

## Dr. VIJAY NEMA

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### Key Words

Microbiology, Molecular Biology, Diagnostics, Metagenomics



### Summary of Accomplishments

#### ***Working as Scientist 'D' at National AIDS Research Institute, Pune. Joined in Feb2009***

- ***In-charge***, Division of Molecular Biology.
- Molecular diagnostics of AIDS related infections.
- Development of new diagnostic tools for AIDS related infections (bacterial, parasitic and mycobacterial infections).
- Conservation pattern of existing and new targets of drugs in Mycobacterium tuberculosis.
- Metagenomic analysis of patient samples for screening and impact assessment of microbial populations.

#### ***Post Doctoral Fellow at Computational Structural Biology, Vanderbilt University. May 2012-August 2012.***

- Fogarty international postdoctoral fellowship for short term training.
- Protein structural biology and docking.

#### ***Worked as Post Doctoral Fellow at Institute of Life Sciences, Hyderabad. June 2007-Jan2009***

- New drug discovery and vaccine development against *M. tuberculosis*.
- Anticancer compound screening using various cell lines.
- Screening antiinfective agents using various bacterial pathogens.
- Screening newer targets for antibacterial drug design.

#### ***Assistant Professor: College of Life Sciences, CHRI, Gwalior Nov 2006-Apr2007***

- Assistant Professor, Biotechnology at College of life Sciences, Cancer Hospital and Research Institute, Gwalior, Madhya Pradesh, India
- Taught Biotechnology to B.Sc and M.Sc students and guided a few dissertations.

#### ***Senior Research Fellow at Defence R & D Establishment: Nov 2004-Nov 2006***

- Developed an ELISA based diagnostic system for enterotoxin B.
- Superantigenicity alleviation of enterotoxin B through site-directed mutagenesis.

#### ***Junior Research Fellow at Defence R & D Establishment: Nov.2002- Nov2004.***

- Characterized a large number of environmental and clinical isolates of *Staphylococcus aureus* and *Vibrio cholerae*.

- Cloning and expression of enterotoxin B gene.
- Optimized methods for purification of native and recombinant enterotoxin B.
- Generation of antibodies in laboratory animals.

**Research Scholar at Dept. of Applied Microbiology and Biotechnology, Dr. H.S. Gour University Sagar: Nov 2001 to Oct 2002.**

- Screening of fungi for the isolation of species producing pharmaceutically important polyunsaturated fatty acids.
- Taught various topics of Applied Microbiology and Biotechnology to post-graduate students.

**Trainee at TERI, The Energy and Resources Institute (Formerly: Tata Energy Research Institute): July – Aug. 2000.**

- Microbial degradation of chlorinated pesticide-Endosulfan. A bacterial consortium was developed for the degradation of endosulfan to its non-toxic components.

### Academic Profile

**Ph.D.** (Microbiology), Jiwaji University, Gwalior, India 2007

**Project:** "Isolation and characterization of enterotoxin B producing *Staphylococcus aureus* and development of detection system."

Research work carried out at Defence Research and Development Establishment, Gwalior, Madhya Pradesh, India. .

#### **Work profile:**

- Isolation and characterization of enterotoxigenic *Staphylococcus aureus*
- Optimisation of conditions for the maximum production of enterotoxin.
- Purification of enterotoxin from wild strains as well as from recombinant clones.
- Assessment of biological activity of enterotoxin through T-cell proliferation assay using non-radioactive method.
- Immunization of laboratory animals for antibody production against SEB.
- Development of immunodetection system; detection limit is 0.4ng of pure SEB.
- Devised an efficient and simple method of protein purification for lower scale production of purified SEB (**patent filed**).
- Superantigenicity alleviation of SEB through site directed mutagenesis.
- Environmental surveillance for enterotoxigenic *S. aureus* and toxigenic *V. cholerae*.

**Post Graduate Diploma (Bioinformatics)**, Bioinformatics Institute of India, Noida, India. Feb 2002-2003 (*First Division*)

**Subjects:** Introduction to Bioinformatics, Biostatistics, Biological Database and their Management, Industrial fermentation technology, Bioinformatics Softwares, Bio computing Languages, Computational Biology.

**M. Sc.**, (Applied Microbiology and Biotechnology) Dr. Hari Singh Gour University Sagar, Madhya Pradesh, India. 1999-2001, (*First Division*).

