



**Dr. DEVENDRA LINGOJAR**  
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*Post Doc Hematology – Medicine (USA)*  
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***Ph.D. Biochemistry and Post Doc in Medicine with 16+ years of experience in Molecular Biology:  
R&D, Genomics, Diagnostics and Vaccine research in Virology, Protein Therapeutics drug discovery***

**Nationality:** Indian

**Date of Birth:** October 18, 1975

**Present Location:** Pune INDIA

**AIM:** To explore *Molecular Biology* for providing solutions through diagnostics and therapeutics in virology and genetics

### **EDUCATION**

1. Ph.D. Biochemistry: University Department of Chemistry, University of Pune, Pune, India (May 2009 to Oct 2013)
2. M.Sc. Biotechnology: SRTM University Campus School of Life Sciences, Nanded, India (Jul 1997 to Jun 1999)
3. B.Sc. Biology with Chemistry, GN College of Science, Ballarpur, Nagpur University, India (Jul 1993 to Jun 1996)

### **AWARDS, HONORS, AND FELLOWSHIPS**

1. Best oral presentation “Int. Conf. on Revolution of Lab Med. in Molecular Biology” NIIH ICMR, Mumbai, India (2017)
2. “Post-Doc Fellowship in Medicine” by Albert Einstein College of Medicine New York, USA (2014)
3. “DHYAS foundation 2012” by Excellence group, India in Health and Environment safety as Team Leader (2012)
4. “Research Fellowship in Virology” by Indian Council of Medical Research (ICMR), New Delhi, India (2002)

### **RESEARCH EXPERIENCE**

1. Director – ADEETECH. All COVID19 Services: Diagnostics, Therapeutics: Lab Setup Clinical Trials (Apr 2018 onwards)
2. Director – ATG LAB Pune, except PhD and Post Doc duration (Oct 2007 to March 2018)
3. Post Doc. Research Fellow in Medicine - Albert Einstein College of Medicine, New York USA (Jul 2014 to Jul 2016)
4. Scientific Staff (Project Assistant-II) IRSHA, Bharati Vidyapeeth University Pune, (Jan 2006 to Jan 2007)
5. Principal Investigator Sickle Cell Disease - RESEARCH Pune, India (Jul 2005 to Dec 2005)
6. Senior Research Fellow National Institute of Virology (ICMR New Delhi) Pune, (Jul 2002 to Jun 2005)
7. Research Fellow in Biochemistry University of Pune - Pune, (Oct 2000 to Jun 2002)
8. Laboratory Technician B.J. Medical College – Pune and NIIH Mumbai, INDIA (Sep 1999 to Oct 2000)

### **SCIENTIFIC ADVISOR / TECHNICAL CONSULTANT FOR MOLECULAR DIAGNOSTICS AND VIROLOGY (2017 to till date)**

1. EON Biotechnology UK, for COVID19 regulatory documentation, RTPCR Rapid Antigen Rapid Antibody, ELISA (Oct. 2020 to till date)
2. NMB Therapeutics Inc, New York USA: COVID19 Therapeutics (May 2020 to till date)
3. Government Medical College Baramati India: COVID19 BSL2 lab design to making it functional (Apr 2020 to Jun 2020)
4. SLS Pune India as Virology Subject Expert for BSL2 and BSL2+ lab design to establishment and business model (Oct 2018 to Mar 2020)
5. NVBDCP Surat, India: Dengue Virus serotyping by qualitative and Real-Time PCR diagnostics (Jun 2019 to Oct 2018)
6. PRADO Preclinical Pvt. Ltd. Pune, India: Adventitious agent’s testing for private pharma companies (Oct 2017 to Dec 2018)

### **TEACHING EXPERIENCE**

1. Assistant Professor: Dr. D.Y. Patil Biotech and Bioinformatics Institute - Pune, (Jan 2007/Aug 2007) for “Molecular Virology”
2. Assistant professor in Indian Institute of eBusiness Management for MBA Biotech (Aug-Sep 2007) for “Business in Biotech”

