

Sampada Chande (née Puranik)

100, Southwind drive, Wallingford CT 06492

Cellphone: 609-772-2949 email: sampadapuranik1987@gmail.com

OBJECTIVE

To work with a group in research/ development / analysis applying my skill sets and contributing to achieve the institution goals.

PROFILE

- **Postdoc Associate** at Yale School of Medicine 2015
- **Ph.D (Biotechnology)** from National Environmental Engineering Research Institute, India 2014
- **M.Sc (Biotechnology)** (Class I with Distinction) from Nagpur University, India 2009
- **B.Sc (Biotechnology)** (Class I with Distinction) from Nagpur University, India 2007
- **Industry experience** in Pharmaceutical and Genomics domains.
- **Lab experience** : More than 4 years of National and International research and writing proposals
- **Teaching experience** : 4 years of teaching in microbial genomics for trainees and AcSIR students.

ACHIEVEMENTS

- Passed the National Eligibility Test (NET) conducted by CSIR, India for fellowship and lecturership.
- Won the University Gold Medal in Botany (B.Sc) for academic achievement.
- Ranked amongst the top three at university level in Post-graduation (M.Sc)

RESEARCH PROJECTS

- **Yale School of Medicine**
 - Developing immunoprecipitation protocols to study phosphate metabolism diseases
 - Role of key regulators of phosphate metabolism in drosophila and murine models
- **National Environmental Engineering Research Institute, India (In collaboration with Dept. of Civil and Environmental Engineering, University of Connecticut Storrs.)**
 - Increase in efficiency of energy production through microbial fuel cells using sewage waste water
 - Monitoring COD in microbial fuel cells to demonstrate treatment efficiency
 - Metagenomics of optimized system to get an insight into catabolic functionalities
- **Institute of Bioresources and Sustainable Development, Manipur, India**
 - Conducted training courses in RNA isolation and setup RTPCR at the institute lab.
 - Project proposal accepted for Lake diversity study of lake Loktak, Manipur. Sequencing done with the available funds
- **Madurai Kamraj University, Madurai, India**
 - Performed transcription profiling of *E.coli* and microarray data analysis
 - Data submission (available on EBI Array express)
- **Central India Institute Of Medical Science, Nagpur, India**
 - Organ specific strains have varying genetic features based on requirement of colonization in the region: Mycobacterium tuberculosis study (Ongoing)
- **DOAST, Integrated Therapy Center For Autism Spectrum Disorders, Chennai, India**
 - Development of probiotic for Autistic children through study of gut microbiota (Ongoing).
- **Nicolas Piramal Pharmaceuticals Pvt. Ltd. (Research Division), Mumbai, India**

- Industry sponsored project titled “Screening for Bio-molecules from microbial diversity collected from different ecological niches and chemical characterization of selected hits for bio-actives”
 - Worked on the first phase of the project at NEERI
 - Involved in all aspects of the project including proposal writing, data management and co-ordination.
- **Cipla Pharmaceuticals Pvt. Ltd. (Manufacturing & Research Division), Mumbai, India**
 - Performed sensitivity tests on tablet samples
 - Study and Implementation of pharmacopias
 - Understanding and Implementation of quality control procedures
 - Clinical SAS: Data management and principles.

EXPERIENCE

Yale School of Medicine

July 2015- Present

National Environmental Engineering Research Institute, India

July 2009 – Sept 2013

Senior Research Fellow (CSIR)

February 2011 – Sept 2013

Junior Research Fellow (CSIR)

February 2010 – Jan 2011

Junior Project Fellow (CSIR)

July 2009- Jan 2010

- Pursued research work towards PhD degree : Topic : Study of redox mediated differential expression of housekeeping genes: an *Escherichia coli* model
- Taught classes and conducted labs: General genomics procedure for AcSIR
- Designed and Optimized lab protocols: RTPCR, transcriptomics, microarray and TILDA
- Evaluated industry samples: Analyzing sample from waste water treatment plants
- Conducted relevant short-term projects at various institutions via collaborations
- **Prominent Projects**
 - *Development of probiotic for Autistic children through study of gut microbiota (Ongoing).*
 - *Macro array for detection of catabolic genes in metagenome derived from a common effluent treatment plant” as a part of M.Sc. curriculum (IV Semester).*

