, Sharma R, Chauhan DS, Sharma VD, Sachan P, Sachan S and Katoch VM. Predominance of three copies of tandem repeats in *rpoT* gene of *Mycobacterium leprae* from North India. *Infection Genetics Evol* 2007, 348; 1-5.

27. Chauhan DS, Sharma VD, **Das R**, Aggarwal BM, Malhotra B, Jain A, Sharma M, Kataria VK, Aggarwal JK, Hanif H, Shahani A, Katoch VM. Molecular typing of Mycobacterium tuberculosis isolates from different parts of India based on IS6110 element polymorphism using RFLP analysis. *Indian J Med Res* **2007**, 125: 577-78.
28. Parashar D, **Das R**, sharma VD, Chauhan DS, Katoch VM Pathogenic rapidly growing - Mycobacterium manitobense in the environment of Agra, north India. *Indian J Med Res* **2007**, 126:230-2.
29. Jadaun JPS, Agarwal C, Sharma H, Ahmed Z, Upadhyay P, Faujdar J, Gupta AK, **Das R**, Gupta P, Chauhan DS, Sharma VD & Katoch VM. Detection of ethambutol MICs for *Mycobacterium tuberculosis* and *Mycobacterium avium* isolates by resazurium microtiter assay. *J Antimicrob Chemo* **2007**, 60: 152-155.
30. Singh P, Wesley C, Jadun GPS, Malonia SK, **Das R**, Upadhyay P, Faujdar J, Sharma P, Gupta P, Mishra AK, Chauhan DS, Sharma VD, Gupta UD, Venkatesan K and Katoch VM. Comparative evaluation of Lowenstein-Jensen proportion method, BacT/ALERT 3D system, and enzymatic pyrazinamidase assay for pyrazinamide susceptibility testing of *Mycobacterium tuberculosis*. *J Clin Microbiol* **2007**, 45: 76-80.
31. **Das R**, Katoch K, Singh GPJ, Gupta P, Sharma VD, Malhotra B, Garg A, Ayyagari A, Chauhan DS, Singh HB, Yadav P, and Katoch VM. Association of mutations in *embB* locus with high degree of ethambutol-resistance in clinical isolates of *Mycobacterium tuberculosis* in Indian. *Curr Sci* **2006**, 91: 923-925.
32. Gupta P, Singh GPJ, **Das R**, Gupta UD, Srivastava K., Chauhan A, Sharma VD, Chauhan DS, and Katoch VM. Simultaneous ethambutol and isoniazid resistance in clinical isolates of *Mycobacterium tuberculosis*. *Indian J Med Res* **2006**, 123: 125-130.
33. Siddiqi N, **Das R**, Pathak N, Banerjee S, Ahmed N, Katoch VM, Hasnain SE. *Mycobacterium tuberculosis* Isolate with a Distinct Genomic Identity Overexpresses a Tap-Like Efflux Pump. *Infection* **2004**, 32: 109 – 111.
34. Srivastava K, **Das R**, Jakhmola, Gupta P, Chauhan DS, Sharma VD, Singh HB, Sachan AS, Katoch VM. Correlation of mutations detected by INNO-LiPA with levels of rifampicin resistance in *Mycobacterium tuberculosis*. *Indian J Med Res* **2004**, 120:100-105.
35. Ahmed N, Alam M, Rao KR, Kauser F, Kumar NA, Qazi NN, Sangal V, **Das R**, Katoch VM, Murthy KJR, Suneetha S, Sharma SK, Sechi LA, Gilman RH, Hasnain SE Molecular Genotyping of a Large, Multicentric Collection of Tubercle Bacilli Indicates Geographical Partitioning of Strain Variation and Has Implications for Global Epidemiology of *Mycobacterium tuberculosis*. *J. Clin. Microbiol* **2004**, 42: 3240-3247.
36. Natrajan M, Katoch K, Katoch VM, Sharma VD, Singh D, **Das R**, Chauhan DS. *In situ* hybridization in the histological diagnosis of early and clinically suspected leprosy. *International J Leprosy* **2004**, 72: 296-305.
37. Chauhan DS, Parashar D, **Das R**, Sharma VD, Katoch VM. Confirmation of identification of non-tuberculous mycobacterial isolates by using 16S rRNA sequencing. *J Immunol Immunopathology* **2004**, 6 : 83-84.
38. Sharma N, Gupta P, **Das R** Chauhan DS, Sharma VD, Katoch VM. Molecular characterization of katG gene mutations in isoniazid resistant *Mycobacterium tuberculosis* isolates by automated DNA sequencing. *J Immunol. Immunopathology* **2004**, 6: 92-93, 20.
39. **Das R**, Srivastava K, Gupta P, Sharma VD, Singh D, Chauhan DS, Singh HB, Katoch VM. Comparison of Etest with MIC method on Lowenstein Jensen medium for susceptibility testing of *Mycobacterium tuberculosis*. *Cur Sci* **2003**, 85: 191-193,2003.

40. Malohotra B, Pathak S, Vyas L, Katoch VM, Chauhan DS, Singh D, Sharma VD, **Das R**. Drug Susceptibility Profiles of *Mycobacterium tuberculosis* Isolates at Jaipur. *Indian J Med Microbiol* 2002, 20 : 76-78.
41. Singh HB, Chauhan DS, Singh D, **Das R**, Srivastva K, Kumar A, Katoch VM, Sharma V.D. Rapid Discrimination of Indian Isolates of *Mycobacterium tuberculosis* by Random Amplified Polymorphic DNA (RAPD) Analysis-A Preliminary Report. *Indian J Med Microbiol* 2002, 20:69-71.
42. Gupta P, Katoch VM, Gupta UD, Chauhan DS, **Das R**, Singh D, Srivastava K, Singh HB. A preliminary report on characterization and identification of Non Tuberculous Mycobacteria (NTM) on the basis biochemical tests and protein/isoenzyme electrophoretic patterns. *Indian J Med Microbiol* 2002, 20: 137-140.
43. Srivastva K, **Das R**, Sharma VD, Singh D, Singh HB, Katoch VM. Relevance of degree of rifampicin resistance in *Mycobacterium tuberculosis*. *Ind J Med Microbiol* 2001, 19 : 36-39.
44. Gupta U.D, Katoch K, Sharma RK, Singh HB, Natrajan M, Singh D, Sharma VD, Chauhan DS, **Das R**, Srivastava K, Katoch VM. Analysis of quantitative relationship between viability determination in leprosy by MFP, ATP bioluminescence and gene amplification assays. *Int J Leprosy* 2001, 69: 328-334.
45. Siddiqi N, Shamim M., Amim A, Chauhan DS., **Das R**, Srivastva K., Singh D, Sharma VD, Katoch VM, Sharma SK, Hanief M., Hasnain SE. Typing of drug resistant isolates of *Mycobacterium tuberculosis* from India using IS 6110 element reveals substantive polymorphism. *Infection Genetics and Evolution* 2001, 13:1-8.
46. Dandapat P, Verma R, Vantakesn K, Sharma VD, Singh HB, **Das R**, Katoch VM. Rapid Characterization of *Mycobacterium bovis* by its lipid profiles by thin layer Chromatography. *Vet Microbiol* 199, 65, 145-151.
47. Katoch K, Jain S, Chauhan DS, Singh DS, **Das R**, Gupta P, Sharma VD, Katoch VM, Sachan AS, Pandey A, Benara SK and Padam Singh. Experience of detection and treatment of tuberculosis in a fixed area of Ghatampur, Kanpur, UP. *Health Administrator*. 2003, 15:124-126.