### **CONTRIBUTIONS AND ACCOMPLISHMENTS (With study design, execution, analysis, reporting, presentation and publication)**

#### **1. ADEETECHGENE Biotech Pvt. Ltd.**

Technical Partner and Scientific Advisor: USFDA, WHO, ICMR, DCGI, and all 70 country specific diagnostic kit validation (current project: COVID19 specific tests), Antiviral testing Consultancy and marketing (Turn key project): in BSL2 and BSL2+ lab, with model surrogate viral agents for product testing using available BSL2 and BSL3 facilities. Animal Trials Marketing partner for skin and allergic reactions in lab animals, Lab setup for Government and private sector for COVID19 Diagnostics, Clinical trials (as C Lab): Phase II including lab work to sample shipment and logistics, Viral load analysis and reporting to sponsor, along with technical input for clinical trials with reference to Molecular Virology.

Biotech Services: Skill India project: Cell and Molecular Biology, PCR Genomics, ATC/PTC and Virology as business tie up model across India.

## **2. Albert Einstein College of Medicine New York, USA**

*Plasma expander-based drug designed using protein engineering, compared two isomers of PEG-Albumin. Using intravital microscopy and examined in transgenic Sickle Cell Disease (SCD) mice. Highly compact plasma expander due to higher packing density and compactness, induces more colloidal osmotic pressure and resolves vaso-occlusive crisis (VOC) better than the other molecules.*

## **3. National Institute of Virology (ICMR New Delhi) – Pune, INDIA**

*First time reported - Human Parvovirus B19 virus in Indian SCD patients using serology and genomics. First time established SCD affected tribal sera bank in India for virus and antibody testing in Indian tribal population. Contributed for Dengue virus projects during Dengue outbreak in 2003 in Pune district: Dengue virus platelet assay for  $\gamma$ FCRII receptor, Generation of Hepatitis E virus infectious cDNA clones for rDNA vaccine, Chandipura virus NT test etc.*

## **4. ATG LAB, Pune, INDIA**

*Provided transferable skills in molecular biology including PCR genomics and DNA barcoding in bacteria, plants, viruses, human and parasites. Skill development in Biotech PCR genomics: 100+students in 6-month projects, 300+ students in training, 400+ students in workshops. General administration, staff training, course and content development. Provided consultancy with lab services to pharma and biopharma companies for adventitious agent testing (22 viral and non-viral adventitious agents testing panel in duck and swine), Provided R&D services to academic institutes. Guidance to M.Sc. and Ph.D. students with publications as guide and co-guide.*

## **5. Regional Society for Education and Research in Community Health (RESEARCH), Pune INDIA**

*SCD epidemiology (10,000 tested till date), clinical genomics, genetics modifiers and molecular haplotyping. Grant writing and submission, lab establishment in the rural tribal area, training staff, Arranging Diagnostic camp, Marriage Counseling and Genetic Counseling for prenatal diagnosis, SCD clinical management. Project idea, training students, data analysis and troubleshooting*

## **6. Interactive Research School for Health Affairs, Bharati Vidyapeeth University – Pune, INDIA**

*First Time Reported- Mg deficiency in type 2 diabetes, which gained most of the citations. Beta thalassemia field level screening test development (award: Lockheed Martin Gold Medal). Conducted research on two projects, diabetes, and beta-thalassemia*

## **7. Biochemistry Division, Chemistry Department, University of Pune - Pune, INDIA**

*Initial work on alkaliphiles formed the basis of Bioenergetic studies, later on, studied molecular aspects of ATP synthase about thermodynamically challenging proton uptake in Alkaliphile. First Time Reported - no specific amino acid residues in ATP synthase for adapting bacteria at high pH.*

## **8. B.J. Medical College – Pune and NIIH Mumbai, INDIA**

*Contributed to the first-ever multicentric project amongst Primitive Tribal Population of India on SCD by ICMR. Fieldwork and lab establishment in tribal areas, population screening for genetic analysis, diagnosis of hemoglobinopathies-Beta Thalassemia, SCD, HbF and G6PD deficiency in tribal areas by arranging camps. Sample preparation for further molecular tests at NIIH Mumbai.*

