




Bharathiar University

State University | "A⁺⁺" Grade by NAAC | 46th Rank in MoE-NIRF
Maruthamalai Road, Coimbatore, Tamil Nadu - 641 046.

Prof R. SATHISHKUMAR Professor Department of Biotechnology Bharathiar University Coimbatore, 641014 Tamil Nadu E-mail: rsathish@buc.edu.in Phone: 9360151669 Office Number: 0422-2428299	
Research Area <ul style="list-style-type: none">• Plant Metabolic Engineering• Plant Molecular Farming• Plant DNA Barcoding• CRISPR-Cas Mediated Genome Editing and Molecular Diagnostics• Phytomicrobiome-Mediated Metabolite Augmentation in Medicinal Plants	Courses Teaching <ul style="list-style-type: none">• OMICS Concepts and Data Integration• Bioinformatics and Systems Biology
Research Experience: 25	Teaching Experience: 20
Research Credentials (as on November 2025 – Source: Google scholar) H-index: 36 Citations: 4439 i10-index: 105	
Patents : Granted: 2	
Publications International Journals: 132 National Journals: 5 Conferences: 10 Books/Chapters: 33 Publication Database: 3	
Career Other Institutes 1. Designation : Post Doctoral Fellow Institution Name : The University of Hong Kong, Hong Kong Period : February 1999 - April 2005 At Bharathiar University 1. Designation : Professor and Head Period : January 2021 - Till Date 2. Designation : Professor Period : April 2018 - January 2021 3. Designation : Associate Professor Period : April 2015 - April 2018 4. Designation : Assistant Professor Period : April 2005 - April 2015	
Education Ph. D. Subject : Botany Institution : Madurai Kamaraj University, Madurai, India Affiliated University : Madurai Kamaraj University Year of Award : August 1998	



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Prof R. SATHISHKUMAR , Professor , Department of Biotechnology

M. Phil.

Subject : Botany
Institution : Pondicherry University, Pondicherry, India
Affiliated University : Pondicherry University
Year of Award : November 1991

M. Sc.

Subject : Botany
Institution : Madras Christian College, Chennai, India
Affiliated University : University of Madras
Year of Award : May 1990

B. Sc.

Subject : Botany
Institution : Loyola College, Chennai, India
Affiliated University : University of Madras
Year of Award : April 1988

Projects

National Level

Ongoing - 4 completed - 15

International Level

Ongoing - completed - 6

Research Guidance

On Going

Ph.D. - 8

Completed

Ph.D. - 21 M.Phil. - 21 Post-Doc - 7

Consultancy Responsibilities

Ongoing - completed - 12

Internal Expert - Professor

Period :Jan 2019 to Till date
Nature of Responsibility :Intellectual Property Rights (IPR) Cell, Bharathiar University.

Local Coordinator - Professor

Period :Jan 2017 - Dec 2020
Nature of Responsibility :GIAN Courses, Bharathiar University.

Coordinator - Professor

Period :Jan 2016 - Dec 2022
Nature of Responsibility :DST-PURSE Phase II, Bharathiar University.

Member Secretary - Professor

Period :Jan 2010 to Till date
Nature of Responsibility :Institutional Biosafety Committee (IBSC), Bharathiar University.

Program Coordinator - Professor

Period :Jan 2020 to Till date
Nature of Responsibility :DBT-sponsored "M.Sc. Medical Biotechnology".

Vice Chairman - Professor

Period :Jan 2020 to Till date
Nature of Responsibility :Institutional Human Ethics Committee (BUHEC), Bharathiar University.

Coordinator - Professor

Period :Jan 2025 to Till date
Nature of Responsibility :University Research Park, Bharathiar University, Coimbatore.



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Prof R. SATHISHKUMAR , Professor , Department of Biotechnology

Visits

1. Academic Visitor - London, United Kingdom (2008-08-31 - 2008-08-12)
2. Invited Speaker - Mexico (2009-11-07 - 2009-11-13)
3. Invited Speaker - China (2013-11-07 - 2013-11-13)
4. Invited Speaker - Hong Kong (2018-12-02 - 2018-12-05)
5. Invited Speaker - Italy (2022-09-26 - 2022-09-28)
6. Academic Leader Program - Mexico (2018-09-21 - 2018-09-30)

