



Dr. S. SEKAR
Professor

Contact

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Academic Qualifications: M.A./M.Sc./M.Phil./Ph.D./

DEGREE	INSTITUTION	SUBJECT	YEAR
Ph. D.	Dept. of Botany Bharathidasan University Tiruchirappalli – 620 024	Botany	1993
M. Phil.	Dept. of Botany Bharathidasan University Tiruchirappalli – 620 024	Botany	1987
M.Sc.	Saraswathi Narayanan College Madurai Kamaraj University Madurai – 625 022	Botany	1985

Teaching Experience:

27 years

Research Experience:

27 years

Additional Responsibilities

Professor and Chair, School of Biotechnology and Genetic Engineering, Bharathidasan University, Trichy.

Areas of Research

Broad Area: Microbial Biotechnology

Specific Areas:

- Microbial traditional knowledge: Ayurvedic fermentations – Microbiome and Fermenters
- Probiotics from Non-conventional sources
- PGPR of Herbal plants
- Microbial Consortia and their development
- Microbial Bioprospection
- Patent analysis and IPR policies with special reference to Microbes
- Poultry waste utilization - Compost microbiome, Feather Keratinolytic Bacteria
- Cyanobacterial storage biopolymers - PHB, phycobiliproteins

[Database on Microbial Traditional Knowledge of India](#)

Research Supervision / Guidance

Program of Study		Completed	Ongoing
Research	Ph.D.	08	-
	M.Phil.	09	-
Project	PG	20	-
	UG / Others	-	-

Publications

International		National		Others
Journals	Conferences	Journals	Conferences	Books / Chapters / Monographs / Manuals
33	10	7	7	05

Cumulative Impact Factor (as per JCR) : 69.291

h-index

: Scopus - 09; Google Scholar - 14

i10 index

: Google Scholar -17

Total Citations

: Scopus - 669; Google Scholar -1292

Funded Research Projects

Completed Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	Ministry of Human Resource Development, Govt. of India	January 2005	November 2009	Exploring Traditional Knowledge on the Use of Microorganisms by Rural Folk for IPR Protection	8.90
2	Department of Science and Technology, Govt. of India	July 2005	June 2008	Characterization of Cyanobacterial Phycobiliproteins for Potential Applications	13.04
3	University Grants Commission, Govt. of India	May 2006	April 2009	Bioconversion of Poultry Farm Waste into Value Added Manure	6.05

Ongoing Projects - Nil

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		

Consultancy Projects - Nil

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		

Others

Note: Budget must be rounded to two decimal places

Patents

Nil

Distinctive Achievements / Awards

Awarded with BOLT (Broad-Outlook-Learner Teacher) Award in 2004 instituted by Air India, The Hindu and Dinamalar with Singapore Tourism Board

Events organized in leading roles

Number of Seminars / Conferences / Workshops / Events organized:

1. National Seminar on “Intellectual Property Rights - Present Necessities and Responsibilities” on 9th December 2002. Financial support of Rs.1.60 lakhs by the Ministry of Human Resource Department, Government of India.

Events Participated (optional)

Conferences / Seminars / Workshops: 17

International

1. Validity of SCAR primers for identifying *Phyllanthus amarus*. Schum. And Thonn. International conference on Genomic Sciences, School of Biological Sciences, 12 – 14 November, 2010. Maduarai Kamaraj Universty, Madurai.
2. RAPD-PCR to assess genetic relatedness among *Phyllanthus* Schum. And Thonn. collected from Tiruchirappalli district. International conference on Genomic Sciences, School of Biological Sciences, 12 – 14 November, 2010. Maduarai Kamaraj Universty, Madurai.
3. Fermented Herbal Medicines of Ayurveda, *Arishtas* and *Asavas* – *Status Quo* analysis. “Phytocongress – 2010” International Conference on Herbs and Herbo Mineral Formulations. 6th and 7th February 2010. Centre for Advanced Research in Indian System of Medicine (CARISM), SASTRA University, Thanjavur – 613 401.
4. Biochemical Characterization of Fermented Polyherbal Ayurvedic Preparation, *Balarishta*. “Phytocongress – 2010” International Conference on Herbs and Herbo Mineral Formulations. 6th and 7th February 2010. Centre for Advanced Research in Indian System of Medicine (CARISM), SASTRA University, Thanjavur – 613 401.
5. Accumulation of Poultry Farm Excreta – A Cause of Pollution. International symposium on Microbial Biotechnology: Diversity, Genomics and Metagenomics 49th Annual Conference of Association of Microbiologists of India, November 18-20, 2008. University of Delhi, Delhi. India.