### **RESEARCH PROJECTS: HUMAN VIROLOGY**

1. Prevalence and pathogenesis of human parvovirus B19 in sickle cell affected population
2. Generation of infectious cDNA clones for hepatitis E virus for developing rDNA vaccine
3. Viremia and altered platelet aggregation: early triggers of thrombocytopenia in Dengue virus infection
4. Virus neutralization tests for Chandipura virus with specific reference to SCD affected sera
5. Prevalence of HHV6, CMV and B19 virus in aplastic anemia cases from KEM hospital Mumbai
6. Preparation of tribal sera bank at NIV for sickle cell anemia affected tribes for different viruses
7. Neutralizing antibodies against Chandipura virus in Western Indian tribal population affected by SCD
8. Human Herpes Virus 6, Cytomegalovirus and Human Parvovirus B19 virus in aplastic anemia cases
9. Serotype analysis of Dengue virus from Western India
10. COVID19 B2B Businesses in Diagnostics and Therapeutics, Lab Setup, Phase II Clinical trials, Technical Guidance etc. (Current Projects)

### **RESEARCH PROJECTS: HUMAN GENETICS**

1. Intervention program on nutritional anemia and hemoglobinopathies in Indian primitive tribes
2. Sickle Cell Disease (SCD) epidemiology studies in Western India and Central India
3. Prevalence and pathogenesis of B19 virus in SCD affected tribes in Western, Central and Southern India
4. SCD prevalence studies in Eastern India (Chhattisgarh) and Central India (Maharashtra)
5. SCD epidemiology studies of tribal and non-tribal population groups from Central and South India
6. Beta thalassemia POC diagnostic kit development: Lockheed Martin Gold medal awarded project
7. Single blood drop technology for diagnosis of homozygous SCD (Maharashtra)
8. Variation of abnormal hemoglobins HbS, Hb E and HbAJ in Durg Chhattisgarh
9. Research in the Development of Therapeutic Reagents for Sickle Cell Disease (at EINSTEIN, New York USA)
10. Clinical genomics study of Indian sickle cell disease patient with high fetal hemoglobin
11. Sickle Cell Disease genomics-based haplotype studies: Fetal Hb > 20% Vs HbF < 5%

## RESEARCH SKILLS AND EXPERTISE

### A. Molecular Diagnostics and Therapeutics for Viral and Non-Viral Pathogens

Bioinformatics for viral and bacterial gene studies, primer design for PCR and primer and probe design for Real Time PCR, protocol standardization, DNA, RNA and protein extraction by manual and kit based protocols, PCR, Reverse Transcriptase PCR, Real-Time PCR (Eppendorf, Applied Biosystems, MJ mini, Bio-Rad), ELISA and virus NT, cloning and gene expression for infectious cDNA clones, Maxi and Miniprep of DNA, Viral molecular taxonomy and phylogeny, Viruses studied: Dengue, Hepatitis E virus, Human Parvovirus B19, HHV6, CMV, COVID19 for Real Time PCR Kit development, primer and probe design using RdRp and E/S/N gene, Bacterial 16S rRNA molecular phylogeny. Viral and Non - Viral infectious agents testing for pharma companies: viruses, bacteria, fungus and mycoplasma under adventitious agent testing (22 test panel of swine and duck viral and non-viral agents), Viral peptide design B19 virus, Platelet assays for Dengue virus, Dengue Virus serotyping by Real Time PCR and malarial parasite genotyping by Sanger's method. Negative staining for Transmission electron microscopy, virus isolation by animal cell culture e.g. HepG2 cell line and co-culture with primary liver culture for Hepatitis E virus. Acute and chronic phase viral peptide synthesis etc.

### B. Viral Disease Pathogenesis

Human Parvovirus B19 prevalence in SCD patients, Tribal sera bank for viral prevalence and blood component separation: Plasma, RBC, PBMC; DNA, protein isolation, PCR and Sanger's DNA Sequencing, Multiple Sequence alignment and phylogeny, IgM ELISA, IgG ELISA for establishing Transient Aplastic Crisis in sickle cell disease patient, for the first time in India using genotyping of the virus.