**Dissertation** at **TERI**, New Delhi, on 'microbial degradation of chlorinated pesticide- Endosulfan.' Isolated a bacterial consortium from the site of heavy use of the pesticide and selectively enriched the population that showed ability of degrading the pesticide.

**B. Sc.**, (Industrial Microbiology, Botany, Chemistry) 1996-1999, Dr. Hari Singh Gour University Sagar, Madhya Pradesh, India. (*First Division*)

**Higher Secondary**, (10+2, Science) Army School, Sagar. 1996 (*First Division*)

### Research projects at NARI

#### **As principal investigator**

- Molecular probing of the Mycobacterium tuberculosis isolates with respect to their resistance pattern and conservation pattern of new drug targets. *Completed (2013-2014)-Extramural-ICMR*  
Sequencing and impact assessment of mutations on protein folding for the target genes.
- Gut Flora and HIV Infection. Intramural. *Ongoing*  
Bacterial community analysis using next gen sequencing (Roche454 sequencing; Ion torrent) for various AIDS patient samples and controls.

#### **As co-Principal investigator**

- An assessment of implementation of Airborne Infection Control (AIC) Measures in HIV care settings -*Concept approved; full length proposal is under evaluation with funding agency- Extramural Dept. of AIDS Control*

#### **As co-investigator**

- Identification of HIV modulated cell signalling pathways in context with persistence of HIV after activation-*Completed Extramural-DBT*
- Cross talk between *notch-1* and *egfr* during HIV-HPV co-infections-*Intramural*
- Vitamin D Receptor Polymorphisms & Bone Aging during HIV Infection -*Approved by Scientific Advisory Committee of the Institute (Applied for extramural funding)*

### Awards

- Selected through the competitive application procedure under a call for proposals for participation in a workshop under the Indo-U.S. Joint Working Group on Prevention of HIV/AIDS and Sexually Transmitted Diseases. Held in Delhi from 10<sup>th</sup> to 11<sup>th</sup> Dec 2015.
- First Prize in Paryaywachi competition under Hindi Rajbhasha activity at NARI. 2015.
- Invited to be a panelist during the one day campaign workshop on "Anti-Microbial Resistance: Situation, Needs and Priorities in India" at Venture Center, Pune on 29th August 2015
- First Prize in Assay Writing competition under Hindi Rajbhasha activity at NARI. 2014.

- Invited by the organizers of “2nd International Conference on Clinical Microbiology and Microbial genomics” for being a part of organizing committee and chairing a session. Held at Las Vegas in September 2013 (could not attend).
- Selected for a three months Training Program in Biomedical Informatics at Vanderbilt University, USA under a training grant from the Fogarty International Centre of NIH. (Worked with Dr. Jens Meiler from 19 May to 17 Aug 2012).
- First Prize in Assay Writing competition under Hindi Rajbhasha activity at NARI. 2010
- Best poster award 47<sup>th</sup> Annual Conference of Association of Microbiologists of India, 2006.
- Best paper award, National Symposium on Recent Trends in Molecular Biology. Cancer Hospital and Research Institute, Gwalior, India. 2006.
- Best Poster award, 45<sup>th</sup> Annual Conference of Association of Microbiologists of India, 2004.
- Research Fellowship of DRDO, Ministry of Defence, Govt. of India, 2002.
- CSIR-National Eligibility Test (Lectureship)
- Qualified Graduate Aptitude Test in Engineering -2001

**Special Training: Under Dr. Jens Meiler, Computational Structural Biology, Vanderbilt University (May-August 2012)**

- Protein structure building and visualization software and exercises.
- Rosetta Docking; Cheminformatics

**Courses/Trainings/Workshops**

- Training on “Current Regulatory Requirements for Members of Institutional Ethics Committees” at National Centre for Cell Science (NCCS), University of Pune, on February 11 - 12, 2015.
- Training program on “Schedule Y and clinical trial regulations” organized by ethical research initiatives at the National AIDS Research Institute, Pune on 3<sup>rd</sup> Feb 2015.
- Workshop on “Preparedness & Diagnosis of Ebola” Organized by the National Institute of Virology (NIV), Pune 26<sup>th</sup> November -30<sup>th</sup> November 2014
- “Introduction to Forensic Science” conducted by the Nanyang technological university through Coursera online system. Nov 2014
- Workshop on “Basic Perl for Life Sciences” at NCL innovation park under Biosakshat from 7-9 Aug 2014.
- Bioinformatics workshop on “454 Sequencing, Genomics and Resolving Bioinformatics Challenges” held at New Delhi on 22-23 April, 2013.
- *GCLP and Assay Validation training* at Regional Training Event, Le Meridian -Pune, India conducted by PPD and DAIDS from 10-13 May 2010.
- Vanderbilt-NARI-NIE bioinformatics workshop on 20 April 2010 at NARI, Pune.
- “ICGEB-IUBMB Workshop ‘Human RNA Virus’” International Centre for Genetic Engineering and Biotechnology, New Delhi, India Feb 2010.
- “Indo-German Workshop on Molecular Epidemiology of Infectious Diseases” University of Hyderabad, India. Nov 2008.