Collaborations

1. CRISPR-Cas12a-Based Molecular Diagnostics. (The Hopkirk Research Institute, AgResearch, New Zealand) (2025-08-31 - 2024-05-01)
2. Endophyte-Mediated Enhancement of High Value Secondary Metabolites from Plants (The Hopkirk Research Institute, AgResearch, New Zealand) (2025-08-31 - 2024-05-01)
3. Plant Metabolic Engineering (Indian Institute of Technology Roorkee (IIT Roorkee) Roorkee, Uttarakhand, India) (2025-09-03 - 2020-01-01)
4. Plant Metabolic Engineering (University of Evora, Evora, Portugal) (2017-12-19 - 2014-01-01)
5. Plant Molecular Framing (St. George's University of London, London) (2025-09-03 - 2007-01-01)
6. Plant DNA Barcoding (University of Guelph, Guelph, Canada) (2025-09-03 - 2010-01-31)
7. Endophyte-Mediated Enhancement of High Value Secondary Metabolites from Plants. (North-West University, South Africa) (2024-05-01 - 2025-09-03)
8. Plant Metabolic Engineering and Endophyte-Mediated Metabolite Augmentation in *Salvia officinalis* (Volcani Institute, Israel) (2023-06-15 - 2025-09-15)

Programs organized

1. Organizing Secretary [Sponsored by Bharathiar University] (2011-03-22 -)
2. Organizing Secretary [Sponsored by Bharathiar University] (2011-01-17 -)
3. Organizing Secretary [Sponsored by UK-India Education and Research Initiative (UKIERI)] (2014-03-19 -)
4. Organizing Secretary [Sponsored by UK-India Education and Research Initiative (UKIERI)] (2013-09-11 -)
5. Organizing Secretary [Sponsored by UK-India Education and Research Initiative (UKIERI)] (2011-09-20 -)
6. Organizing Secretary [Sponsored by UK-India Education and Research Initiative (UKIERI)] (2011-04-20 -)
7. Organizing Secretary [Sponsored by UK-India Education and Research Initiative (UKIERI)] (2019-10-04 -)
8. Organizing Secretary [Sponsored by Bharathiar University] (2017-12-17 -)
9. Organizing Secretary [Sponsored by Bharathiar University] (2017-09-20 -)
10. Organizing Secretary [Sponsored by UK-India Education and Research Initiative (UKIERI)] (2016-07-28 -)
11. Organizing Secretary [Sponsored by Academy of Sciences, Chennai] (2022-08-06 -)
12. Organizing Secretary [Sponsored by UGC-HRDC] (2020-10-21 -)
13. Organizing Secretary [Sponsored by Academy of Sciences, Chennai] (2021-08-07 -)
14. Organizing Secretary [Sponsored by UGC-HRDC] (2021-02-15 -)
15. Organizing Secretary [Sponsored by Academy of Sciences, Chennai] (2020-07-30 -)



Publications

International Journals - 132

132. Characterisation of chikungunya virus neutralising monoclonal antibodies expressed in tobacco plants

Journal of Biotechnology (October 2025)

Catherine M Moore, Mathew J Paul, Elizabeth Pinneh, Balamurugan Shanmugaraj, James Ashall, Sathishkumar Ramalingam, Roger Hewson, Michael S Diamond, Julie M Fox, Julian K-C Ma

131. Industrial applications of Phanerochaete chrysosporium lignin-degrading enzymes: current status, production challenges, and future directions

World Journal of Microbiology and Biotechnology (May 2025)

Abdul Basith Akbar Aly, Balamurugan Shanmugaraj, Sathishkumar Ramalingam

130. Unravelling the pharmacological applications and taxonomical challenges in Canscora species using DNA barcodes (taxon-specific DNA and high-throughput DNA barcodes): a systematic review

Plant Systematics and Evolution (March 2025)

Kiruba Rajamani, Al Huq, Mohammed Suhaib, Dhivya Selvaraj, Sathishkumar Ramalingam

129. SmERF6 Promotes the Expression of Terpenoid Pathway in Salvia officinalis and Improves the Production of High Value Abietane Diterpenes, Carnosol and Carnosic acid

Plant And Cell Physiology (January 2025)

Bharadwaj Revuru, Gayathri Thashanamoorathi, Prathiba Demiwal, Debabrata Sircar, Sathishkumar Ramalingam

128. In silico analysis and gene expression patterns of lignin peroxidase isozymes in Phanerochaete chrysosporium

International Journal of Biological Macromolecules (January 2025)

Abdul Basith Akbar Aly, Gayathri Thashanamoorathi, Balamurugan Shanmugaraj, Sathishkumar Ramalingam

127. Elicitation and precursor induced approaches for the enhancement of ?? tocopherol production using suspension cultures of Solanum lycopersicum

Current Plant Biology (September 2024)

Harish Mani Chandra, Balamurugan Shanmugaraj, Ashutosh Sharma, Sathishkumar Ramalingam

126. Elicitor-Mediated Enhancement of ?-Tocopherol in Cell Suspension Cultures of Nicotiana tabacum

International Journal of Plant Biology (June 2024)

Mani Chandra Harish, Shanmugaraj Balamurugan, Ramalingam Sathishkumar

125. Microbial Bacterioruberin: A Comprehensive Review

Indian Journal of Microbiology (May 2024)

Mouliraj Palanisamy, Sathishkumar, Ramalingam

124. Artificial intelligence-driven systems engineering for next-generation plant-derived biopharmaceuticals

Frontiers in Plant Science (November 2023)

Parthiban, S., Vijeesh, T., Gayathri, T., Shanmugaraj, B., Sharma, A., & Sathishkumar, R.

