Ruchika O'Niel

Email: onielruchika94@gmail.com https://www.linkedin.com/in/ruchika-o-609a83206/
Mobile: +91 9096478936 https://twitter.com/annieoniel

I am motivated to complex interactions within cellular populations from a metabolic and epigenetic perspective, using a systems biology approach. My broad expertise in the field of molecular biology and biochemistry spans over 3 years. I'm very interested in the application of -OMICS approaches to dissect inter-cellular interactions, with the aim of gaining a systems perspective on tissue/ecosystem homeostasis.

TECHNICAL EXPERIENCE

- ***Project:*** **"Bioprocess Optimization for large scale target protein production"**
  Research Fellow *(2021 - till date)*
  Indian Institute of Technology, Department of Chemical Engineering *Mumbai - India*
  ***Supervisor*: Prof. Pramod Wangikar** *Sector: Academia*
  - Large scale bioprocess optimization in *E.coli* using fedbatch and continuous fermention culture techniques on *Applikon* Bioreactors.
  - Genome editing, protein overexpression and purification from *E.coli*.
  - Method development for refolding misfolded protein. Further protein characterisation done using chromatography and spectrophotometric techniques.
  - Use untargeted metabolomics to remediate bioprocess bottlenecks to create high target compound titres.
- ***Project:*** **"Characterization of phenotypically heterogeneous yeast cells"**
  Research Assistant *(2018 - 2020)*
  Institute of Stem cell Science and Regenerative medicine *Bangalore - India*
  ***Supervisor*: Dr. Sunil Laxman** *Sector: Academia*
  - Investigation of metabolic state switching in prototrophic yeast strain using targeted metabolomics and transcriptomics approaches.
  - Enzyme kinetic studies of yeast trehalases.
- ***Project:*** **"Characterization of deep sea hydrothemal vent microbiota"**
  Research Intern *(2016)*
  National Centre for Antarctic and Oceanographic Reasearch *Goa - India*
  ***Supervisor*: Dr. K.P Krishnan** *Sector: Academia*
  - Isolation and characterization of bacterial samples from deep-sea environments
  - Culturing and maintenance of bacterial stocks and cultures
  - Enzyme profiling of bacteria and DNA isolation
- **Technical Assistant** *(2015)*
  Goa Medical College *Sector: Government/Medical*
  - *Microbiology Department:* Culture and identification of pathogen isolates - patient samples
  - *Biochemistry and Pathology Department:* Blood sample collection and preparation , ELISA tests.
  - *Forensic Department:* Collecting medico-legal evidence from cadavers.

THESIS STUDIES, RELEVANT COURSEWORK

- **Flavonoid profile of Marine brown algae of Goa.**
  (M.Sc Project | Guide: ***Prof. Urmila Maria Barros*** *|* ***Goa University****)* *(2016 - 2017)*
  Relevant course work:
  - Biochemistry, Enzymology, Marine Pharmacology, Cell and Developmental Biology, Bioprocess and Fermentation technology.
- **Characterization of Xylanase from marine Bacillus species**
  (B.Sc Project | Guide: ***Dr. Donna D'Souza Ticlo*** *|* ***Dhempe College of Arts and Science****)* *(2014 - 2015)*
  Relevant course work:
  - Microbiology, Biochemistry, Genetics, Molecular Biology, Chemistry (elective), Biostatistics and Bioinformatics

EDUCATION

Examination	University/Board	Institute/Department	Year	GPA/%
Graduation	Goa University	Marine Biotechnology	2015 - 17	68.8
Undergraduate	Goa University	Biotechnology	2012 - 2015	80.2
Intermediate(+2)	Goa Board	St. Xavier's	2010	86.3

TECHNICAL SKILLS

- **Instrumentation**: GCMS (Agilent systems), HPLC/LCMS/MS (ABSciEX 6500, and TSQ Vantage), AKTA workstations (AKTA flux and AKTA pure), Fluorecence microscopy, Circular Dichorism (JASCO), Spectrometry (Shimadzu series)
- **Programming & Libraries**: Python, R, LaTeX, Bioconductor package (edge R), MS-DIAL, XCMS
- **Laboratory skills**: Isolation and Culture maintenance, PCR, ELISA, Molecular cloning, Westernblot, SDS-PAGE, Immunoprecipitation assays,Biochemical enzyme assays, CRISPR- Cas9 for Site directed mutagenesis, DNA and RNA isolation, RNASeq analysis, Data Analysis and Technical Writing, NGS workflow and genome and transcriptome analysis, de-novo Genome assembly, SNP/translocation/indel/mutation analysis

PUBLICATION AND CONFERENCES

- **Publications**
  Bhatia M, Thakur J, Suyal S, **Oniel R**, Chakraborty R, Pradhan S, Sharma M, Sengupta S, Laxman S, Masakapalli SK, Bachhawat AK. (2020). Allosteric inhibition of MTHFR prevents futile SAM cycling and maintains nucleotide pools in one carbon metabolism. *The Journal of Biological Chemistry.* PMID: 32934008. `https://doi.org/10.1074/jbc.RA120.015129`.

  Tripathi A, Anand K, Das M, **Oniel R**, P S S, Thakur C, R L, R R, Rajmani, R S, Chandra N, Laxman, Singh A. (2022). Mycobacterium Tuberculosis requires SulfT for Fe-S cluster maturation, metabolism, and survival in vivo. *PLoS pathogens*. PMID: 35427399. `https://doi.org/10.1371/journal.ppat.1010475`
- **Conferences**
  Helped organize international workshop, CCCP(Conflict and Cooperation in Cellular Populations) - 2020

ACCOLADES

- GATE – Biotechnology 2017 percentile: 98.77
- DST Inspire Scholarship (stipend to carry out research fellowship, based on merit, unapplied)
- Leo Mackeson Barros Gold Medal (2017) – First ranker in M.Sc. Marine Biotechnology
- First ranker – Honors (2015) B.Sc. Biotechnology.

REFERENCES

Dr. Sunil Laxman
Institute of Stem Cell Science
and Regenerative Medicine
GKVK-Bellary Road, 560065
Bangalore - India
sunil@instem.res.in

Prof. Savita Kerkar
Department of Marine Biotechnology
Goa University
Taleigao Plateau, 403206
Goa - India
savita@unigoa.ac.in

Prof. Urmila Maria Barros
Department of Biotechnology
Goa University
Taleigao Plateau, 403206
Goa - India
urmilamaria@gmail.com