- “Basic Training in Recombinant DNA Technology and PCR” Bangalore Genei, Bangalore, India. 2005.
- “Protein Purification and Immunotechniques.” Bangalore Genei, Bangalore, India. 2005.
- “Recent Advances in Diagnostic Virology” at DRDE Gwalior, India 2005.
- “Recombinant DNA Technology and Molecular Detection Techniques” DRDE Gwalior, India. 2003.

## Publications

- Singh H, Lata S, Nema V, Ghate M, Gangakhedkar RR. 2012. CYP2C9\*2 and\*3 and CYP1A1m1 polymorphism and Risk to develop ARV associated hepatotoxicity and severe hepatotoxicity. Accepted for publication in APMIS.
- Sushama Jadhav and **Vijay Nema\***. (2016); A review on challenges in the development of multiplex assay for quantitative estimation of viral pathogens Int. J. of Adv. Res. 4 (9). 1102-1110 **(IF: 5.336)**
- Anamika Gupta, Vijay Nema and Shampa Anupurba. Detection of Beijing genotype of MDR M. tuberculosis by targeting Rv2820 gene and their association with drug resistance mutations in katG, rpoB and embB, J Infect Dis Ther 2016, 4:4(Suppl)
- Singh H, Marathe SD, Nema V, Ghate MV, Gangakhedkar RR. Genetic variation of MMP-2(-735 C>T) and MMP-9(-1562 C>T) gene in risk of development of HAND and severity of HAND. J Gene Med. 2016 Sep;18(9):250-7 **(IF 3.246)**
- Singh H, Marathe SD, Nain S, Nema V, Ghate MV, Gangakhedkar RR. APOBEC3B deletion impacts on susceptibility to acquire HIV-1 and its advancement among individuals in western India. APMIS. 2016 Oct;124(10):881-7 **(IF 1.9)**
- Singh H, Marathe S, Nain S, **Nema V**, Angadi M, Bapat S, Pawar J, Ghate M, Sahay S, Gangakhedkar RR. Coding region variant 186H/R in Exon 4 of APOBEC3G among individuals of Western India. APMIS. 2016 May;124(5):401-5. doi: 10.1111/apm.12517 . **(IF 1.9)**
- Kundapur R. R. & **Nema V\***. Loop-mediated isothermal amplification: Beyond microbial identification. Cogent Biology (2016), 2: 1137110
- Singh HO, Lata S, Angadi M, Bapat S, Pawar J, **Nema V**, Ghate MV, Sahay S, Gangakhedkar RR. Impact of GSTM1, GSTT1 and GSTP1 gene polymorphism and risk of ARV-associated hepatotoxicity in HIV-infected individuals and its modulation. Pharmacogenomics J. 2015 Dec 15. doi: 10.1038/tpj.2015.88 **(IF: 4.229)**.
- Vijay Nema (2015) Current Trends in AIDS Research. J Aids Trails 1: 1-9
- Rajesh R Kundapur and **Vijay Nema\*** (2015); An economical and efficient method of post reaction cleanup of labeled dye terminator sequencing products Int. J. of Adv. Res. 3 (6). 787-791**(IF: 5.336)**