6. Microalgal and Cyanobacterial Culture Collections – Status quo and Strategies for Transformation into Biological Resource Centers. ICC-10 Tenth International Congress for Culture Collections. 10-15 October, 2004. Tsukuba, Japan.
7. A method of mass cultivation of the marine cyanobacterium *Phormidium valderianum* BDU 30501 for the production of blue natural colourant. International symposium on "Cyanobacterial Biotechnology", National Facility for Marine Cyanobacteria, Bharathidasan University, Tiruchirappalli, India. September 18 - 21, 1996.
8. Marine cyanobacterial flora of South and middle Andaman islands. International symposium on "Cyanobacterial Biotechnology", National Facility for Marine Cyanobacteria, Bharathidasan University, Tiruchirappalli, India. September 18 - 21, 1996.
9. Phosphate solubilization by the marine cyanobacterium *Phormidium valderianum* BDU 30501. Micon International`94. Defence Food Research Laboratory, Mysore. India. November 9-12, 1994.
10. Biotechnological potentials of the marine cyanobacterium *Phormidium valderianum*. Second Asia - Pacific Conference on Algal Biotechnology. National University of Singapore, Singapore. April 25-27, 1994.

National

1. Traditional knowledge on the usage of microorganisms for food, feed, beverages and medicines in India. National Conference on Traditional Knowledge Systems, Intellectual Property Rights and their Relevance for Sustainable Development, 24-26 November 2008, National Institute of Science Communication And Information Resources (NISCAIR), New Delhi.
2. Biotransformation of Ferulic acid, a Lignin Monomer by the Marine *Phormidium valderianum* BDU 20041. 44th Annual conference of the Association of Microbiologists of India. November 12-14, 2003. University of Agricultural Sciences, Dharwad, Karnataka.
3. The influence of nitrogen sources on the primary metabolic processes of *Nostoc* sp. BDU-3. 33rd Annual conference of the Association of Microbiologists of India. November, 5-7, 1993. Goa University, Goa.
4. Organophosphorus pesticides as phosphorus source for cyanobacteria. 32nd Annual conference of the Association of Microbiologists of India. January, 10-12, 1992. Madurai Kamaraj University, Madurai.
5. Characterization of *Trichodesmium erythraeum* from the southern east coast of India. XXXI Annual Conference of the Association of Microbiologists of India, January, 23-25, 1991, Tamil Nadu Agricultural University, Coimbatore.
6. Influence of phosphorus starvation and an organophosphorus pesticide on the nitrogen fixing cyanobacterium *Nostoc* sp. BDU-1. Eleventh All India Botanical Conference, January 2-4, 1989. Bharathidasan University, Tiruchirappalli.

7. Survey of cyanobacterial flora in the southern east coast of India. Second All India Applied Phycological Congress, October 16-17, 1987. Maitreyi College, New Delhi.

