

NATARAJAN GOPALAN

Professor and Head

Department of Epidemiology and Public Health,
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EDUCATION

PDF: Oklahoma Health Science Center (OUHSC), University of Oklahoma, Oklahoma, USA 2006-2008

Ph.D. Zoology, Jiwaji University, Gwalior, India. 1995

M.Sc. Medical Entomology, Pondicherry University, Pondicherry, India. 1988

B.Sc. Zoology, University of Madras, Madras, India. 1982

RESEARCH INTERESTS

- New Process preparation of large scale recombinant proteins for Therapeutic and diagnosis purposes.
- Vector borne diseases diagnosis and monitoring.
- Study to develop novel therapeutic paradigms to inflammation for digestive diseases like colon and pancreatic cancers.
- Edible / environmentally degradable Cutlery
- Storage pests management using Phytochemicals and Essential oil on growth and zearalenone production by *Fusarium graminearum* maize grains
- Value addition of food products

RESEARCH POSITION

Scientist B: 1999-2001

Scientist C : 2001

Scientist D : 2004

Scientist E : 2009

Scientist F: 2014

AWARDS AND HONORS

1. Best Scientific Worker Award” two times (1985 and 1988) in DRDE, Gwalior.
2. In-house best paper award of DRDE in the journal Pesti Biochem and Physiol.1997.
3. Shri. K M Rao award for Entomologist for best Patent entitled in 2002.
4. GRG/AGA Travel Grant award for Digestive Diseases Week (DDW) 2008.
5. DRDO Technology *Spin-off Award for mosquito attracticides* in 2009

6. Laboratory Scientist of the year Award 2010
7. Best All Rounder Scientist of the year Award 2016
8. Laboratory Scientist of the year Award 2018
9. DRDO Technology Group Award 2018
10. DRDO Spin Off Technology Award 2018
11. National Science Day Oration Award 2018
12. National Technology Day Oration Award 2019
13. Best Second Research Paper Award DRDO-DFRL 2020

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- Life Member, Indian Immunological Society (IIS), India -1988
- Life Member, The Indian Society for Malaria and other Communicable Diseases, 1993
- Life member, Vector Borne diseases-1994
- Life Member, The National Academy of Vector Borne Diseases, India.1995
- Life member, The Association of Microbiologists of India (AMI)-2013
- Member of the American Gastroenterology Association, USA 2006-09
- Life Member, Indian Science Congress (ISC), India -2005
- Life member, Association of Food Scientists & Technologists (AFSTI)-2017
- Life Member, Society for Vector Ecology (SOVE)-2020
- Life member, Soc for Reproductive Biology and Comparative Endocrinology 2021

Ph.D AND M.Sc DISSERTATION THESIS

Three students awarded and **Eight** Students registered for PhD and **Twenty six** students completed for M.Sc/M Phil dissertation work

PATENTS

- A process for the preparation of improved, chemically impregnated filter paper strips for rapid detection of organophosphorus insecticide resistance in mosquitoes (No. 193285 :2002).
- A process for the preparation of cereal-based single dose rodenticide bait for the control of commensal rats(No: 189767:2004).
- A process for the preparation of biodegradable controlled-release insecticide matrix composition for the protection of woollen fabrics (No: 189729:2004).
- An improved Process for N,N diethylphenylacetamide (DEPA) a multi insect repellent Cream for protection of human beings from hematophagous insect vectors (2004).
- A Multi insect Repellent Spray and a Process for Preparation Thereof- Product Patent (2004).

- Improved multi-insect repellent formulation and process thereof (1741/DEL/2005)
- Composition for use in the control of Dengue transmitting mosquito (PCT/1N05/002110)
- Improved multi-insect repellent formulation and process thereof (PCT /2006)
- Process and product patent for detection of *Plasmodium falciparum* by latex Agglutination (2008)
- Composition for use in the control of Dengue transmitting mosquito countries (2008)
- Accelerated Stability Analysis of New Formulation Alpha-Ketoglutarate Dis Salts Potential Antidote for Cyanide (**2014**)
- A Process for Preparation of Chitosan-Silver-Herbal Membrane Composite for Biomedical Application (**2015**)
- A Process for Preparation of edible cutlery and efficacy on biodegrades (**2019**)
- A Process for the development of Microbial Cellulose based low calorie and slow-melting ice cream (**202011056505 of 26th Dec. 2020**)
- Development of Magnetic Nanoparticle Assisted Aptamer-Quantum dot Based Biosensor For The Detection of E.Coli In Water Samples (Del. **202111024602 : 5th Aug 2021**)

PUBLICATIONS

Chitvan Pandit, Hema Kumari Alajangi, Joga Singh, Akhil Khajuria, Akanksha Sharma, Md. Samim Hassan, Manmohan Parida, Anil Dutt Semwal, **Natarajan Gopalan**, Rakesh Kumar Sharma, Ashish Suttee, Udit Son, Bhupinder Singh, Sameer Sapra, Ravi Pratap Barnwal, Gурpal Singh and Indu Pal Kaur. Development of Magnetic Nanoparticle Assisted Aptamer-Quantum Dot Based Biosensor for the Detection of *Escherichia coli* in Water Samples (**2022**). *Sci Total Environ.* 20;831 doi: 10.1016.

Yilma Markos Larebo, Legesse Tesfaye Elilo, Desta Erkalo Abame, Denebo Ersulo Akiso, Solomon Gebre Bawore, Abebe Alemu Anshebo, **Natarajan Gopalan**. Awareness, Acceptance, and Associated Factors of Human Papillomavirus Vaccine among Parents of Daughters in Hadiya Zone, Southern Ethiopia: A Cross-Sectional Study. *Vaccines* (Basel) **2022** :10(12): 1988. doi: 10.3390/vaccines10121988

Balasubramani Karuppusamy; Nishadh Kalladath Abdul Rasheed; Savitha Chellappan; Devojit Kumar Sarma, Rashi Dixit, Sujit Kumar Behera, **Gopalan Natarajan** and Praveen Balabaskaran Nina Spatial epidemiology of acute respiratory infections and its risk factors in children under five in India: Analysis of National Family Health Survey-4 (2015-2016)" (2022).. PONE-D-21-15131 (accepted)