123. Functional role of microRNA in the regulation of biotic and abiotic stress in agronomic plants

Frontiers in Genetics (August 2023)

Samynathan, R., Venkidasamy, B., Shanmugam, A., Ramalingam, S., & Thiruvengadam, M.

122. Metabolic engineering of isoflavonoid genistein in indica rice by expressing Isoflavone Synthase from Glycine max

Plant Cell, Tissue and Organ Culture (PCTOC) (August 2023)

Nayeem, S., Sundararajan, S., Rajendran, V., Malla, A., Sharma, A., & Ramalingam, S.

121. Isolation of 5' regulatory region of COL1D1 gene and its functional characterization through transient expression analysis in tobacco and sugarcane

3 Biotech (August 2023)

Mohanam, M. V., Pushpanathan, A., Jayanarayanan, A. N., Selvarajan, D., Ramalingam, S., Govind, H., & Chinnaswamy, A.



120. Agrobacterium-mediated rapid and efficient development of transgenics using shoot apex explants in two elite Indica rice cultivars

Cereal Research Communications (August 2023)
Sundararajan, S., Nayeem, S., Sivakumar, H. P., & Ramalingam, S.

119. Plant-Based Recombinant Dengue Envelope Domain III (EDIII) Antigens for the Development of Serotype-Specific Rapid Diagnostic Kit

International Journal of Infectious Diseases (August 2023)
Parthiban S, Sathishkumar R.

118. Expression of Recombinant Envelope Domain III Protein in Prokaryotic and Eukaryotic Host System For the Diagnosis of Kyasanur Forest Disease Virus (KFDV)

International Journal of Infectious Diseases (August 2023)
Gayathri T., Sathishkumar R.

117. Adventitious roots in rice, the model cereal: genetic factors and the influence of environmental cues—a mini review

Plant Cell, Tissue and Organ Culture (PCTOC) (August 2023)
Sundararajan, S., Sivakumar, H. P., Rajendran, V., Kumariah, M., & Ramalingam, S.

116. Advancements and future prospective of DNA barcodes in the herbal drug industry

Frontiers in Pharmacology (August 2022)
Mahima, K., Sunil Kumar, K. N., Rakhesh, K. V., Rajeswaran, P. S., Sharma, A., & Sathishkumar R.

115. Vitex negundo L. derived specialized molecules unveil the multi-targeted therapeutic avenues against COPD: a systems pharmacology approach

Frontiers in Bioscience-Landmark (August 2022)
Adarshan, S., Muthuramalingam, P., Jeyasri, R., Lakshmi, M. A., Sathishkumar, R., Pandian, S. K., Shin, H., Chen, J.T. and Ramesh, M.,

114. Growth modulation by nitric oxide donor sodium nitroprusside in in vitro plant tissue cultures—A review

Biologia (August 2022)
Sundararajan, S., Rajendran, V., Sivakumar, H. P., Kumariah, M., & Ramalingam, S.

113. Exogenous supplementation with sodium nitroprusside, a nitric oxide donor, mitigates the effects of salinity in Abelmoschus esculentus L. seedlings

Horticulture, Environment, and Biotechnology (August 2022)
Sundararajan, S., Shanmugam, R., Sivakumar, H. P., & Ramalingam, S.

112. Analytical and regulatory considerations to mitigate highly hazardous toxins from environmental matrices

Journal of Hazardous Materials (August 2022)
Reyes-Calderón, A., Pérez-Urbe, S., Ramos-Delgado, A. G., Ramalingam, S., Oza, G., Parra-Saldivar, R., Ramirez-Mendoza, R.A., Iqbal, H.M. and Sharma, A., (

111. Elicitation and plant growth hormone-mediated adventitious root cultures for enhanced valepotriates accumulation in commercially important medicinal plant Valeriana jatamansi Jones

Acta Physiologiae Plantarum (August 2022)
Pandey, S., Sundararajan, S., Ramalingam, S., & Pant, B.

110. Green remediation potential of immobilized oxidoreductases to treat halo-organic pollutants persist in wastewater and soil matrices-A way forward

Chemosphere (August 2022)
Sharma, A., Vázquez, L. A. B., Hernández, E. O. M., Becerril, M. Y. M., Oza, G., Ahmed, S. S., Ramalingam, S. and Iqbal, H.M.,

109. Genome wide survey, and expression analysis of Ornithine decarboxylase gene associated with alkaloid biosynthesis in plants

Genomics (August 2022)
Sivakumar, H. P., Sundararajan, S., Rajendran, V., & Ramalingam, S.



108. Identification of microRNAs from medicinal plant *Murraya koenigii* by high-throughput sequencing and their functional implications in secondary metabolite biosynthesis

Plants (August 2021)

Gutiérrez-García, C., Ahmed, S. S., Ramalingam, S., Selvaraj, D., Srivastava, A., Paul, S., & Sharma, A.