Other Training Programs

1. NATP sponsored Training Programme on “Biofertilizer Technology” at the Division of Microbiology, Indian Agricultural Research Institute, New Delhi, September 15-29, 2003.
2. UGC sponsored Refresher course on “Integrated Bioreactions – Bioseparation processes”. Department of Chemical Engineering, Jadavpur University, Kolkata – 700 032 from 10th December 2001 to 1st January 2002.
3. UGC sponsored Refresher course in Biotechnology. 04.02.2000 to 24.02.2000. Academic Staff College & Department of Biotechnology, Pondicherry University, Pondicherry.
4. UGC sponsored Orientation course. August 25, 1999 to September 21, 1999. Academic Staff College, Bharathidasan University, Tiruchirappalli.
5. DBT sponsored training course on ‘Gene cloning in *Streptomyces*’. May 29 - June 13, 1989. Genetic Engineering Research Unit, School of Biological Sciences, Madurai Kamaraj University, Madurai.

Overseas Exposure / Visits

1. Japan during October 2004 to attend the Tenth International Congress on Culture Collections with a funding support of JPY 1,50,000 by the Institute of Fermentation, Osaka, Japan.

Membership in

Professional Bodies

1. Life Member: Association of Microbiologists of India
2. Life Member: Sea Weed Research & Utilization Association
3. Life Member: Indian Poultry Science Association

Editorial Board

1. Plant Cell Biotechnology and Molecular Biology

Advisory Board

Academic Bodies (such as Board of Studies etc.,)

1. Dept. of Biotechnology, Bharathidasan University, Trichy
2. Dept. of Biotechnology, A.V.C. College, Mayiladuthurai
3. Dept. of Biotechnology, National College, Trichy

Others

Acted as a Reviewer for the Journals

- Applied Biochemistry and Biotechnology
- International Journal of Biological Macromolecules
- Journal of Herbal Medicine
- Journal of Applied Phycology
- Indian Journal of Microbiology
- Indian Journal of Traditional Knowledge
- Journal of Intellectual Property Rights

Resource persons in various capacities

Number of Invited / Special Lectures delivered: 04

Others

1. Articles published in Newspapers / Magazines : Nil
2. Products developed : Nil
3. No. of PhD Thesis evaluated : 10
4. No. of PhD Public Viva Voce Examination conducted : 04
5. Sequences submitted in GenBank - 44

**Social Interests and Initiatives / Articles in News papers etc can also be included

Recent Publications

1. Annadurai Vinothkanna, Krishnamurthy Mathivanan, Sivapunniyam Ananth, Yongkun Ma and **Soundarapandian Sekar** (2022). Biosynthesis of copper oxide nanoparticles using *Rubia cordifolia* bark extract: Characterization, antibacterial, antioxidant, larvicidal and photocatalytic activities. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-022-18996-4>.
ISSN: 1614-7499; Impact Factor: 4.223.
2. Annadurai Vinothkanna, Ganesan Sathiyarayanan, Amit Kumar Rai, Krishnamurthy Mathivanan, Kandasamy Saravanan, Kumaresan Sudharsan, Palanisamy Kalimuthu, Yongkun Ma and **Soundarapandian Sekar** (2022). Exopolysaccharide produced by probiotic *Bacillus albus* DM-15 isolated from Ayurvedic fermented *Dasamoolarishta*:

Characterization, antioxidant and anticancer activities. *Frontiers in Microbiology*. doi: 10.3389/fmicb.2022.832109.

ISSN: 1664-302X; Impact Factor: 5.640.