Padmaj Kalgutkar, Riya Ashmin, Dhananjay Kumar, Venugopal Vasudevan, **Natarajan Gopalan** and Anil Dutt Semwal (2021). Probiotic containing foods in Military Dining: A systematic review. 6 (4), 305-13 **Def Life Sci J. IF-0.514**

Indumathi Mohan, Naveen Kumar Kodali, Savitha Chellappan, Balasubramani Karuppusamy, Sujit Kumar Behera, **Gopalan Natarajan** and Praveen Balabaskaran Nina (2021). Socio-economic and household determinants of malaria in adults aged 45 and above: analysis of longitudinal ageing survey in India, 2017–2018. *Malar J* 20:306: 1-9

Xavier JR, Madhan Kumarr MM, **Natarajan G**, Ramana KV, Semwal AD. Optimized production of poly (γ -glutamic acid) (γ -PGA) using *Bacillus licheniformis* and its application as cryoprotectant for probiotics. *Biotechnol Appl Biochem.* **2020** ;67(6):892-902. doi: 10.1002/bab.

Anilakumar KR, G.Phanikumar, **N.Gopalan**, Semwal AD (2022). Functional Foods and Nutraceuticals: Opportunities and Entrepreneurship. (submitted), **Def Life Sci J. IF-0.514**

Natarajan Gopalan (2022). Recent development on Food Technology. (Food sci Spl issue, submitted), *Defe Life Sci J IF-0.514*

Deshetty UM, Tamatam A, Bhattacharjee M, Perumal E, **Natarajan G**, Khanum F. Ameliorative Effect of Hesperidin Against Motion Sickness by Modulating Histamine and Histamine H1 Receptor Expression. *Neurochem Res.* **2020** Feb;45(2):371-384. doi: 10.1007/s11064-019-02923-0.

Neera, **Natarajan Gopalan** and Murali H. Sreepathi (2020) Occurrence of toxigenic *Fusarium* spp. in cereals and its significance. *Indian Journal of Agricultural Sciences.* 90 (7): 1338–41, **IF-1.02**

D.Uma Maheswari, T.Anand, Monojit Bhattacharjee, Ekambaram Perumal, **N.Gopalan**, Farhath Khanum (2019). Ameliorative effect of hesperidin against motion sickness by modulating histamine and histamine H1 receptor expression. *Neurochemical Research*, Doi.org/10.1007/s11064-019-02923-0 **IF-2.51**

Rakesh Kumar Sharma, Sudha Rana and **Natarajan Gopalan** (2019). Towards Protecting critical national Assets and Preparedness for response to Hazardous chemical, Biological and radiological Attacks. **Defe Life Sci J 4 (4): 456-465, IF-0.514**

Neera, K.V. Ramana, **N. Gopalan**, and R.K. Sharma (2018). Production of Inulinase by *Fusarium* sp. and its Application for Fructooligosaccharide Production for use as Prebiotics. **Defec Life Sci J: 3 (1): 45-50, IF-0.514**

Mrithula Mahalakshmi Kumar, Janifer Xavier Raj, **Natarajan Gopalan**, Karna Venkata Ramana, Rakesh Kumar Sharma (2018). Poly (γ -) Glutamic Acid : A Promising Biopolymer. , **Defe Life Sci J: 3(3): 301-306, IF-0.514**

P Rachitha, K Krupashree, GV Jayashree, Hemanth Kumar Kandikattu, Narayanappa Amruta, **Natarajan Gopalan**, MK Rao, Farhath Khanum (2018). Chemical composition, antioxidant potential, macromolecule damage and neuroprotective activity of *Convolvulus pluricaulis* , **J.Tradi and complem medi : 8 (4): 483-96, IF-0.414**

K.R. Anilakumar, **Natarajan Gopalan**, and R.K. Sharma (2017). Advances in the Value Addition to Foods - Recent Trends. 94, **Defec Life Sci J: 2(2), 90-94, IF -0.0510**

G. R. Sharath Babu, Tamatam Anand, N. Ilaiyaraja, Farhath Khanum and **N. Gopalan** (2017).Pelargonidin Modulates Keap1/Nrf2 Pathway Gene Expression and Ameliorates Citrinin-Induced Oxidative Stress in HepG2 Cells. **Frontiers in Pharmacology: Vol 8: 868, IF-3.831**

Kasipandi Muniyandi, Elizabeth George, Vekataramana Mudili, Naveen Kumar Kalagatur, Allen Joseph Anthuvan, Kadirvelu Krishna, Parimelazhagan Thangaraja, **Gopalan Natarajan** (2017).Antioxidant and anticancer activities of *Plectranthus stocksii* Hook.f. leaf and stem extracts. , **Agriculture and Natural Resources: 51 : 6., IF -0.469**

Shefali Bhardwaj, V.K. Shiby, and M.C. Pandey, and **Natarajan Gopalan** (2017).Moisture Sorption Characteristics of Ready-to-eat Chicken Wheat Crisps Prepared Using Resistant Starch and Chicken Powder with Wheat Flour. **Defec Life Sci J, Vol. 2 (2): 163-168, IF-0.514**

Lakshmi S., A.K. Pandey, N. Ravi, O.P. Chauhan, **Natarajan Gopalan**, and R.K. Sharma (2017). Non-destructive Quality Monitoring of Fresh Fruits and Vegetables. **Defec Life Sci J: . 2 (2): 103-110, IF-0.514**

G. Iyappan, S. Hari Priya, K. Kadirvelu, J. Kingston, **Natarajan Gopalan**, R.K. Sharma, and R. Sathishkumar (2017). Rapid Production of Therapeutic Proteins using Plant System., **Defec Life Sci J: 2 (2): 95-102, IF-0.514**

P. Rachitha, K. Krupashree, G. V. Jayashree, **Natarajan Gopalan**, and Farhath Khanum_(2017). Growth Inhibition and Morphological Alteration of *Fusarium sporotrichioides* by *Mentha piperita* Essential Oil. , **Pharmacognosy Res. : 9 (1), 74–79, IF-0.84**

Natarajan Gopalan (2017) Emerging Technologies in the Area of Food Sciences. **Defe Life Sci J: 2(2) : 87-87 Guest Editorial, IF-0.514**