- **Nema** (2015). Now we care to cure HIV. Editorial for Clinical Microbiology and Case Reports. Volume 1, Issue 2. 014e Available at <http://scientonline.org/fulltext/now-we-care-to-cure-hiv/21158>
- **Nema V.** Microbiome, Immunity and HIV infection: is there a Link?. Austin J HIV/AIDS Res. 2014;1(1): 2. **(IF: NA)**
- Vijay Nema. Gut Metagenomics. Asiatic J Biotechnology Resource 2014, MDIMCE Vol 4, Issue 3. (Publication of abstract under seminar proceedings in special issue). **IF 0.9**
- Nema V, Nair R. Metagenomic analysis of diarrheal stool samples of HIV infected individual and HIV-uninfected individual using 16SrDNA sequencing. Indian J Med Microbiol 2014;32:347-8 **IF 1.04**
- VijayNema. Gut not only feels but also speaks! J Microb Biochem Technol 2013, 5:4. (Publication of abstract under conference proceedings). **IF: 3.16 (Unofficial)**
- **Nema V.**, Pal S. K. Exploration of freely available web-interfaces for comparative homology modelling of microbial proteins. Bioinformation 9(15): 796-801 (2013) PMID: 24023424. **IF 0.6**
- **Nema V.** Tuberculosis Diagnosis: Hurdles and Hopes. Online Publication available at <http://www.siicsalud.com/dato/croin.php/132842> **IF 0.018**
- Rao G, Das A, Prabhakar P, **Nema V**, Risbud A R. Alteration in sample preparation to increase the yield of multiplex Polymerase Chain Reaction assay for diagnosis of genital ulcer disease. **Indian J Med Microbiol** 2013;31:15-8 PMID: 23508423 **IF 1.04**
- **Nema V.** Rectification of artificial molecular recombination with the use of high fidelity enzyme in the amplification of 16S rDNA sequences from Stool sample. 2012. **All Res. J. Biol.**, 2012, 3, 6-9. **IF:1 (unofficial)**
- **Nema V.** Tuberculosis diagnostics: Challenges and opportunities. Lung India 2012; 29:259-66. PMID: 22919166. **IF nil (Popular article)**
- **Nema, V.**, Agrawal, R., Kamboj, D.V., Goel, A.K. and Singh, L. Isolation and characterization of enterotoxigenic heat resistant *Staphylococcus aureus* from a food poisoning outbreak in Indian subcontinent. **International Journal of Food Microbiology** 2007,117, 29-35. PMID: 17477998. **IF 3.45**
- Kamboj, D.V., **Nema, V.**, Pandey, A. K., Goel, A.K. and Singh, L. Heterologous expression of Staphylococcal enterotoxin B (*seb*) gene for antibody production. **Electronic Journal of Biotechnology** [online]. [Vol. 9 No. 5, Issue of October 15, 2006](http://www.ejbiotechnology.info/index.php/ejbiotechnology/article/view/v9n5-8/400). Available at: <http://www.ejbiotechnology.info/index.php/ejbiotechnology/article/view/v9n5-8/400>. **IF 1.403**
- Goel, A.K., Tamrakar, A.K., **Nema, V.**, Kamboj, D.V. and Singh, L. Detection of viable toxigenic *Vibrio cholerae* from environmental water sources by direct cell duplex PCR assay. **World Journal of Microbiology & Biotechnology**, 2005. 21: 973–976. **IF 1.532**

**Special publication:** Publication of a semi-scientific article in Hindi entitled “Kya HIV ka ant nikat hai” in annual magazine of CCMB, Hyderabad, 2016, Issue 14, Page 15-17.

**Publications in NARI Bulletin (ISSN 2278-6694)**

**Nema V.** HIV-TB: What is required and where we are? NARI Bulletin. 2015, 6 (2), 4.

**Nema V.** It takes two to tango. Editor’s Pick. NARI Bulletin. 2014, 5 (1&2), 4.

Pandey D., Fakir NA, **Nema V\***. TMC 207, the first compound of a novel class of anti tuberculosis drugs in four decades. NARI Bulletin. 2013, 4(2), 8-9.

**Nema V.** Tuberculosis: A challenge and a priority. NARI Bulletin. 2013, 4(1), 7-10.

**Nema V.** Hopes at the horizon. Editor's pick in NARI Bulletin. 2012, 3(3), 11.

**Nema V.** 'Totally Drug Resistant' tuberculosis. NARI Bulletin. 2012, 3(1), 13-14.

**Patent:** Process for the purification of single polypeptide chain protein. Application No: 2575/DEL/2007 A; Application filed on: 07/12/2007; Published on: 2009-07-10  
International Classification: C07K14/715; A61K38/00