3. Annadurai Vinothkanna, Ganesan Sathiyarayanan, Perumalsamy Balaji, Krishnamurthy Mathivanan, Arivalagan Pugazhendhi, Yongkun Ma, **Soundarapandian Sekar** and Ramasamy Thirumurugan (2021). Structural characterization, functional and biological activities of an exopolysaccharide produced by probiotic *Bacillus licheniformis* AG-06 from Indian polyherbal fermented traditional medicine. *International Journal of Biological Macromolecules*. 174, 144-152.
ISSN: 0141-8130; Impact Factor: 6.953.
4. Bharathi, S., Dinesh Kumar, S., **Sekar, S.**, Santhanam, P., Divya, M., Krishnaveni, N., ... and Dhanalakshmi, B. (2021). Experimental evaluation of seaweeds liquid extracts as an alternative culture medium on the growth and proximate composition of *picochlorum maculatum*. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences*, 91(1), 205-215.
ISSN: 2250-1746; Scopus Indexed.
5. Keerthana, S., **Sekar, S.**, Kumar, S. D., Santhanam, P., Divya, M., Krishnaveni, N., ... and Kim, M. K. (2020). *Scenedesmus peccensis* cultivation in rice mill effluent using commercial scale nutrient sources. *Bioresource Technology Reports*, 9, 100379.
ISSN: 2589-014X; Scopus Indexed.
6. Selvamani, Karthikeyan, Annadurai Vinothkanna, and **Soundarapandian Sekar** (2019). Improved co-composting of poultry manure with a complementary consortium of indigenous *Bacillus* spp. *3 Biotech*, 9: 215.
ISSN: 2190-5738; Impact Factor: 2.406.
7. Annadurai Vinothkanna, and **Soundarapandian Sekar** (2019). Probiotic properties of intrinsic bacteria isolated from fermented polyherbal preparations of Indian Ayurveda. *LWT- Food Science and Technology*, 103, 8-18.
ISSN: 0023-6438; Impact Factor: 4.952
8. **Soundarapandian Sekar**, and Annadurai Vinothkanna (2019). Polyherbal and submerge fermented medicines of Ayurveda: Convergence of tradition with scientific trends and needs. *South African Journal of Botany*, 21, 410-417.
ISSN: 0254-6299; Impact Factor: 2.315.
9. Annadurai Vinothkanna, Palanisamy Premkumar, and **Soundarapandian Sekar** (2019).

Activity of antibacterial compounds from *Bacillus subtilis* against cellular oncoproteins by *in silico* approach. ***Biocatalysis and Agricultural Biotechnology***, 18, 101059.

ISSN: 1878-8181; Emerging Sources Citation Index, Scopus & Web of Science Indexed, Elsevier.

10. Annadurai Vinothkanna and **Soundarapandian Sekar** (2018). Influence of intrinsic microbes on phytochemical changes and antioxidant activity of the Ayurvedic fermented medicines: *Balarishta* and *Chandanasava*. ***AYU (An International Quarterly Journal of Research in Ayurveda)***, 39 (3), 169-181.

ISSN – 0976-9382; PubMed indexed.

11. Annadurai Vinothkanna, Bagavathy Shanmugam Karthikeyan., Ramachandran Vijayan and **Soundarapandian Sekar** (2018). Assessment of anti-arthritis potential of traditionally fermented ayurvedic polyherbal product chandanasava by molecular modeling, docking and dynamics approaches. ***International Journal of Computational Biology and Drug Design***, 11(4), 346-368.

ISSN: 1756-0764; Scopus indexed.

Annadurai Vinothkanna and **Soundarapandian Sekar** (2018). Antioxidant Activity of Fermented Traditional Medicines of Indian Ayurveda – *Ashokarishta*, *Aswagandharishta* and *Dasamoolarishta*. ***Biosciences Biotechnology Research Asia***, 15(3), 699-709.

ISSN: 2456-2602; Web of Science indexed.

12. Gothandapani Sellamuthu, **Soundarapandian Sekar**, and Jasdeep C. Padaria. (2017). Azotobacter chroococcum: Utilization and potential use for agricultural crop production: An overview. ***International Journal of Advanced Research in Biological Sciences***, 4(3), 35-42.

ISSN: 2348-8069; Impact factor: Nil

13. Ilayaperumal Pradeep, Balagurusamy Balajothi, Sankaralingam Arunachalam, Rajakumar Dhivya, Annadurai Vinothkanna, Mohammad Abdulkadher Akbarsha and **Soundarapandian Sekar** (2016). Fluorescent active ruthenium (II) complex units containing bpy or phen or dmp ligands anchored on branched poly (ethylenimine): DNA binding and in vitro biological assessment. ***RSC Advances***, 6(38), 31831-31839.