Divya, J.R. Xavier, **Natarajan Gopalan**, and K.V. Ramana (2017). Immobilisation of Lactic Acid Bacteria and Application of Bacteriocin for Preservation of Fruit Juices. , **Defec Life Sci J, Vol. 2(2): 231-238, IF-0.514**

Elizabeth George, Muniyandi Kasipandi, Mudili Venkataramana, Kalagatur Naveen Kumar, Joseph Anthuvan Allen, Thangaraj Parimelazhagan and **Natarajan Gopalan**

(2016). In vitro anti-oxidant and cytotoxic analysis of *Pogostemon mollis* Benth. , **Bangladesh J Pharmacol ; 11: 148-158, IF-0.815**

Anil Kumar Singh, Manisha Soni, Ankita Agarwal, Paban Kumar Das, Manmohan Parida, **Natarajan Gopalan** (2016). Vertical Transmission of Chikungunya virus in *Aedes aegypti* Mosquitoes from Northern India. , **Defec Life Sci J: 01(2): 184-187, IF-0.514**

Saurabh Shrivastava, Anil K Singh, Kshitij Chandel, Ritu Gill, Prativa K Behara and **N Gopalan** (2015). “A Systematic Approach for Optimization of up-scaling the Expression and Kinetic Characterization of Recombinant *Plasmodium falciparum* Lactate Dehydrogenase (PfLDH) in *E.coli*. *J. Pure Appli Microbiol.* 9(3)1-12.

Priyanka Chahar, Manjeri Kaushik, Sarvajeet Singh Gill, Surendra Kumar Gakhar, **Natrajan Gopalan**, Manish Datt, Amit Sharma, Ritu Gill (2015). “Genome-Wide Collation of the *Plasmodium falciparum* WDR Protein Super family Reveals Malarial Parasite-Specific Features” *PLOS ONE* 1-24 DOI:10.1371

Naveen K. Kalagatur, Venkataramana Mudili, Chandranayaka Siddaiah, Vijai K. Gupta, **Gopalan Natarajan**, Murali H. Sreepathi, Batra H. Vardhan and VenkataL.R.Putcha (2015). “Antagonistic activity of *Ocimum sanctum* L. essential oil on growth and zearalenone production by *Fusarium graminearum* in maize grains” (2015) *Front. Microbiol.* 6:892-905

Anil K. Singh, Saurabh Shrivastava, Subodh Kumar, Vijai Pal and **N. Gopalan***(2015). Batch fermentation of recombinant *Burkholderia* intracellular motility A (rBimA) protein in *E. coli* for the diagnosis of equine glanders *Journal of Equine Veterinary Science* 35:124–129

Shrivastava A, Soni M, Shrivastava S, Sharma S, Dash PK, **Gopalan N**, Behera PK, Parida MM(2014). Lineage shift dengue virus eastern India: an increased implication for DHF/DSS. *Epidemiol Infect.* Oct 15:1-7.

Anil K Singh, Saurabh Shrivastava, M. Kameswara Rao, Prativa K Behara, C.R.Pillai and **N Gopalan** (2014). Heterologous expression and characterization of *Plasmodium falciparum* Merozoite Surface Protein1 (MSP1₄₂kDa) in *Pichia pastoris* and its *in-vitro* parasite growth inhibition assay Submitted Ind.j.Micro

Saurabh Shrivastava, Anil K Singh, Kshitij Chandel, Ritu Gill, Prativa K Behara and **N Gopalan** A systematic approach for optimization of up-scaling the expression and kinetic characterization of recombinant *Plasmodium falciparum* Lactate dehydrogenase (PfLDH) in *E.coli* Submitted Ind.j.Micro

Smrati Verma, Hotam Sigh Chaudhary, Balwant Singh, **N Gopalan** and A K Singh (2014). “Isolation and assessment of potential probiotic microorganisms from modified indigenous foods preparation”. *Pharmacognosy Communications* 4 (1): 11-15 IF-0.732.

Rahul Bhattacharya, **Natarajan Gopalan**, Anil Kumar Singh, Poonam Singh, Shiv Kumar Yadav Saurabh Shrivastava (2014). Accelerated stability and bioassay of a new

oral a-ketoglutarate formulation for treating cyanide poisoning". *Pharmaceutical Biology*: 52(2):137-43 IF- 1.9

Ankita Agarwal, Anil K. Singh, Shashi Sharma, Manisha Soni, Ashish K. Thakur ,**N. Gopalan**, M. M. Parida, P. V. L. Rao, Paban K. Dash (2014). "Application of Real-Time RT-PCR 1 in vector surveillance and assessment of replication kinetics of an emerging Novel ECSA genotype of Chikungunya virus in *Aedes aegypti*" *Sumbitted WHO Journal* . IF- 2.5

Anil K. Singh, T. N. Athmaram, Saurabh Shrivastava, S. Merwyn, G. S. Agarwal & **N. Gopalan** (2013). "Fermentation and downstream process for high yield production of *Plasmodium falciparum* recombinant HRP II protein and its application in diagnosis". *J Ind Microbiol Biotechnol* 40:687–695 IF- 2.77

M venkataramana, S Chandranayaka, Amit Kumar **N Gopalan**, HS Murali, HV Batra an PVL Rao (2014). "Deoxynivalenol induced neurotoxicity and its attenuation by N acetylcysteine An invitro Evaluation". *PLoS One submitted* IF- 4.24

N. Ghosh, V. Pal, G. Gupta, A. K. Singh, M. Boopathi, **N. Gopalan** and A. K. Goel .(2013). "Surface Plasmon Resonance Biosensor for Detection of Bacillus anthracis, the Causative Agent of Anthrax from Soil Samples Targeting Protective Antigen" *Indian J Microbiol* 53(1):48–55 IF- 0.91

T.N. Athmaram Saurabh Shrivastava, **N. Gopalan** Shweta Saraswat Anil K. Singhrativa K. Behara Princi Misra Shailendra K. Verma P. V. L. Rao (2013). "Optimization of Dengue-3 recombinant NS1 protein expression in E. coli and in vitro refolding for diagnostic applications". *Virus Genes* : 46:219–230 IF- 1.85

