

SRI SANKARA ARTS & SCIENCE COLLEGE

ENATHUR, KANCHIPURAM

STAFF PROFILE

DEPARTMENT OF BIOTECHNOLOGY



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|-----------|--------------------------------|---|
| 1. | Name of the Staff | Dr. A. Rajalakshmi, M.Sc., Ph.D., |
| 2. | Designation | Assistant Professor |
| 3. | Date of Joining | 18.07.2022 |
| 4. | Mobile Number | +91 9952122766 |
| 5. | E-Mail ID | rajalakshmi@sankaracollege.edu.in raji.biotech98@gmail.com |
| 6. | Nationality | Indian |
| 7. | Academic Qualification | M.Sc., ADBI., Ph.D., |
| 8. | Field of Specialization | Microbial Biotechnology Bioinformatics Computational Biology |
| 9. | Ph.D Thesis Title | Magnetosome nanoparticles from freshwater magnetotactic bacteria: isolation, characterization, and application studies. |
| | Awarding University, | University of Madras |

10. Work Experience (in chronological order):

| S.No. | Name of the Institution | Designation | Period |
|-------|--|--|------------------------------|
| 1 | Sri Sankara Arts and Science College (Autonomous), Kanchipuram | Assistant Professor | July, 2022 to Till date |
| 2 | Sri Sankara Arts and Science College (Autonomous), Kanchipuram | Faculty, Centre for Computer-Aided Drug Design and Discovery (CADDD) | July, 2022 to Till date |
| 3 | Victoria Matriculation Higher Secondary School, Kanchipuram | Teacher and Subject Coordinator | June, 2013 to December, 2016 |

11. Publications:

1. Elamaran Anjukam, Manickam Ramesh, **Arumugam Rajalakshmi**, Kuppuswamy Kavitha, Mani Prakash, Gopal Suresh, Rengarajulu Puvanakrishnan, Balasubramanian Ramesh (2023) Molecular characterization of potent antibacterial compound 4-(3-methylazetididin-1-yl)pentan-2-ol from *Calophyllum inophyllum* seed oil. Biocatalysis and Agricultural Biotechnology. 4:102617. <https://doi.org/10.1016/j.bcab.2023.102617> [Cite Score: 8.4]
2. Manickam Ramesh, Kuppuswamy Kavitha, **Arumugam Rajalakshmi**, Elamaran Anjukam, Vadivel Prabakaran, Mani Prakash, Rengarajulu Puvanakrishnan, Balasubramanian Ramesh (2022) 4a-methyl-dodecahydro-1H-pyrrolo[3,4-b]quinoline-6-one produced by endophytic fungi *Aspergillus niger* E12 obtained from *Dodonaea viscosa* plant leaves as a novel antibacterial compound. Applied Biochemistry and Biotechnology. 194 (11): 5132-5150. <https://doi.org/10.1007/s12010-022-03988-4> [Impact Factor: 3.094]
3. **Arumugam Rajalakshmi**, Elamaran Anjukam, Manickam Ramesh, Kuppuswamy Kavitha, Rengarajulu Puvanakrishnan, Balasubramanian Ramesh (2022) A novel colorimetric technique for estimating iron in magnetosomes of magnetotactic bacteria based on linear regression. Archives of Microbiology. 204:282. <https://doi.org/10.1007/s00203-022-02901-1>. [Impact Factor: 2.667]
4. **Arumugam Rajalakshmi**, Manickam Ramesh, Ellappan Divya, Kuppuswamy Kavitha, Rengarajulu Puvanakrishnan, Balasubramanian Ramesh (2021) Production and

characterization of naturally occurring antibacterial magnetite nanoparticles from magnetotactic *Bacillus* sp. MTB17. *Journal of Applied Microbiology*. 132(4): 2683-2693. <https://doi.org/10.1111/jam.15395> [Impact Factor: 4.059]

5. Arunagirinathan Koodalingam, **Arumugam Rajalakshmi**, Ezhumalai Parthiban (2021) Cytotoxicity and anti-inflammatory effects of polyherbal formulations, Joint Pain Spl and Rimalaya Forte on lipopolysaccharide induced inflammation in IC-21 macrophages. *Anti-Inflammatory & Anti-Allergy Agents in Medicinal Chemistry*. 20(3):290-301. <https://doi.org/10.2174/1871523019999210104203252>. [Impact Factor: 2.065]
6. Koodalingam A, Deepalakshmi R, Ammu M, **Rajalakshmi A** (2014) Effects of NeemAzal on marker enzymes and hemocyte phagocytic activity of larvae and pupae of the vector mosquito *Aedes aegypti*. *Journal of Asia-Pacific Entomology*. 17(2):175–181. <https://doi.org/10.1016/j.aspen.2013.12.007>. [Impact Factor: 1.580]
7. Koodalingam A, Mullainadhan P, **Rajalakshmi A**, Deepalakshmi R, Ammu M (2012) Effect of a Bt-based product (Vectobar) on esterases and phosphatases from larvae of the mosquito *Aedes aegypti*. *Pesticide Biochemistry and Physiology*. 104(3):267-272. <https://doi.org/10.1016/j.pestbp.2012.09.008>. [Impact Factor: 4.966]