ISSN: 2046-2069; Impact Factor: 3.361.

14. Kandavel Dhandayuthapani and **Soundarapandian Sekar** (2015). Endophytic fungi from *Phyllanthus amarus* Schum. & Thonn. capable of producing phyllanthin,

hypophyllanthin and/or related compounds. *International Journal of Pharmacy and Pharmaceutical Sciences*, 07: 253-257

ISSN: 0975-1491; Impact factor: 0.51 (Scopus Indexed)

15. Kandavel Dhandayuthapani and **Soundarapandian Sekar** (2015). Impact of certain biotic and abiotic factors on phyllanthin and hypophyllanthin content of *Phyllanthus amarus* Schum. & Thonn. from three different habitats. *International Journal of Pharmacy and Pharmaceutical Sciences*, 07: 258-265.

ISSN: 0975-1491; Impact factor: 0.51 (Scopus Indexed)

16. Kandavel Dhandayuthapani and **Soundarapandian Sekar** (2015). Narrowing study areas for Phytosociological research using *Phyllanthus amarus* Schum. and Thonn. as a model target plant. *International Journal of Environmental Sciences*, 05: 904-909.

ISSN 0976 – 4402. Impact factor: Nil

17. Annadurai Vinothkanna, Paramasivam Manivannan, Gangatharan Muralitharan and **Soundarapandian Sekar** (2014). *In silico* probing of anti-arthritic potential of traditionally fermented Ayurvedic polyherbal product *Balarishta* reveals lupeol and desulphosinigrin as efficient interacting components with UreC. *International Journal of Pharmacy and Pharmaceutical Sciences*, 6, 469-475.

ISSN: 0975-1491; Impact Factor: 0.512 (Scopus Indexed).

18. Annadurai Vinothkanna, Subbiah Mariappan, and **Soundarapandian Sekar** (2014). Tracking the organoleptic and biochemical changes in the ayurvedic polyherbal and native fermented traditional medicines: *Balarishta* and *Chandanasava*. *International Journal of Pharmacy and Pharmaceutical Sciences*, 6(9) (2014): 521-26,

ISSN: 0975-1491; Impact Factor: 0.512 (Scopus Indexed).

19. Ilayaperumal Pradeep, Megarajan, S, Sankaralingam Arunachalam, Rajakumar Dhivya, Annadurai Vinothkanna, Mohammad Abdulkadher Akbarsha and **Soundarapandian Sekar** (2014). Ferrocenyl methylene units and copper (ii) phenanthroline complex units anchored on branched poly (ethyleneimine)–DNA binding, antimicrobial and anticancer activity. *New Journal of Chemistry*, 38(9) 4204-4211.

ISSN: 1369-9261; Impact Factor: 3.591.

Book Chapters

20. Annadurai Vinothkanna and **Soundarapandian Sekar** (2020) Diagnostic Applications of Phycobiliproteins. In: Jacob-Lopes E., Queiroz M., Zepka L. (eds) Pigments from Microalgae Handbook. Springer, Cham. https://doi.org/10.1007/978-3-030-50971-2_24. ISBN 978-3-030-50970-5.
21. **Soundarapandian Sekar** and Kandavel Dhandayuthapani (2019). Patenting of Microorganisms. *Encyclopedia of Microbiology* (Fourth Edition), *Reference Module in Life Sciences*, Elsevier. The Netherlands, pp 426-442. <https://doi.org/10.1016/B978-0-12-809633-8.13086-9>. ISBN: 978-0-12-809633-8.
22. **Soundarapandian Sekar** and Kandavel Dhandayuthapani (2009). Patenting of Living Organisms and Natural Products *Encyclopedia of Microbiology* (Third Edition), Elsevier. The Netherlands, pp 35-51. ISBN-13: 978-0123739391.