T. N. Athmaram Saurabh Srivastava N. Gopalan Anil Kumar Singh Princi Misra, P. V. L. Rao Shweta Saraswat M. Kameswara Rao (2013). "A simple Pichia pastoris fermentation and downstream processing strategy for making recombinant pandemic Swine Origin Influenza A virus Hemagglutinin protein" *J Ind Microbiol Biotechnol* 40:245–255 IF- 2.77

Papiya Bigoniya, Anil Kumar Singh, Dharmesh Bigoniya and **Gopalan N** (2013) "Pyridostigmine Bromide and Potassium Iodate: Subacute Oral Toxicity and Stability ". *J Drug Metab Toxicol* 4(2): 145-56 IF- 2.75

Ankita Agarwal, Anil K. Singh, Shashi Sharma, Manisha Soni, Ashish K. Thakur **N.Gopalan**, M.M. Parida P.V.L. Rao Paban K. Dash (2013). Application of real-time RT-PCR in vector surveillance and assessment of replication kinetics of an emerging novel ECSA genotype of Chikungunya virus in *Aedes aegypti*. *Jourl of Virological Methods*. 193(2):419-25. IF- 2.08

Hotam S Chaudhary, Jayaprakash Yadav, Anu R Shrivastava, Smriti Sing Anil K Singh and **Natatajan Gopalan** (2013). "Antibacterial activity of actinomycetes isolated from different soil samples of Sheopur (A city of central India) *Journal of Adv Pharmace Technol & Res* 4(2): 118-123 IF- 1.27

Manisha Soni, Anil Kumar Singh, Shashi Sharma, Ankita Agarwal, **Natarajan**

Gopalan, P. V. Lakshmana Rao, Manmohan Parida, and Paban Kumar Dash (2013). "Molecular and Virological Investigation of a Focal Chikungunya Outbreak in Northern India". *The Scientific World Journal* IF - 1.73

Karothia, BS, Athmaram TN, Selvam DT, Ashu K, Singh AK **Gopalan N** (2013) Fed batch fermentation and purification strategy for high yield production of *Brucella melitensis* recombinant Omp 28 kDa protein and its application in disease diagnosis. *Protein Ppt Lett.* 1;20 (7):731-40 IF- 1.85

Sharma K Gupta, P Kumar Singh A, **Gopalan N**, Kumar Dhaked R, Lakshmana Rao PV (2012). Development of a simple fed-batch process for the high-yield production of recombinant shiga toxin B-chain protein. *Protein Pept Lett.* 19(2): 228-37 IF- 1.85

Smriti Singh, Pramod Kumar, **N Gopalan**, Bhuvnesh Shrivastava, RCKuhad, Hotam Singh Chaudhary (2012). Isolation and partial characterization of actinomycetes with antimicrobial activity against multidrug resistant bacteria. *Asian Pacific JTrop Biomed* S1147-50 IF- 0.52

V. Venkatesalu, **N. Gopalan**, C. R. Pillai, Vineeta Singh, M. Chandrasekaran, A. Senthilkumar and N. Chandramouli. (2012) "In vitro anti-plasmodial activity of some traditionally used medicinal plants against *Plasmodium falciparum* " *Parasitol Res* (2012) 111:497–501 IF- 2.87

Samuel Merwyn, **Natarajan Gopalan**, Anil Kumar Singh, Ganga Prasad Rai and Gauri Shanker Agarwal. 2011. " Monoclonal Antibodies Against Recombinant Histidine-rich Protein 2 of *Plasmodium falciparum* and Their Use in Malaria Diagnosis" **HYBRIDOMA** 30 (6), 519-24 IF- 0.77

A Shrivastava, PK Dash, NK Tripathi, AK Sahni, **N Gopalan**, PV Lakshmana Rao (2011). "Evaluation of a commercial Dengue NS1 enzyme-linked immunosorbent assay for early diagnosis of dengue infection" *Indian Journal of Medical Microbiology*, 29(1): 51-55. IF- 0.91

Anil K Singh, Saurabh Shrivastava, M. Kameswara Rao, Prativa K Behara, C.R.Pillai and N Gopalan "Heterologous expression and characterization of *Plasmodium falciparum* Merozoite Surface Protein1 (MSP1₄₂kDa) in *Pichia pastoris* and its *in-vitro* parasite growth inhibition assay" IF- 2.5

Ambuj Shrivastava, Mirza Waqar Beg, Chandravati Gujrati, **Natarajan Gopalan**, P. V. L. Rao .(2011). "Management of a Vertically Transmitted Neonatal Chikungunya Thrombocytopenia" *Indian J Pediatr* 78(8):1008–1009 IF- 0.85

Ramachandran, E Thavathiru, S Ramalingam, **G Natarajan**, WK Mills, DM Benbrook S Lightfoot, A Reis, S Anant and L Queimado (2011). "Wnt inhibitory factor 1 induces apoptosis and inhibits cervical cancer growth, invasion and angiogenesis in vivo" *Oncogene* (npg) 1–13 IF – 7.41

Senthilkumar, S.N. Tikar, **N. Gopalan**, P. Sundaramoorthy and V. Venkatesalu (2011) "Larvicidal potential of different solvent extracts and oleanolic acid derivative from *Coccinia indica* against vector mosquitoes" *Toxicological & Environmental Chemistry* 94(7), 1342–1349 IF - 1.65

Ajay Kumar Goel, Meenu Jain, Promod Kumar, Pennagaram Sarguna, Neha Goush and **Natrajan Gopalan** (2011). "Molecular characterization reveals involvement of altered el tor biotype *Vibrio cholerae* O1 strains in cholera outbreak at Hyderabad, India" *The Jour Microbiol*: 49(2): 280-284 IF - 1.27

TN Athmaram, Shweta Saraswat, SR Santhosh, Anil Kumar Singh, VVS Suryanarayana, Raj Priya, **N Gopalan**, Manmohan Parida, PV Lakshmana Rao and R Vijayaraghavan (2011) "Yeast expressed recombinant Hemagglutinin protein of Novel H1N1 elicits neutralizing antibodies in rabbits and mice" *Virology Journal* : 8:524 :3-13 IF - 5.07

R Vijayaraghavan, ASB Bhaskar, Anshoo Gautam, **N Gopalan**, AK Singh, Beer **Singh and SJS Flora** (2012). A convenient first aid kit for chemical and biological agents exposure. *J. Environ. Biolol.* 33, 673-681.