SKILLS

Molecular Biology	DNA/RNA isolation from various sources, Quality analysis using Bioanalyzer, Plasmid preparation, Restriction digestion, PCR, RT-PCR ,RAPD, Cloning, Dot Blot Hybridization, Microarray, Transcriptomics ,Taqman arrays (TILDA), Genome sequencing, Metagenome sequencing , Oligonucleotide synthesis , Promoter activity determination (Victor multiplate reader)
Microbiology	Staining techniques, Pure culture isolation techniques, Antibiotic sensitivity tests, Vitamin assay
Cellular physiology	Respirometric rate determination, Growth curve dynamics and development of growth models
Biophysical techniques	Spectrophotometry, Colorimetry, Centrifugation, Electrophoresis, Chromatography, HPLC, SDS-PAGE
Plant Biotechnology	Plant tissue culture and all related techniques
Animal Biotechnology	Preparation of media, Sterilization techniques
Immunology	Immunochemical techniques (Ouchterlony Double Diffusion, ELISA, RID)
Data Analysis	ANOVA, Multiple ANOVA, FDR calculation in microarray analysis in SAS environment, Normalization of microarray datasets and construction of box plot, Datafit, HKY (Hasegawa, Kishino and Yano) model

Bioinformatics	Cytoscape- Bioquali plug-in network construction, MG-RAST, RAST, BLAST, DAVID, DNA Star for primer designing, BioNumerics for gel band pattern analysis, TreeView and ClustalW for construction of phylogenetic trees, NCBI prokaryotic genome annotation pipeline, MEME analysis, Mauve score analysis for protein bands, Expasy, My Hits
----------------	--

PUBLICATIONS

Papers

1. Paliwal V, Puranik S, Purohit HJ (2011) Integrated Perspective for Effective Bioremediation. **Appl Biochem Biotechnol. 166:4,903-924**
2. Puranik S, Shaligram S, Paliwal V, Raje D , Kapley A, Purohit HJ (2012), Demonstration of sequential adaptation strategy for developing salt tolerance in bacteria for wastewater treatment: A study using Escherichia coli as model. **Bioresource Technology 121 ,282–289**
3. Puranik S, Talkal R, Qureshi A, Khardenavis A, Kapley A and Purohit HJ (2013) Genome sequence of pigment producing bacteria Pseudogulbenkiania ferroxidans isolated from Loktak lake **Genome Announc. 1 no. 6 e01115-13**
4. Li Y , Wu Y, Puranik S , Lei Y, Vadas T , Li B(2014) Metals as electron acceptors in single-chamber microbial fuel cells **Journal of Power Sources 269, 430-439**
5. Kashyap RS, Bhullar SS, More RP, Puranik S, Purohit HJ, Taori GM, Dagainawala HF. 2014. Genome sequence of Mycobacterium tuberculosis C2 from cerebrospinal fluid clinical isolate from Central India. **Genome Announc. 2(4):e00842-14.**
6. Puranik S, Purohit HJ (2014) Dependency of Cellular Decision Making in Physiology and Influence of Preceding Growth Conditions. **Appl Biochem Biotechnol.174:5,1982-1997**
7. Puranik S, Purohit HJ (2015) Dynamic interactive events in gene regulation using E.coli dehydrogenase as a model. **Functional and Integrative Genomics 15,175–188**

Abstracts

1. Sampada Puranik, Vasundhara Paliwal, Sajan C.R. and Hemant J. Purohit (2010), **Tracing evolutionary residues across genome database with reference to super oxide dismutase gene**, 79th Annual meeting of The Society of Biological chemists, India
2. Sampada Puranik, Hemant J. Purohit (2011), **Nutritional Condition Dependant Tolerance To Hydrogen Peroxide Stress In Escherichia coli**, NHB,2011.

DATA ANALYSIS & SUBMISSIONS

- **Microarray Data (Repository: EBI Array express)**

1. Transcription profiling by array of differential utilization of carbon sources in Escherichia coli based on previous nutritional conditions (Catalog # E-MEXP-3800)
2. Transcription profiling by array of Escherichia coli subjected to two different types of nutritional scenarios to investigate nutritional condition dependant differential tolerance to hydrogen peroxide stress (Catalog # E-MEXP-3799)

- **Genome Sequences (Repository: National Center for Biotechnology Information)**
 1. Pseudogulbenkiania ferrooxidans EGD-HP2, whole genome shotgun sequencing project
GenBank: AVPH00000000.1; BioProject: PRJNA215707
 2. Staphylococcus sp. EGD-HP3, whole genome shotgun sequencing project
GenBank: AVOQ00000000.1; BioProject: PRJNA211616
- **Metagenome Sequences (Repository: National Center for Biotechnology Information)**
Sediment metagenome, Whole Genome Shotgun project DDBJ/EMBL/GenBank: JAHE00000000.

RESEARCH ARTICLE REVIEWS

- Indian Journal of Microbiology - 9
- Applied Biochemistry and Biotechnology – 5
- PLoS ONE - 2

TRAINING

1. Chemical and Biological Lab Safety
2. Xcelris Genomics, Ahmedabad, India : Transcriptomics, Sequencing
3. Life Technologies, Mumbai : RTPCR, Tilda
4. National Center for Cellular Science, Pune India : Genome Sequencing
5. Rainbow Medinova Diagnostic Center, Nagpur India : Diagnostic Procedures

REFERENCES

(Available upon request)