13. Awards / Distinction:

| S.No. | Name of the Award | Venue | Period |
|-------|--|--|-----------------------------|
| 1. | Research Fellowship for Research Scholars (RFRS) | Tamil Nadu State Council for Science and Technology (TNSCST) | March, 2020- March, 2022 |
| 2. | NPTEL Domain Star in Computational Biology | NPTEL | October, 2022 |
| 3. | NPTEL Discipline Star | NPTEL | Jan-Apr, 2022 |
| 4. | Summer Research Fellowship | Indian Academy of Sciences (IASC-INSA- | May-July, 2012 |

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| | | NASI) at L V Prasad Eye Institute, Hyderabad | |
| 5. | University Rank III | University of Madras | 2013 |
| 6. | university Rank IV | University of Madras | 2011 |
| 7. | P. Neelakanta Iyer Proficiency Prize | Sri Sankara Arts & Science College (B.Sc., Biotechnology) | 2011 |

14. Membership in Professional Bodies:

- Member, Research and Development Council, Sri Sankara Arts and Science College (Autonomous), Enathur, Kanchipuram.

15. Seminars Conferences organized /Presented/Participated:

| S. No | Name of the Program | Place | Organized/ Presented/ Participated/ | Period |
|-------|--|--|-------------------------------------|---|
| 1 | Two Day National Conference on "Biotechnology for Sustainable Agriculture and Healthcare (NCBSAH-2023) | School of Biotechnology, Madurai Kamaraj University, Madurai | Presented | 23 rd -24 th March, 2023 |
| 2 | International conference on "Research, Innovations and Entrepreneurial Venues - An Outlook" (ICAB - 2022) | PG Department of Biotechnology, Dwaraka Doss Goverdhan Doss Vaishnav college (Autonomous), Chennai | Participated | 19th-20th October, 2022 |
| 3 | International Conference on Pharmaceuticals & Novel Drug Discovery | Sathyabama Institute of Science and Technology, Chennai | Presented | 21 st -23 rd April, 2022 |
| 4 | National e-Conference on Bioprospecting of Marine derived metabolites for promising biotechnology applications: Current and future prospects (BMDM-2021) | Sathyabama Institute of Science and Technology, Chennai | Presented | 29 th -31 st December, 2021 |
| 5 | National Conference on Applications of | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Participated | 11 th -12 th October, 2018 |

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| | Computational Biology in Omics (ACBO-18) | | | |
| 6 | National seminar on Emerging trends in Microbial Biotechnology (DBT sponsored) | Kanchi Shri Krishna College of Arts & Science, Kanchipuram | Presented | 20 th -21 st February, 2013 |
| 7 | Novel Innovations in Nanotechnology (Techblast-2012) | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Presented | 15 th -16 th February, 2012 |
| 8 | National Seminar on Frontiers in Life Science | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Presented and won I prize | 11 th January, 2012 |
| 9 | National Seminar on Enzymes and Bio catalysis, The Versatile Actors: Current Trends and Future Perspectives (NSEB 2012) | Periyar University, Salem | Presented | 5 th -6 th January, 2012 |
| 10 | National seminar on recent advances in Microbial Biotechnology | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Participated | 6 th December, 2011 |
| 11 | National conference on recent scenario in biological innovations | Hindustan college of Arts & Science, Coimbatore | Presented | 3 rd -4 th February, 2011 |
| 12 | Nanotechnology (Techblast-2011) | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Presented and won II prize | 27 th January, 2011 |
| 13 | One day seminar on Nanobiotechnology | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Presented and won III prize | 18 th August, 2010 |

16. Participated as Resource Person:

Nil

17. Workshop & Training Programmes:

| S. No | Name of the Workshop | Place | Organized/ Participated | Period |
|-------|---|--|-------------------------|---|
| 1 | National Science Academies Lecture Workshop on Biotechnology- Principles and Practice [Sponsored and supported by Indian Academy of Sciences (IASc)-Bengaluru, Indian National | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Organizing Committee | 10 th -11 th August, 2022 |