SripathiM. Sureban, Randal May, Satish Ramalingam, Dharmalingam Subramaniam, **Gopalan Natarajan**, Shrikant Anant and Courtney W. Houchen (2009) Selective Blockade of DCAMKL-1 Results in Tumor Growth Arrest by a Let-7a MicroRNA-Dependent Mechanism *Gastroentrol* 137:649–659 IF- 12.835

Bhattacharya R, Singh P, Palit M, Waghmare C, Singh Anil K, **Gopalan N**, Kumar D (2014). Time-Dependent Comparative Evaluation of Some Important Biomarkers of Acute Cyanide Poisoning in Rats: An Aid in Diagnosis. Accepted in *BIOMARKERS* IF- 2.9

Mukesh K. Sharma, Gauri S. Agarwal, Vepa K. Rao, Sanjay Upadhyay, S. Merwyn, **Natarajan Gopalan**, Ganga P. Rai, R. Vijayaraghavan and Shri Prakash. 2010. Amperometric immunosensor based on gold nanoparticles / alumina sol–gel modified screen-printed electrodes for antibodies to *Plasmodium falciparum* histidine rich protein-2". *Analyst*, 135, 608–614 IF- 3.96

Sureban SM, May R, Ramalingam S, Subramaniam D, Natarajan G, Anant S, Houchen CW 2009. Selective Blockade of DCAMKL-1 Results in Tumor Growth Arrest by a Let-7a Micro RNA-Dependent Mechanism. *Gastroenterology*. 137(2):649-59, 659

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Subramaniam, D, **Natarajan, G.**, Ramalingam. S, Ramachandran .I, May. R, Queimado, L., Houchen, C.W. and Anant. S. 2008 Translation inhibition during mitotic catastrophe: Mcl-1 is a novel target for RNA binding protein CUGBP2. *Am J Physiol Gastrointest Liver Physiol* 294: 1025–1032

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Sureban, S.M., Ramalingam, S, **Natarajan, G.**, Ramalingam, S., Subramaniam, D., Morrison, A. R, Bishnupuri, S, Dieckgraefe, B. K, May. R, Houchen, C.W and Anant. S. 2008. Translation regulatory factor RBM3 is a protooncogene that prevents mitotic catastrophe through increased cylooxygenase-2 expression. *Oncogene* 1–13

Sureban, S.M, May, R, George, R. J, Dieckgraefe, B.K, McLeod, H. L , Ramalingam, S, Bishunpuri, K. S, **Natarajan, G**, Anant, S and Houchen, C.W. 2008. Knockdown of RNA binding protein musashi-1 (Msi-1) leads to tumor regression *in vivo*. *Gastroenterology* 134:1448–145

Mukesh K. Sharma, Vepa K. Rao, Gauri S. Agarwal, Ganga P. Rai, **N. Gopalan**, Shri Prakash, S. K. Sharma, and R. Vijayaraghavan (2008) Highly Sensitive Amperometric Immunosensor for Detection of *Plasmodium falciparum* Histidine-Rich Protein 2 in Serum of Humans with Malaria: Comparison with a Commercial Kit · *Journal of Clinical Microbiology* 46 (11): 3759-3765

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Berwal R., **Gopalan N.**, Chandel K., Shri prakash and K. Sekhar (2006). “Amplification of *LDH* gene from Indian Strain of *Plasmodium vivax*. *Journal of Vector Borne Diseases*.2006, 43: 109-114

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Berwal R., **Gopalan N.**, Chandel K., Prasad G.B.K.S, ShriPrakash. “High level soluble expression of *Plasmodium vivax* Lactate Dehydrogenase and its biochemical characterization”. (communicated)

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N. Gopalan, B. K. Bhattachraya, and S. Prakash, (2005). Altered acetyl cholinesterase and its inhibition to different OP insecticide in malathion resistant *Culex quinquefasciatus* say (Diptera : Culicidae) mosquitoes. *India J. Exp. Biol*

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PAPERS PRESENTED AT CONFERENCES/SEMINARS/SYMPOSIA

1. Chair a session or be a speaker for the ensuing International Conference on " Microbes for Sustainable Development: Innovations & Future Prospects" to be held at JSS Academy of Higher Education & Research (JSS AHER) 2021
2. N.Gopalan, attended the 21st Governing Body Meeting of JSS College of Pharmacy, Ooty on 28th February 2019 at Ooty.
3. N.Gopalan, nominated to participate in the DRDO Participation in Defence Equipment Display in 'Army Commander's Conference (ACC)-2019" during 9-10 April 2019 at Manekshaw Centre, Delhi Cantt.
4. N.Gopalan, attended the International Conference on "Role of agricultural engineering towards global food security" on 11th to 13th April 2019 at Bengaluru.
5. N.Gopalan, nominated to attend the Training Programme for DRDO TIRCs from 1st May to 3rd May 2019 at DESIDOC, Delhi.