107. Systematic reinstatement of highly sacred *Ficuskrishnae* based on differences in morphology and DNA barcoding from *Ficusbenghalensis* (Moraceae)

PhytoKeys (August 2021)

Mahima, K., Umapathy, S., Sudhakar, J. V., & Sathishkumar, R.

106. Sodium Nitroprusside and Putrescine Mitigate PEG-Induced Drought Stress in Seedlings of *Solanum lycopersicum*

Journal of Soil Science and Plant Nutrition (August 2021)

Sundararajan, S., Shanmugam, R., Rajendran, V., Sivakumar, H. P., & Ramalingam, S.

105. Identification of Major SARS CoV-2 Variants in India using in silico PCR-RFLP analysis

International Journal of Infectious Diseases (August 2021)

Parthiban S, Sathishkumar R

104. Contributions of the international plant science community to the fight against infectious diseases in humans - PART 2: Affordable drugs in edible plants for endemic and re-emerging diseases

Plant biotechnology journal (August 2021)

He W, Baysal C, Lobato Gómez M, Huang X, Alvarez D, Zhu C, Armario-Najera V, Blanco Perera A, Cerda Bennasser P, Saba-Mayoral A, Sobrino-Mengual G, Vargheese A, Abranches R, Abreu IA, Balamurugan S, Bock R, Buyel JF, Cunha NBD, Daniell H, Faller R, Folgado

103. Contributions of the international plant science community to the fight against human infectious diseases - PART 1: Epidemic and pandemic diseases

Plant biotechnology journal (August 2021)

Lobato Gómez M, Huang X, Alvarez D, He W, Baysal C, Zhu C, Armario-Najera V, Blanco Perera A, Cerda Bennasser P, Saba-Mayoral A, Sobrino-Mengual G, Vargheese A, Abranches R, Abreu IA, Balamurugan S, Bock R, Buyel JF, da Cunha NB, Daniell H, Faller R, Folg

102. Adaptive Reprogramming During Early Seed Germination Requires Temporarily Enhanced Fermentation- A Critical Role for Alternative Oxidase Regulation That Concerns Also Microbiota Effectiveness

Frontiers in plant science (August 2021)

Bharadwaj, R., Noceda, C., Mohanapriya, G., Kumar, S. R., Thiers, K. L. L., Costa, J. H., Macedo, E.S., Kumari, A., Gupta, K.J., Srivastava, S. and Adholeya, A.,

101. ROS/RNS balancing, aerobic fermentation regulation and cell cycle control—a complex early trait ('CoV-MAC-TED') for combating SARS-CoV-2-induced cell reprogramming

Frontiers in immunology (August 2021)

Kumar, R., Achra, A., Sathishkumar, R., Adholeya, A., & Arnholdt-Schmitt, B.

100. Production of Genistein in *Amaranthus tricolor* var. *tristis* and *Spinacia oleracea* by Expression of Glycine max Isoflavone Synthase

Plants (August 2021)

Malla, A., Shanmugaraj, B., Sharma, A., & Ramalingam, S.

99. Comparison of Cytokine Expression Profile in *Chikungunya* and Dengue Co-Infected and Mono-Infected Patients' Samples

Pathogens (August 2021)

Krishnan, S.M., Mahalingam, J., Sabarimurugan, S., Muthu, T., Venkidasamy, B., Krishnasamy, K., Sharma, A. and Ramalingam, S.

98. Enhanced vitamin E content in an *Indica* rice cultivar harbouring two transgenes from *Arabidopsis thaliana* involved in tocopherol biosynthesis pathway

Plant Biotechnology Journal (August 2021)

Sundararajan, S., Rajendran, V., Sivakumar, H. P., Nayeem, S., Chandra, H. M., Sharma, A., & Ramalingam, S.



97. Overexpression of Glyoxalase III gene in transgenic sugarcane confers enhanced performance under salinity stress

Journal of Plant Research (August 2021)

Mohanam, M. V., Pushpanathan, A., Padmanabhan, S., Sasikumar, T., Jayanarayanan, A. N., Selvarajan, D., Ramalingam, S., Ram, B. and Chinnaswamy, A.

96. Characterization of microRNAs from neem (Azadirachta indica) and their tissue-specific expression study in leaves and stem

3 Biotech (August 2021)

Paul, S., Reyes-Pérez, P., Angulo-Bejarano, P. I., Srivastava, A., Ramalingam, S., & Sharma, A.

95. Effects of cooking on phytochemical and antioxidant properties of pigmented and non-pigmented rare Indian rice landraces

Biocatalysis and Agricultural Biotechnology (August 2021)

Nayeem, S., Sundararajan, S., Ashok, A. K., Abusaliya, A., & Ramalingam, S.

