

E Ramesh

Laboratory of Genome Informatics
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Academics

Mar 2022-Present	SRF., Laboratory of Genome Informatics CDFD, Uppal, Hyderabad
Aug 2019-Mar 2022	Project Assistant., Department of Dietetics ICMR-National Institute of Nutrition, Hyderabad
Jun 2016- Mar 2018	M.Sc., Animal Biology and Biotechnology University of Hyderabad, Hyderabad, India
Jun 2013-Mar 2016	B.Sc., Botany, Zoology and Chemistry Silver jubilee Govt. college Kurnool, India

Research Experience

March 2022-Present	<p>Genome-Wide Identification and Characterization of Stress-Responsive and Defense Related Gene Families in Amaranth Using Integrative Genomics and Deep Learning Approaches</p> <p>Conducted a comprehensive genome-wide analysis of key gene families involved in abiotic and biotic stress responses in <i>Amaranthus hypochondriacus</i>, including NAC, MYB, and NLR genes. The study employed advanced bioinformatics pipelines for gene identification, structural and phylogenetic characterization, motif/domain analysis, and expression profiling under various stress conditions. Additionally, a novel deep learning-based model was developed to classify defense-responsive and pathogen receptor genes using curated sequence features and training datasets. This integrative approach provided functional insights into stress adaptability in amaranth and laid a foundation for crop improvement strategies through molecular breeding and AI-based gene prediction.</p>
Aug 2019 – Mar 2022	<p>Development of database on the Glycemic carbohydrate and Glycemic index / load of foods, food products and beverages</p> <p>Performed macro nutrient analysis of South Indian foods, including carbohydrates, proteins, fats, dietary fiber, moisture, and ash content. Conducted mineral analysis using atomic absorption spectroscopy and evaluated the glycemic index to identify foods with low glycemic impact.</p>
Jan 2018 – May 2018	<p>Probable role of <i>Plasmodium berghei</i> nicotinamidase as a malaria transmission blocking target</p> <p>The project aimed to evaluate the impact of nicotinamidase inhibitors on the sexual stages of Plasmodium. Commercial nicotinamidase inhibitors, known for their efficacy against <i>Mycobacterium tuberculosis</i>, were tested to determine if they could obstruct sexual reproduction in Plasmodium. Despite exposing cultures to 100 µM concentrations of three different inhibitors, no significant impact on ookinete formation was observed. This suggests that either the inhibitors are ineffective or higher concentrations may be necessary, warranting further investigation.</p>

Technical skills

Data Science and Programming:

- ✚ Data Science with Python
- ✚ Machine Learning
- ✚ Deep Learning
- ✚ Python
- ✚ C
- ✚ C++
- ✚ Bash Scripting
- ✚ SLURM

Bioinformatics and Computational Biology:

- ✚ Bioinformatics
- ✚ NGS Analysis
- ✚ Single Cell RNA Sequencing Analysis
- ✚ Molecular Dynamics Simulation

Operating Systems:

- ✚ Linux
- ✚ Windows

Academic Achievements

- Qualified in GATE Exam in 2020 and 2021
- Qualified in CSIR NET June 2020
- Selected for M.Sc., Animal Biology and Biotechnology, conducted by University of Hyderabad, Hyderabad in 2016
- Secured All India 48th rank in ICAR's AIEEA-PG-2016 examination
- Selected for M.Sc., Zoology in the state level entrance examination conducted by Osmania University, Hyderabad in 2016
- Selected for B. Sc., Botany, Zoology and Chemistry, state level entrance conducted by A.P.R.D.C in 2013.

Conferences attended

- Presented a poster at the Annual Talks at CDFD, held on July 18-19, 2024.
- Attended the 9th Annual Conference of the Society for Mitochondrial Research and Medicine organized by SMRM-India and the CDFD, Hyderabad, India, held on 21-23 June 2023.
- Attended one-month virtual international workshop on Epigenomics and Immunoinformatics from March to April 2023 conducted by Decode Life.
- Attended Hyderabad's Student Centric Conference (HySci) in 2022 and 2023.
- Participated in workshop on Long Read Genome Sequencing by Nanopore Technology organized by CDFD in 2023.
- Attended one-month virtual international workshop on Cancer Genomics and Bioinformatics from June to July 2022 conducted by Decode Life.
- Participated in International Conference on Biomacromolecules and cellular Interface (ICBCI -2021) organized by Department of Biotechnology, Dr B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab, India.
- Presented poster on disadvantages of excessive use of smart phone on open day at National Institute of Nutrition (NIN), Hyderabad in 2019
- Participated in International Conference on Reproductive Physiology and Comparative Endocrinology (ICRPCE) at University of Hyderabad in February 2017.
- Participated in Bio-Quest 2016 and 2017 organized by the school of Life Sciences, University of Hyderabad, Hyderabad.

References

1. Dr. M.S Radhika, Scientist-F
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Declaration

I hereby declare that all the above information is correct and accurate to the best of my knowledge.

E Ramesh.