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| | Science Academy (INSA)-New Delhi, The National Academy of Sciences, India (NASI)-Prayagraj] | | | |
| 2 | National Level Virtual workshop on “Molecular Modelling and Docking (NWMMD-2022) | Dwaraka Doss Goverdhan Doss Vaishnav College, Chennai | Participated | 7 th -8 th January, 2022 |
| 3 | Training programme on Creation of Scientific Awareness (CSA-19) for farmers, self-help groups and students [Catalyzed and supported by Tamilnadu State Council for Science and Technology (TNSCST), Chennai] | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Participated | 13 th -15 th February, 2019 |
| 4 | Workshop and Hands-on training on Stem Cell Research and Techniques by Labmate Asia Pvt. Ltd, Chennai | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Participated | 14 th December, 2018 |
| 5 | Workshop on Microscopy and Photomicrography | D.G.Vaishnav College, Chennai | Participated | 27 th September, 2011 |
| 6 | Inter departmental model presentation on Self-employment for Biotechnologist | Sri Sankara Arts and Science College, Enathur, Kanchipuram | Participated | 14 th October, 2010 |

18. Projects completed

| S.No. | Title | Funding Body | Amount |
|-------|---|--|-------------|
| 1. | Isolation and characterization of magnetosomes from anti-corrosive magnetotactic bacteria | Tamilnadu State Council for Science and Technology | Rs.3,00,000 |

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| | | (TNSCST), Chennai (RFRS-2019-20) | |
| 2. | Cloning of PAX6 promoter into the lentiviral vector pHR-SIN | Indian Academy of Sciences (IASC- INSA-NASI) at L V Prasad Eye Institute, Hyderabad (Summer Research Fellowship) | Rs.14000 |

19. Students Project Guided:

- Virtual screening for novel antifungal compound from plant source against lanosterol 14 α demethylase and *in vitro* confirmation studies (Catalyzed and supported by Tamilnadu State Council for Science and Technology (TNSCST), Chennai) – M.Sc., project, 6 months
- Virtual screening of novel anti-bacterial compound against bacterial DNA gyrase from plant source and it's *in vitro* confirmation studies - M.Sc., project, 6 months
- Virtual screening for novel anti-larval compound from green sources against acetylcholinesterase of mosquito and *in-vitro* confirmation studies (Catalyzed and supported by Tamilnadu State Council for Science and Technology (TNSCST), Chennai) – M.Sc., project, 6 months

20. Patents

Provisional patent Number **202141057967** Dt. 13/12/2021: Use of Magnetotactic Bacteria as an Anti-Corrosive Agent – Dr. B.Ramesh and Mrs.A.Rajalakshmi.

21. Any other Details:

| | |
|-----------------------|---|
| ORCID ID | https://orcid.org/0000-0003-2216-3153 |
| SCOPUS ID | 57195352135 https://www.scopus.com/authid/detail.uri?authorId=57195352135 |
| GOOGLE SCHOLAR | https://scholar.google.com/citations?user=WWZZpBOAAAAJ&hl=en&oi=ao |
| VIDWAN | 319297 |

GenBank Submissions:

Accession Numbers: OP326100, OP326101, OP326102, OP326104, OP326105, OP3415414, OP473944, OP566862

Certificate courses completed

| S.No. | Course Name | Venue | Year | Percentage |
|--------------|--|--|-------------|-------------------|
| 1. | Advanced Diploma in Bioinformatics (ADBI) | Sri Sankara Arts and Science College, Enathur, Kanchipuram | 2011 | 93% |
| 2. | Aptech Certified Computer Professional (Web Development) | APTECH, Kanchipuram | 2010 | 'A' grade |
| 3. | Diploma in Computer Applications (DCA) | CSC, Kanchipuram | 2008 | 'A' grade |

NPTEL certificate courses completed

| S.No | Course | Year | Percentage |
|-------------|---|---------------|-------------------|
| 1. | Introduction to Proteogenomics | Jul-Oct, 2022 | 69% |
| 2. | Data Analysis for Biologists | Feb-Apr, 2022 | 70% |
| 3. | Bioinformatics: Algorithms and Applications | Jan-Apr, 2022 | 63% |
| 4. | Introduction to Dynamical Models in Biology | Aug-Sep, 2021 | 50% |

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| 5. | Programming, Data Structures and Algorithms using Python | Jul-Sep, 2021 | 65% |
| 6. | Functional Genomics | Sep-Oct, 2020 | 93% |
| 7. | Experimental Biotechnology | Sep-Dec, 2020 | 79% |
| 8. | Introduction to R Software | Sep-Nov, 2020 | 81% |
| 9. | Introductory Mathematical Methods for Biologists | Feb-Apr, 2019 | 80% |
| 10. | Biostatistics and design of experiments | Aug-Oct, 2018 | 58% |
| 11. | Computer Aided Drug Design | Aug-Sep, 2018 | 69% |