94. Differential expression of flavonoid biosynthesis genes and biochemical composition in different tissues of pigmented and non-pigmented rice

Journal of Food Science and Technology (August 2021)

Nayeem, S., Venkidasamy, B., Sundararajan, S., Kuppuraj, S. P., & Ramalingam, S.

93. Comprehensive in silico and gene expression profiles of MnP family genes in Phanerochaete chrysosporium towards lignin biodegradation

International Biodeterioration & Biodegradation (August 2021)

Sree Preethy K, Baskar V, Dhivya S and Sathishkumar R

92. Identification of morphologically similar species of Tribulus (Zygophyllaceae) by employing DNA barcodes and rRNA secondary structures

Ecological Genetics and Genomics (August 2021)

Dhivya S and Sathishkumar R

91. Influence of exogenous polyamines on somatic embryogenesis and regeneration of fresh and long-term cultures of three elite indica rice cultivars

Cereal Research Communications (August 2021)

Sundararajan, S., Sivakumar, H. P., Nayeem, S., Rajendran, V., Subiramani, S., & Ramalingam, S.

90. Plant metabolic gene clusters: evolution, organization, and their applications in synthetic biology

Frontiers in Plant Science (August 2021)

Bharadwaj, R., Kumar, S. R., Sharma, A., & Sathishkumar, R.

89. Cloning of a Rift Valley Fever fusion gene in a plant virus derived replicon vector

World Scientific News (August 2021)

Omosimua, R. O., Iyappan, G., Obembe, O., Ogunkanmi, A., & Sathishkumar, R.

88. From plant survival under severe stress to anti-viral human defense-a perspective that calls for common efforts

Frontiers in Immunology (August 2021)

Arnholdt-Schmitt, B., Gunasekaran, M., Bharadwaj, R., Noceda, C., Macedo, E.S., Ramalingam, S., Gupta, K.J., Sircar, D., Kumar, S.R., Srivastava, S. and Adholeya, A.

87. Metabolic Engineering of Isoflavonoid Biosynthesis by Expressing Glycine max Isoflavone Synthase in Allium cepa L. for Genistein Production

Plants (August 2021)

Malla, A., Shanmugaraj, B., Srinivasan, B., Sharma, A. and Ramalingam, S.

86. Biotechnological perspectives to augment the synthesis of valuable biomolecules from microalgae by employing waste water

Journal of Water Process Engineering (August 2021)

Balamurugan, S., Sathishkumar, R., & Li, H. Y.



85. Functional motif prediction of non-structural proteins for serotype-specific differential diagnosis of dengue infection

International Journal of Infectious Diseases (August 2020)
Parthiban S and Sathishkumar R

84. Ectopic expression of DJ-1/Pfpl domain containing Erianthus arundinaceus Glyoxalase III (EaGly III) enhances drought tolerance in sugarcane

Plant Cell Reports (August 2020)
Mohanam, M.V., Pushpanathan, A., Sasikumar, S.P.T., Selvarajan, D., Jayanarayanan, A.N., Kumar, A., Ramalingam, S., Karupphasamy, S.N., Subbiah, R., Ram, B. and Chinnaswamy, A.

83. Effects of sodium nitroprusside and growth regulators on callus, multiple shoot induction and tissue browning in commercially important Valeriana jatamansi Jones

Plant Cell, Tissue and Organ Culture (PCTOC) (August 2020)
Pandey, S., Sundararajan, S., Ramalingam, S., & Pant, B.

82. Molecular mechanisms in grass-Epichloë interactions: towards endophyte driven farming to improve plant fitness and immunity

World Journal of Microbiology and Biotechnology (August 2020)
Bharadwaj, R., Jagadeesan, H., Kumar, S.R., Ramalingam, S.

81. Emerging mosquito-borne arboviral infection Zika-An epidemiological review

Asian Pacific Journal of Tropical Biomedicine (August 2020)
Malla, A., Shanmugaraj, B., & Ramalingam, S.

80. Taxonomic delimitation of endemic Ficus amplocarpa and Ficus dalhousiae Complexes (Moraceae) by DNA barcoding

Phytotaxa (August 2020)
Mahima, K., Sudhakar, J. V., & Ramalingam, S.

79. Physicochemical factors modulate regeneration and Agrobacterium-mediated genetic transformation of recalcitrant indica rice cultivars-ASD16 and IR64

Biocatalysis and Agricultural Biotechnology (August 2020)
Sundararajan, S., Rajendran, V., Nayeem, S., & Ramalingam, S.

78. Molecular identification and evolutionary relationships between the subspecies of Musa by DNA barcodes

BMC genomics (August 2020)
Dhivya, S., Ashutosh, S., Gowtham, I., Baskar, V., Harini, A.B., Mukunthakumar, S. and Sathishkumar, R.