6. N.Gopalan, nominated to attend and delivered a lecture on the theme “Food Science and Technology on 30.05.2019 in the National Seminar on “The UN Sustainable Development Goals, Ba-Bapu and Civil Society” during May 30 – June 1, 2019 at Gadag.
7. N.Gopalan, nominated to attend the 2nd Annual Indian Defence Conclave-2019 Focus on Aerospace & Defence during 7th and 8th Nov 2019 at NCUI Auditorium & Convention Centre, New Delhi.
8. N. Gopalan, nominated as Coordinator for Annual Meet/Workshop for HR Heads held during 16-17 July 2018 at DFRL, Mysore.
9. N. Gopalan, attended the Head TIRC’s Meet at ARDE, Pune during 29-30 Nov, 2018.
10. N. Gopalan, attended the Workshop on “Identifying Protecting & Managing Intellectual Properties in the Era of Industrial Revolution 4.0” during 05-07 Dec, 2018 at ER & IPR, New Delhi.
11. C. Panneerselvam, S. Priya, K. Murugan, D. Amerasan and **N. Gopalan (2014)** Green synthesis of silver nanoparticles using *Calotropis gigantea* and their potential activity against dengue and malaria transmitting mosquito larvicidal property at National Conference on Biosciences and health Engineering Current Scenario (BHE 2014) DIAT, Pune Jan 16-17
12. Senthilkumar, V. Venkatesalu and **N. Gopalan (2014)** Isolation of a novel antifungal peptide from the seeds of *Trigonella foenum-graceum*: A traditionally used medicinal plant at National Conference on Biosciences and health Engineering Current Scenario (BHE 2014) DIAT, Pune Jan 16-17
13. V. Venkatesalu **N.Gopalan** and A. Senthilkuma **(2014)** Flariasis, dengue and malarial transmitting Mosquito larvicidal molecule from traditional plant *Melothria maderaspatana* at National Conference on Biosciences and health Engineering Current Scenario (BHE 2014) DIA,T Pune Jan 16-17
14. Saurabh Shrivastava, Anil K Singh, Kshitij Chandel, Ritu Gill, Prativa K Behara, **N Gopalan** and PVL Rao **(2014)**. A systematic approach for optimization of up-scaling the expression and kinetic characterization of recombinant *Plasmodium falciparum* Lactate dehydrogenase (*Pf*LDH) in *E.coli* at National Conference on Biosciences and health Engineering Current Scenario (BHE 2014) DIAT, Pune Jan 16-17
15. Saurabh Shrivastava , Anil K Singh , Ritu Gill and **N. Gopalan (2014)**. Fed-Batch Fermentation and Downstream processing for Large-Scale Production of Recombinant *Pf*-LDH and Its Application in Malaria Diagnosis as a Platform for Screening of Antimalarial Chemotherapeutic Agent at National Conference on Biosciences and health Engineering Current Scenario (BHE 2014) DIA,T Pune Jan 16-17
16. M venkataramana, S Chandranayaka, Amit Kumar **N Gopalan**, HS Murali, HV Batra an PVL Rao **(2014)**. “Deoxynivalenol induced neurotoxicity and its attenuation by N acetylcysteine An invitro Evaluation at National Conference on Biosciences and health Engineering Current Scenario (BHE 2014) DIA,T Pune Jan 16-17
17. Singh Kumar Anil, TN Athmaram, Saraswat Shweta, Shrivastava Saurabh, Rao M.Kameswara and **N Gopalan**. Cloning, expression and characterization of *Plasmodium falciparum* merozoite surface protein-1 (MSP1₄₂kDa) in *Pichia pastoris* Nov 22-24, **2012**, NCL, Pune.
18. Anil K Singh, Athmaram TN*, Shweta Saraswat, Saurabh Shrivastava, Princi Misra and **Gopalan N**. Development Of Semi-Continuous Fermentation

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 20. Ambuj Shrivastava, Anil K.Singh, T.N.Athmaram, Saurabh Shrivastava, N. Gopalan; Cloning of *Plasmodium vivax* lactate dehydrogenase in Pichia pastoris in XI Symposium on Vectors and Vector borne disease during 15-17 Oct.**2011** at RMRCT, Jabalpur, India.
 21. **Gopalan, N**, Shrivastava,A., Singh,A.K., Rao,P.V.L.; Production and characterization of recombinant *Plasmodium falciparum* Lactate Dehydrogenase Enzyme. Asian Congress on Biotechnology, during 11-15 May, **2011** at Shanghai, China.
 22. Shweta Saraswat; Athmaram.T.N; Anil Kumar Singh; Gopalan. N; M.M Parida and P.V.L. Rao. Multi-copy integration of H1N1 Hemagglutinin (HA) expression cassette in *Pichia pastoris* for better expression of the recombinant protein, Virocon-**2011**, Hisar.
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 25. S. Merwyn Anil K Singh, **N Gopalan**, G S Agarwal. Generation and Characterisation of Monoclonal Antibodies against *rHRP-II* Antigen of *Plasmodium falciparum* Gwalior during 21-22, Jan 2011 at Gwalior, India.
 26. Sharama MK, Agarwal GS, Rao VK, UpahyayS, Merwyn S, **Gopalan N**, Rai GP, Vijayaghavan R and ShriPrakash **2009**. Electrochemical method for the detection of antibodies to Plasmodium falciparum histidine rich protein-2 by using gold nanoparticles/alumina sol-gel modified screen-printed electrodes. **X** International Symposium on Vector and Vector Borne Diseases 4-6 Nov at Goa.
 27. Ambuj Shrivastava, Anil K.Singh, T.N.Athmaram, Saurabh Shrivastava, **N. Gopalan** Cloning of *Plasmodium vivax* lactate dehydrogenase in *Pichia pastoris* Gwalior during 21-22, Jan 2011 at Gwalior, India.
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 29. **Natarajan Gopalan**, Anil Kumar Sing, Evidentiary Standards for Drug Development and its regulations. Workshop on Chemical& biological Defence Science & technology (August-8-10-2011)
 30. R Vijayaraghavan, A.S.B. Bhaskar, Anshoo Gautam, **N.Gopalan**, Anil Kumar Singh, Beer Singh, S.J.S.Flora. A Convenient First Aid Kit for Chemical and Biological Agent and for Radiation Exposure. Workshop on Chemical& biological Defence Science & technology (August-8-10-2011)

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35. Sharama MK, Agarwal GS, Rao VK, UpahyayS, Merwyn S, **Gopalan N**, Rai GP, Vijayaghavan R and ShriPrakash **2009**. Electrochemical method for the detection of antibodies to Plasmodium falciparum histidine rich protein-2 by using gold nanoparticles/alumina sol-gel modified screen-printed electrodes. **X International Symposium on Vector and Vector Borne Diseases 4-6 Nov at Goa.**
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54. Ramalingam, S, **Natarajan, G**, Sureban, S.M, May, R, Houchen, C and Anant, S. **2008**. RNA binding protein RBM3: A novel protooncogene required for