### C. Protein Therapeutics: Drug Design, Drug Discovery and Preclinical Studies (Plasma Expander, protein engineering)

Protein modification by PEGylation chemistry, human and recombinant Albumin purification and characterization, Analytical and preparative chromatography i.e. SEC, IEC, (Mono Q, DEAE, CM52), HPLC, FPLC, AKTA Basic and AKTA purifier with Unicorn 7 software for scale-up of protein products, molecular radius by DLS, protein folding studied by DSC, MALDI TOF Mass Spectra. Final product development and preclinical trials on transgenic SCD mice models, BERK and NY1DD by intra vital microscopy.

### D. Population Genetics: SCD Epidemiology, Diagnostic and Clinical Studies

Fieldwork preparation in tribal areas, lab set up in the field, IV and finger-prick blood collection, blood component separation, processing for plasma/sera bank, RBCs and PBMCs; DNA and protein isolation, Solubility test and Hb electrophoresis, NESTROFT for thalassemia, Fetal Hb estimation by Sanger's method and Bio-Rad HPLC Variant, Pedigree analysis and gene frequency studies, marriage counseling for sickle cell carrier population, prenatal diagnosis by ARMS PCR, genetic counseling.

### E. Clinical Genomics for Human Genetics Disorder

Human Beta Globin genomics, Human genome map studies for beta-globin cluster region primer designing, PCR amplification of exon 1, exon 2 and exon 3 of Beta Globin (HBB), A Gamma Globin (HBG1) and G Gamma Globin (HBG2) with their promoter and introns regions, DNA sequencing by Sanger's method for clinical genomics studies, Analysis of clinical biochemistry, HbF level and reporting of SNPs.

## SCIENTIFIC CONTRIBUTIONS AND ACADEMIC ACTIVITIES

**A. Member of Academic Council:** D.Y. Patil Education Society Kolhapur, India for Biotechnology for year 2020 - 2022.

**B. Member of Board of Studies:** Bajaj College of Science, Wardha India for Biotechnology for year 2020 onwards

**B. Volunteer judge at NYC Science and Engineering Fair:** *Cell and Molecular Biology* :03/01, 2015, 03/07, 2016 and 03/29, 2016

**C. Workshops conducted in Molecular Biology and genomics:** 11 workshops 400+ beneficiary (2007 – 2020)

**D. Invited lectures on:**

1. "Success Story as Bioentrepreneur" Microbiologists society of India and Bajaj college of Science, Wardha, Webinar (Jul 22, 2020)
2. "Bio entrepreneurship: Fun, Business, Risks and sometimes success" SRTM University, Nanded. (Mar. 2, 2019),
3. "Applications of Molecular Markers in Animal Diversity Assessment" Wadia College, Pune (Oct. 1, 2018),
4. "Bio-entrepreneurship in Genomics" Patkar Varde College Goregaon Mumbai (Feb. 10, 2018),
5. "Sickle Cell Disease in India and The World" DY Patil Education Society Kolhapur (Sep 30, 2019)

**E. Reviewer for National and International journals:** *Scientific Reports, Journal of Genetic Syndromes & Gene Therapy, Journal of Phylogenetics & Evolutionary Biology, Journal of data mining in genomics and proteomics, Current Agriculture Research Journal, Transcriptomics, Current Science*

## PUBLICATIONS

1. NCBI database DNA and Protein (77): All corresponding and first or senior authored) (15 sequences under publication)  
NCBI: <https://www.ncbi.nlm.nih.gov/nuccore/?term=lingojwar>
2. Publications in International and National Journals, (15 journal publications) with 234 citation; (3 under preparation)  
<https://scholar.google.co.in/citations?user=tsq9ab0AAAAJ&hl=en&oi=ao>
3. International and National Conferences abstracts: (23)
4. [https://www.researchgate.net/profile/Devendra\\_Lingojwar2](https://www.researchgate.net/profile/Devendra_Lingojwar2) (RG Score 22.84 with 77.5%)