77. Rapid clonal propagation and valepotriates accumulation in cultures of Valeriana jatamansi Jones, a high-value medicinal plant

Journal of Applied Botany and Food Quality (August 2020)
Pandey, S., Sundararajan, S., Ramalingam, S., Baniya, M. K., & Pant, B.

76. Molecular phylogeny of the Ficus virens complex (Moraceae)

Genome (August 2020)
Mahima, K., Sudhakar, J. V., & Sathishkumar, R.

75. A comparative study of phytotoxic effects of metal oxide (CuO, ZnO and NiO) nanoparticles on the in vitro grown Abelmoschus esculentus

Plant Biosystems - An International Journal Dealing with all Aspects of Plant Biology (August 2020)
Baskar V, Safia N, Sree Preethy K, S Dhivya, Muthu T and Sathishkumar R

74. Phytochemical analysis in economically important Ficus benghalensis L. and Ficus krishnae C. DC. using GC-MS

International Journal of Pharma and Bio sciences (August 2019)
Mahima K, Parthiban S and Sathishkumar R



73. Optimized in vitro micro-tuber production for colchicine biosynthesis in *Gloriosa superba* L. and its anti-microbial activity against *Candida albicans*

Plant Cell, Tissue and Organ Culture (PCTOC) (August 2019)

Subiramani, S., Sundararajan, S., Govindarajan, S., Sadasivam, V., Ganesan, P. K., Packiaraj, G., G., Manickam, V., Thiruppathi, S.K., Ramalingam, S. and Narayanasamy, J.

72. Sodium nitroprusside enhances callus induction and shoot regeneration in high value medicinal plant

Canscora diffusa

Plant Cell, Tissue and Organ Culture (PCTOC) (August 2019)

Subiramani, S., Sundararajan, S., Sivakumar, H. P., Rajendran, V., & Ramalingam, S.

71. DNA barcoding detects floral origin of Indian honey samples

Genome (August 2019)

Saravanan, M., Mohanapriya, G., Laha, R., and Sathishkumar, R.

70. Exploring DNA quantity and quality from raw materials to botanical extracts

Heliyon (August 2019)

Ragupathy, S., Faller, A. C., Shanmughanandhan, D., Kesanakurti, P., Shaanker, R. U., Ravikanth, G., G., Sathishkumar, R., Mathivanan, N., Song, J., Han, J. and Newmaster, S.

69. Indian pulses: A review on nutritional, functional and biochemical properties with future perspectives

Trends in Food Science & Technology (August 2019)

Baskar V, Dhivya S, Arti S, Sathishkumar R, Guoyin Kai, Shivraj N.

68. Optimizing culture conditions for high frequency somatic embryogenesis and plantlet conversion in

***Daucus carota* L**

Biologia (August 2019)

Sundararajan, S., Nayeem, S., Subiramani, S., Rajendran, V., & Ramalingam, S.

67. Epidemiology, clinical features and transmission of re-emerging arboviral infection chikungunya

Asian Pacific Journal of Tropical Biomedicine (August 2019)

Balamurugan S, Ashwini M and Sathishkumar R

66. Comparative analysis of glyoxalase pathway genes in *Erianthus arundinaceus* and commercial sugarcane

hybrid under salinity and drought conditions

BMC genomics (August 2019)

Manoj, V.M., Anunanthini, P., Swathik, P.C., Dharshini, S., Narayan, J.A., Manickavasagam, M., Sathishkumar, R., Suresha, G.S., Hemaprabha, G., Ram, B. and Appunu, C.

65. Influence of exogenous polyamines and plant growth regulators on high frequency in vitro mass

propagation of *Gloriosa superba* L. and its colchicine content

Biocatalysis and Agricultural Biotechnology (August 2019)

Sivakumar, S., G. Siva, S. Sathish, G. Prem Kumar, M. Vigneswaran, S. Vinoth, T. Senthil Kumar, R. Sathishkumar, and N. Jayabalan

64. Genome-wide analysis of purple acid phosphatase (PAP) family proteins in *Jatropha curcas* L

International Journal of Biological Macromolecules (August 2019)

Venkidasamy, B., Selvaraj, D., and Ramalingam, S.

63. Research on hyper pipes and voting feature intervals classifier for condition monitoring of wind turbine

blades using vibration signals

International Journal of Recent Technology and Engineering (August 2019)

Joshuva, A., Sivakumar, S., Vishnuvardhan, R., Deenadayalan, G., & Sathishkumar, R.

62. Alternative oxidase (AOX) senses stress levels to coordinate auxin-induced reprogramming from seed

germination to somatic embryogenesis—a role relevant for seed vigor prediction and plant robustness

Frontiers in Plant Science (August 2019)

Mohanapriya, G., Bharadwaj, R., Noceda, C., Costa, J. H., Kumar, S. R., Sathishkumar, R., Thiers, K.L.L., Santos Macedo, E., Silva, S., Annicchiarico, P. & Arnholdt-Schmitt, B.