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 56. **Natarajan, G.**, Ramalingam, S, Ramachandran, I., May, R , Queimado, L., Houchen, C.W. and Anant, S 2008 Inhibition of CUGBP2 by Prostaglandin E2 suppresses radiation- mediated mitotic catastrophe in colon cancer cells. In **Digestive Diseases Week (DDW-2008) san Diego**
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 58. Draper, M. , Sureban, S.M, Ramalingam, S, **Natarajan, G.**, Houchen, C.W. and Anant, S 2008. Epidermal Growth factor induces expression of protooncogene RBM3 through P38 ERK resulting in increased COX-2 expression. In **Digestive Diseases Week (DDW-2008) san Diego**
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 62. **Gopalan N.** Participated in DRDO workshop on Physical Protection and Medical Management for NBC Emergencies at DRDE, Gwalior 20-21 Jan **2006**.
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69. **N. Gopalan**, G S Agarwal, GP Rai, SMP Raj, Shriprakash, and K.sekhar Participated in International Conference on Malaria, conducted by MalariaResearch Centre, New Delhi. (Nov. 4-6, 2005) “Detection of HRP-II antigen from *Plasmodium falciparum* by Latex agglutination Test”
70. Berwal R., **Gopalan N.**, ShriPrakash Participated in International Conference on Malaria, conducted by MalariaResearch Centre, New Delhi. (Nov. 4-6, 2005)
71. **Gopalan N** Participated in Indo- US International Symposium on Infectious Diseases Research and development at IISC, Bangalore 06-10 Jan 2004.
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83. K. S. Venkateswaran, S. Nagpal, L. Rajappa, **N. Gopalan**, K. M. Rao, and P. V. Subba Rao. Screening of Hapten-specific antibodies in Methyl Isocyanate exposed Bhopal population. XIV Annual Conference of Indian Immunology Society, Sri Nagar, India. October 1987.
84. K. S. Venkateswaran, S. Nagpal, L. Rajappa, **N. Gopalan**, M. P. Kaushik, H. Chandra, K. M. Rao, and P. V. Subba Rao. Evaluation of antibodies in the serum of Methyl Isocyanate exposed Bhopal population. Abstract accepted for the International Congress of Immunology, Toronto, Canada. July 1986.
85. K. S. Venkateswaran, B. R. Gandhe, M. P. Kaushik, **N. Gopalan**, S. K. Shindhe, and G. S. Agarwal. Detection of Isocyanate induced modification of haemoglobin by Gas liquid chromatography. First International Conference of Forensic Sciences, Madras, India. December, 1985.

TECHNICAL REPORTS

- ✓ Reports on monitoring OP insecticide resistance in mosquitoes in several Indian cities.
- ✓ Reports on isocyanate induced modified haemoglobin from exposed animals.
- ✓ Reports on immunodiagnosis of Glanders in animal population.
- ✓ Reports on evaluation and monitoring on pyrethroids insecticide in several civilian and army areas around Gwalior, India.

ABROAD VISIT

Participated as expert in **Indo- US Life Sciences workshop** at Washington, USA 12-16 Sep.2005 conducted by DTRA, USA

Worked as Post-Doctoral Research Associate at Oklahoma Health science Center (OUHSC), University of Oklahoma, USA for the **period of 2 years**

M. Sc., M. Tech. / PhD EXAMINER

University of Madras, **Chennai**,
 University of Delhi, **Delhi**
 University of Pune, **Pune**
Maharshi Dayanand University, **Rohtak**
 Rajive Gandhi Institute of Technology, **Bhopal**
 Mahavdave Institute of Technology, **Gwalior**
 Annamalai University, Chdambaram
 Pondicherry University Puducherry
 Osmania University, **Hydrabad**
 Manonmaniam Sundaranar University, **Tirunelveli**
 Bharathiyar University, **Coimbatore**
 The KLE Academy of Higher Education and Research,

BELAGAVI (KLE DEEMED UNIVERSITY), Karnataka
JSS University, **Mysore**
SAVITA Medical University, Chennai
Uttaranchal University, Dehradun

PROJECT EVALUATION MEMBER

*As a Core member for Project evaluation team BU-DRDO in **Bharthiyar University, Coimbatore in 2010-11***

*As a team member from DRDE, Gwalior for Ph. D recognition team for **Bharthiyar University, Coimbatore, 2011***

NEW GENES SUBMITTED TO GENBANK

1. *Plasmodium falciparum* strain Jind lactate dehydrogenase (LDH) gene. 951 bp
2008 Gene Bank: EU 330208.

2. *Plasmodium vivax* strain Gwalior lactate dehydrogenase (LDH) gene. 951 bp
2008 Gene Bank: EU 262983

Invited Talk/ Meeting attended as Mmember

Two days national conference on Biotechnology for Sustainable Agriculture and Healthcare held on 23- 24, March **2023** at Madurai Kamaraj university, School of Life Sciences, Madurai.

One day International conference on IMMUNFEST- Disease Management and Healthcare to be held on 28th April **2023** at PRIST, DEEMED to Be University, Thanjore.

“International Conference on REPRODUCTIVE BIOLOGY, COMPARATIVE ENDOCRINOLOGY & DEVELOPMENT and 39th Annual meeting of SRBCE to held at CSIR-CCMB, Hyderabad during September 14 - 16, **2022**

Annual International Conference of Association of Microbiologists of India (AMI) held 2nd - 4th February, **2023** at Maharshi Dayanand University, Rohtak. in "Microbiomics and Multiomics"

Defence Research & Development Establishment (DRDE), Gwalior is organized 3-day conference entitled ‘Chem-Bio Defence: Futuristic Tools and Technologies’ at **DRDE Gwalior** from 16-18 November, **2022** to commemorate the 75th year of its Establishment Presented paper and session chairman.

ICMR-VCRC Significant Carrier Award 2022, talk 25th June **2022** at VCRC, Puduchery

As Chief Guest "Novel Microbial Technologies in Sustainable Development" from 11.10.2019 to 12.10.2019 school of Biotechnology, Dr.G.R.Damodaran College of Science, Coimbatore

Invited talk and Chief Guest at GRD College Coimbatore on National Seminars on 5th Jan 2018

Point 22 Lectures (2) at DRDO-DIPAS, Delhi on 28th Jan **2019** Food Borne pathogen role and its detection and Food processing technology for newly recruited scientists to DRDO

Attended CBRN meeting and exhibition at Army HQrs, Delhi on 24th April **2019**

GRD College, Coimbatore BOS meeting for this academic year on 16.03.**2019** for Biotechnogy syallbu as chairman of GC

Lecture and Chief Guest during the two-day National Seminar on "Food borne disease and biocontrol at GRD College , Coimbatore– Jan 10-11 ,**2019**