#### Sequence submissions (51)

- **2017:** KY292404
- **2016:** Genbank KX029321; KX813816; KX813817; KX813818; KX813819; KX813820; KX813821; KX813822; KX813823; KX813824
- **2015:** GenBank- KT906373; KT906675; KT906676; KT906677; KT906678; KT906679; KT906680; KT906681; KT906682; KT906683; KT906684; KT906685; KT906686; KT906687; KT906688; KT906689
- **2012:** GenBank JQ627622; JQ627623; JQ627624
- **2010:** GenBank HQ318717, HQ318718, HQ318719
- **2006:** GenBank- DQ997828, DQ997829, DQ997830, DQ997831, DQ997832, DQ997833, DQ997834, DQ997835, DQ997836, DQ997837, DQ535901, DQ535902, DQ630750, DQ630751, DQ630752, DQ630753,.
- **2005:** EMBL-EBI- AM158256,
- **2004:** GenBankAY852244

#### Papers/Posters presented in conferences

- Anamika Gupta, **Vijay Nema** and Shampa Anupurba. Detection of Beijing genotype of MDR M. tuberculosis by targeting Rv2820 gene and their association with drug resistance mutations in katG, rpoB and embB. Presented in Joint Event on 2nd World Congress on Infectious Diseases & International Conference on Pediatric Care & Pediatric Infectious Diseases August 24-26, 2016 Philadelphia, USA
- Shruti D Marathe, R.R.Gangakhedkar, **Vijay Nema**, Manisha Ghate, Seema Sahay, Shradha Bapat, Mansa, Srikant Tripathi, Sheela Godbole, Jyoti Pawar, R.S Paranjape, HariOm Singh. Association of MMP-1 (-181A>G) and MMP-3(-1612 5A>6A) Promoter Polymorphisms and Risk for HIV progression. International symposium on Genomics in Health and disease and 40<sup>th</sup> annual conference of Indian society of Human Genetics 2015 to be held at Mumbai P-79, 28-30 January 2015.
- Shruti D Marathe, Sonam Lata R.R.Gangakhedkar, **Vijay Nema**, Manisha Ghate, Seema Sahay, Shradha Bapat, Mansa, Srikant Tripathi, Sheela Godbole, Jyoti Pawar, R.S Paranjape, HariOm Singh. Genetic Variants of APOBEC3G-90C/G and -571G/C Polymorphism and Risk of acquiring HIV infection India International symposium on Genomics in Health and disease and 40<sup>th</sup> annual conference of Indian society of Human Genetics 2015 to be held at Mumbai P-193, 28-30 January 2015

- Gururaj Rao, P. Prabhakar, A. Das, **Vijay Nema** and Arun Risbud R. Sample preparation alteration enhances performance of the Multiplex PCR assay for diagnosis of Genital Ulcer Disease. In: Microcon 2010. Held on 26-28 November 2010, at Kolkata, India.
- **Vijay Nema**, Ranu Agrawal, Dev Vrat Kamboj, Ajay Kumar Goel and Lokendar Singh. Food poisoning outbreak in Indian subcontinent: Isolation of heat resistant enterotoxigenic *Staphylococcus aureus*. In: Microbiology: The challenges ahead. 47th Annual Conference of the Association of the Microbiologists of India (AMI), 2006. pp 225. **(Awarded best poster)**
- Ranu Agrawal, D.V. Kamboj, **Vijay Nema**, A.K. Goel and L. Singh. Development of detection system using antisera raised against over-expressed recombinant SEB. In, National Symposium on Recent Trends in Molecular Biology. Cancer Hospital and Research Institute, Gwalior, India. 2006. pp 27. **(Awarded best paper)**
- **Vijay Nema**. Staphylococcal enterotoxin B: Gene Cloning and expression in *E. coli* and production of antibodies against it. In, XX M.P. Young Scientist Congress, Vikram University, Ujjain, India. 2005. pp 10.
- **Vijay Nema**, Dev Vrat Kamboj, Ajay Kumar Goel and Lokendar Singh. Staphylococcal Enterotoxin B: A Comparative Evaluation of Purification Techniques. In: Microtech-2K4: 45<sup>th</sup> Annual Conference of the Association of the Microbiologists of India (AMI), 2004. pp 80.
- Dev Vrat Kamboj, **Vijay Nema**, Arun Pandey, Ajay Kumar Goel and Lokendra Singh. Cloning and Expression of Staphylococcal Enterotoxin B Gene and its Suitability for Antibody Generation. In, Microtech-2K4: 45<sup>th</sup> Annual Conference of the Association of the Microbiologists of India (AMI), 2004. pp 20. **(Awarded best poster)**
- **Vijay Nema**. Indian Sweets Harboring Enterotoxigenic *Staphylococcus aureus*. In, XIX M.P. Young Scientist Congress, Dr. H.S. Gour University, Sagar, India. 2004. pp 12.
- **Vijay Nema**, D.V. Kamboj, Lokesh Nigam, A.K. Goel and Lokendra Singh. Survey of Indian foods for enterotoxigenic *Staphylococcus aureus*. In, National Symposium on Bioresources, Biotechnology and Bioenterprise, Osmania University, Hyderabad, India. 2003. pp 104.