61. Corrigendum to: In silico characterisation and functional validation of chilling tolerant divergence 1 (COLD1) gene in monocots during abiotic stress

Functional Plant Biology (August 2019)

Anunanthini, P., Manoj, V. M., Padmanabhan, T. S., Dhivya, S., Narayan, J. A., Appunu, C., & Sathishkumar, R.

60. Construction of dose response curves up to 6 Gy for micronucleus and dicentric chromosome aberration assay with 6 MV X-ray beam

Radiation Measurements (August 2018)

Mayakannan, K., Sureka, C. S., Venkatesh, R., Ramalingam, S and Jeevanram, R. K.

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Journal of Pharmacy Research (August 2012)

Yadav, S. A., Raj, A. J., and Sathishkumar, R

2. Antioxidant activity of *Withania somnifera* (L.) Dunal by different solvent extraction methods

Journal of Pharmacy Research (August 2011)

Yadava, S. A., Hakkim, L. F., and Sathishkumar, R.

1. Phylogenetic analysis of chloroplast *matK* gene from Zingiberaceae for plant DNA barcoding

Bioinformation (August 2008)

Selvaraj, D., Sarma, R. K., and Sathishkumar, R.

Conferences - 10

10. Metabolic engineering of phenyl propanoid pathway in Rice (*Oryza sativa*)

International Conference on Herbs and Natural Components as the Future of Pharmacology, Avinashilingam Institute for Home Science and Higher Education for Women University, Coimbatore, India (February 2017)

Safia and Sathishkumar.R

9. Pharmaceutical and Cost Benefit Analysis of Commercially Important Pomegranate Varieties

International Conference on Herbs and Natural Components as the Future of Pharmacology, Avinashilingam Institute for Home Science and Higher Education for Women University, Coimbatore, India (February 2017)

Sree Preethy. K and Sathishkumar. R

8. Assessment of In Vitro Anti-Viral Activity of *Cynodon dactylon* Methanolic Extract against Chikunguniya

Virus

International Symposium on Research Innovation for Quality Improvement in Higher Education, Bharathiar University, Coimbatore, India (October 2014)

K. Saravana Murali, I. Varghese, S. Bala Murugan, S. Dinesh, V. Senthilkumar, G. Bupesh, P. Gunasekaran, K. Kaveri, S. Mohan V. Muthuraj and R. Sathishkumar

7. Appraisal of Antioxidant Properties of Selected Green Leafy Vegetables

International Symposium on Research Innovation for Quality Improvement in Higher Education, Bharathiar University, Coimbatore, India (October 2014)

Shanmugaraj Bala Murugan, Aziz Reshma, Ramamoorthy Deepika & Ramalingam Sathishkumar



Bharathiar University

State University | "A⁺⁺" Grade by NAAC | 46th Rank in MoE-NIRF
Maruthamalai Road, Coimbatore, Tamil Nadu - 641 046.

Prof R. SATHISHKUMAR , Professor , Department of Biotechnology

6. Transgenic Tobacco and Tomato with *Arabidopsis thaliana* FAD7 for Enhancing Cold Tolerance

DBT Student Research Project Scheme (2009-2010) published by DBT and TNSCST, India (January 2010)
K. Kiruba and R. Sathishkumar

5. DBT Student Research Project Scheme (2009-2010) published by DBT and TNSCST, India

International Symposium on 16th International Plant Lipid Symposium held in Budapest, Hungary (June 2004)
Girish Mishra, Sathishkumar Ramalingam, M.S.F. Lie Ken Jie and Mee Len Chye

4. Induction of Plantlet Regeneration and Embryogenic Callus in Black Gram, *Vigna mungo* (L.) Hepper cv.

CO4

Symposium on Biotechnology for Better Future and XXVI Meeting of Plant Tissue Culture Association of India published by SAC publications, held in Mangalore, India (January 2004)
Girish Mishra, Sathishkumar Ramalingam, Thirupathi Karuppanapandian, Shipra Agrwal, Venkatraman Jaganathan, Kumariah Manoharan

3. A Cell Culture-based Genetic Transformation System for the Rice Cultivar IR 20 by employing

Microprojectile Bombardment

Symposium on Recent Advances in Biotechnological Applications of Plant tissue and Cell culture and XVIII Meeting of Plant Tissue Culture Association of India Published by Oxford - IBH publishing Co. Pvt. Ltd., New Delhi, held at Central Food Technological Research Institute, Mysore, India (June 1995)
R. Sathishkumar and K. Manoharan

2. In vitro Plant Regeneration in *Arachis hypogaea* L. and *Glycine max* L

DAE symposium on Photosynthesis and Molecular Biology by Department of Atomic Energy, Govt. of India, held at Jawaharlal Nehru University, New Delhi, India (August 1993)