Lecture and Chairing a Session during the three-day National Seminar on "The UN Sustainable Development Goals, Ba-Bapu and Civil Society" - May 30-June 1, **2019** 'Innovative Food Science Technology" at Karnataka State Rural Development and Panchayat Raj University, Gadag

Nominated and attended as member and Head TIRC conference of DRDO- DESIDOC meeting at Pune on 24-27th Feb **2019**

Point 21 Lecture at DRDO-DIPAS, Delhi on 8th Jan **2018** Food Borne pathogen role and its detection for newly recruited scientists to DRDO

Participated and presented in CBRN Workshop and Exhibition at DRDO Bhawan, Delhi on 12th Jan **2018**

JSS-GC meeting at JSS University, Mysore as GC member on 15th March **2018**

JSS-GC meeting at JSS Pharma College, Ooty as GC member on 28th March **2019**

Attended as Member of DRDO-DIAT, Pune for Entrepreneurship and Innovative Center on 12-16th Feb **2018**

Chief Guest for NUTRO National conference 2K 18 at JCT Eng & Tech , Coimbatore on 23rd March **2018** and presented a paper

As Member of JRF selection Board at University of Mysore on 24th March **2018**

Attended and Exhibited DFEXPO **2018** at Chennai on **8-15th April 2018**

Nominated as member of DRDO- DESIDOC TIRC meeting at Delhi on 16th April 2018

As Guest lecture deliverd talk at ALEAP for woman entrepreneur meeting at Vijayawada on Food Technology Development on 21st April **2018**

Special talk given on Food grain infestation by insects and modern control management for Army services core on 27th April **2018**

Invited talk at National Conference on "Recent advances and Control of Malaria", Maharashi Dayand University(MDU), Rotak, 24-25 Feb **2013**

Invited talk at 7th Conference of Medical Arthrophodology Conference on DRDL, Tezpur 21-23 Jan **2014**

Invited talk at National Conference on "Recent advances in membrane Process for water Treatment", PSG College of technology, Coimbatore, 26-27 July **2013**

Invited talk at International Conference on "Global warning Recent advances in membrane Process for water Treatment", PSG College of technology, Coimbatore, 26-27 Nov **2013**

National Science day Orationlecture “Drug development and its scale up Process”,DRDE Gwalior 28Feb 2011

Expert committee

Member in National Defence Research Forum (NDRF)
Member in National Task force Committee for CYBORG

Product and certificate obtained

Development of First **Aid Kit** and introduced in services
Licenses for tablets and formulations
cGMP Certificates FDA MP Drug Controller
Manual for scale-up facility for production

Members of University Council

- 1.Visiting Prof of Manipal University, Manipal **2014-16**
- 2.Member, Academic Council of NIFTEM, Kundli, Sonapat, Haryana 2019-22
- 3.BoS member Pondicherry University, Puducherry **2023-26**
- 4.BoS Holy cross College, Biotechnology and Biological Sciences, Thicherrypalli,**2001-24**
- 5.IEC Member Thiruvapur Medical College as **Social Scientist, 2021** onwards
- 6.Member, Board of studies of KSRDPR University, Gadag, Karnataka 2018-21
- 7.Member of Governing Council JSS Pharma College and University, Ooty 2016-19
- 8.Governing Council member JSS University, Mysore 2018-2020
- 9.Member of Academic Council JSS University, Mysore 2021-24
- 10.Member of Academic Council GRD College, Coimbatore etc., 2018-21
- 11.Member of Ved Lifesavers pharmaceutical products Research center in Uttaranchal University, Dehradun. 2020-2026
- 12.**PhD thesis Examiner in various Universities:** Delhi, Pune, Chennai, Pondicherry, Sativa, JSS, Annamalai Universities

Members of Research Institute:

Scientific Adversary Member (SAC) of Regional Medical
Research Center (ICMR-RMRC) **2022** onwards

WEBINAR Series lectures

1. Jiwaji University, Gwalior talk on 7th June 2020 “Natural food products from phytochemicals and its potential agents against inhibition of coronaviruses”
2. Aringar Anna Arts and Science Collage, Namakkal on 22nd June 2020 Title “Vector Borne Diseases and its Management “

3. Technical talk during 6-Day Webinar Series 22-27 June 2020 on "Immunomodulatory Functional Foods & Nutraceuticals" organized by Department of Biotechnology & Chemical Engineering, RIT, Bengaluru Title "Natural food products from phytochemicals and its Immunomodulatory Functional potential agents against inhibition of infectious agents"
4. School of Biotechnology, Dr. G.R. Damodaran College of Science, Coimbatore, TamilNadu. Webinar Series on Combating COVID-19 on 07 & 08th Aug 2020 Title "Immunomodulatory on functional potential agents of Natural food products against inhibition of infectious agent"

Faculty Participation in Faculty Development Programmes

Participated in the course "UNDERSTANDING AND EXPLORING EPIDEMIOLOGY" from 20th July to 27th August **2021** organized by Pune Knowledge Cluster (PKC) in collaboration with School of Health Sciences, Savitribai Phule Pune University (SPPU), Pune.

Mentors from Higher Educational Institutions / Universities (UGC) National Mentoring Mission of MoE Programme, NITTE, Chennai Online, **2021**, Feb1st-10 Feb

Training Programmes Webinar form Dept organized:

One-day webinar on "Universal Access to Vaccine & Medicines as a fight against Covid-19 towards World Awakening Day and the UAVM (Universal Access to Vaccine & Medicines)"; Campaign between 18 to June 23, **2021**, under the request of the Association of Indian Universities (AIU) was held on 23 rd June 2021.

Resource Persons: Dr. Paban Kumar Dash, Head, Dept of Virology, DRDO-DRDE, Gwalior Dr. Kodumudi Venkat Venkateswaran, Chief Scientist, Tetracore, Inc. Rockville, Maryland, USA, Dr ShriRam Selvaraju, Scientist, NIE Chennai

Project handled:

Capacity building and promoting good husbandry practices among livestock farmers for the livelihood, sustainable livestock production and upholding public health DST-SEED Sep **2021** to Sep **2024** Rs 71,35,828/-

12 Projects member in DRDO-DRDE-DFRL, 24.86 cros 2001-2020