#### Conference/Seminar/Symposium/Lecture/Talk

- Delivered an invited talk on Metagenomics: Unearthing the unseen at Bilaspur University, National Conference On Recent Advances In Biotechnology & Biofuels September 12-13, 2016
- Participated in a two day symposium on Next Generation Sequencing organized by CCMB and Bioserve Biotechnologies (India) Pvt. Ltd, Hyderabad from 5-6 May 2016.
- Participated in the international conference on Combating Anti-Microbial Resistance: Public Health Challenge and Priority, New Delhi. 23<sup>rd</sup> to 25<sup>th</sup> February, 2016.
- Invited as a speaker in “Microbial Diversity: Interactions of Microbes In Complex Environment” (MDIMCE-2014) Organized by Department of Microbiology, Arts and Science college pulgaon, Distt- Wardha, Maharashtra held on 10<sup>th</sup> January 2014.
- Participated in workshop on “Pathogen Diversity- Exploiting Pathogen Genetics for New Control Strategies” on March 6-7, 2013 in ICGEB Campus, Aruna Asif Ali Marg, New Delhi.
- Delivered an invited talk on Gut Metagenomics- Exploring the world inside you and me: Marathwada Mitra Mandal's College of Pharmacy, Pune 2013



- Delivered a talk on Gut Metagenomics at Nehru Science Centre, Mumbai in Feb 2013 during 6<sup>th</sup> Science Expo.
- *Galvanizing Evidence for HIV Management: A Consultative Meeting*. NARI, Pune, January 27-29, 2011.
- Delivered a talk “ HIV, Science and Adolescents” under popular science lecture at Nehru Science Centre, Mumbai in Jan 2011 during 5<sup>th</sup> Science Expo.
- *Translational Research in HIV/AIDS in India (TRAI)’* meeting held at Goa January 12-14, 2011.
- *International Symposium on TB Diagnostics: Innovating to Make an Impact*. ICGEB, New Delhi December 16 - 17, 2010
- *‘Introduction to Good Clinical Laboratory Practice (GCLP)’* by Dan Ozaki, CAVD/CA-VIMC Central QAU Manager at NARI, Pune, India on 3<sup>rd</sup> Feb 2010.
- *‘Over expression: Systems and Challenges’* IV Annual Conference of Biotechnology Society of India. Held at CCMB, Hyderabad, from 26<sup>th</sup> to 28<sup>th</sup> Nov 2006.
- *National seminar on Present status of microbiology and challenges for sustainable development*. Held at Dept. of Applied Microbiology and Biotechnology, Dr. Hari Singh Gour Vishwavidyalaya, Sagar, M.P., from 5<sup>th</sup> to 7<sup>th</sup> March 2001.

**Professional Membership:**

Life member of Association of Microbiologists of India (No. 2030-2006);  
 Member of International Society of Infectious Diseases (Year 2011-2012).  
 Institutional Ethics Committee, National Institute of Naturopathy, Pune

**Editorial board member:**

NARI Bulletin  
 International Journal of Basic and Applied Medical Sciences  
 International Journal of Life Science and Technical Research  
 Austin Journal of HIV/AIDS Research  
 Clinical Microbiology & Case Reports  
 Journal of AIDS & Clinical trials open access (jactoa)

**PhD guide:** Faculty of Health and Biomedical Sciences, Symbiosis International University, Pune (02 students registered for PhD)

One thesis evaluation and external referee for viva-voce at Shivaji University, Kolhapur.

**Dissertation guided:** 08 (NARI) 04 others

**Manuscript reviewed for:** Sexually Transmitted Infections, Journal of the Formosan Medical Association, Journal of Antimicrobial Chemotherapy, The All Results Journal: Biology, Advances in Bioscience and Bioengineering, SciencePG, Bioinformation, Clinical Microbiology & Case Reports, Virus Disease