N. Muthu Meenakshi, P. Theriappan, R. Sathishkumar, M. Ramesh, K. Manoharan, Aditya K. Gupta and A. Gnanam

1. In vitro Plant Regeneration in *Arachis hypogaea* L. and *Glycine max* L.

DAE symposium on Photosynthesis and Molecular Biology by Department of Atomic Energy, Government of India, held at Jawaharlal Nehru University, New Delhi, India (March 1993)

N. Muthu Meenakshi, P. Theriappan, R. Sathishkumar, M. Ramesh, K. Manoharan, Aditya K. Gupta and A. Gnanam

Patents

Granted - 2

1. Novel Method for the Detection of Adulteration in Expensive Aromatic Rice by Cheaper Non-Aromatic Rice. 03-2022 Indian Patent No. 392785 Dr. S. Balamurugan, Dr. S. Bala Murugan, Dr. Inchakalody P Varghese, Dr. M. C. Harish, Dr. R. Sathishkumar
2. Genetically modified plants comprising SARS-CoV viral nucleotide sequences and methods of use thereof for immunization against SARS. 06-2005 US patent No. WO2005054473-A1 Mee Len Chye, Hong Ye Li, Sathishkumar Ramalingam, Leo Lit Man Poon and Joseph Sriyal Malik Peiris

Projects

Completed - 33

1. Large-Scale Production of Cancer Biomarkers (antigens) Using Plant Molecular Pharming Approach. RUSA 2.0 - BCTRC Rs.12.88 Lakhs (April 2020 - January 2022)
2. Large-Scale Production of Lignin Peroxidase (LiP) by Molecular Farming for Rapid and Low-Cost Degradation of Coir Waste - a green technology for tackling agro-waste pollution in western Tamil Nadu. TANSCHERs.19.53 Lakhs (April 2021 - October 2024)
3. Metabolic Engineering of *Salvia officinalis* for Enhanced Production of High Value Therapeutics Carnosol (CO) and Carnosic Acid (CA). Others Rs.10.00 Lakhs (May 2021 - June 2023)
4. Systems approach to dissect the novel O-Acyltransferase role in TAG biogenesis towards the promising fourth generation bioenergy feedstock. DST – SERB Rs.26.40 Lakhs (April 2020 - May 2023)
5. Cost effective production of engineered antibodies for early differential diagnosis of Dengue and Chikungunya infection. UGC-UKERI (Indo-UK) Rs.30.00 Lakhs (January 2018 - January 2020)
6. Solar Energy for Development of Bio-Nano Hybrid Protein Sensitized Solar Cells. UGC-CPEPA Rs.3.50 Crores (April 2017 - May 2020)
7. Development of Superior Wheat with High Resistance Starch and Low-Gluten by Allele Mining. RUSA 2.0 - BEICH Rs.6.50 Lakhs (September 2019 - October 2020)



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8. Cell death induced by combination of photodynamic therapy with phytochemicals isolated from *Vaccinium nilgiriensis* on breast cancer therapy - an in vitro approach. DST-NRF (Indo-South Africa) Rs.30.84 Lakhs (September 2016 - November 2019)
9. DNA Barcoding to study the honey biodiversity in Mizoram. Others Rs.70.00 Lakhs (November 2018 - November 2019)
10. Study of DcAOX genes functionality associated with cell reprogramming under abiotic stress. DST-FCT (Indo-Portugal) Rs.5.5 Lakhs (January 2014 - January 2017)
11. Plant molecular farming combined with metabolic engineering approach to produce secondary metabolites in cell suspension culture. TNSCST Rs.0.10 Lakh (November 2017 - April 2017)
12. Development of plant-based recombinant vaccine for Staph Super Antigens. DRDO-BU Centre for Life Science Rs.22.00 Lakhs (February 2014 - March 2017)
13. In vivo and in vitro studies of plant-expressed recombinant antigens and antibodies against Chikungunya virus. UGC-UKERI (Indo-UK) Rs.30.00 Lakhs (February 2015 - February 2016)
14. Development of vitamin E biofortified *Indica* rice. DBT Rs.42.86 Lakhs (June 2012 - July 2016)
15. Purification of the plant-based Chikungunya antigens and evaluation of its vaccine potential. UGC-UKERI (Indo-UK) Rs.34.00 Lakhs (June 2011 - August 2014)
16. Development of a recombinant vaccine in transgenic plants for Chikungunya viral infection UGC-UKERI (Indo-UK) Rs.34.00 Lakhs (August 2009 - September 2012)
17. Study of FAD7 cold tolerant gene by expressing in tobacco. TNSCST Rs.0.10 Lakh (November 2010 - April 2011)
18. DNA barcoding of Indian medicinal plants (Apocyanaceae). UGC-MRP Rs.9.35 Lakhs (April 2008 - May 2010)
19. Enrichment of vitamin E in tomato through metabolic engineering. DRDO-BU Centre for Life Science Rs.17.50 Lakhs (August 2008 - June 2011)
20. Genetic engineering of tomato for cold tolerance by expressing carrot antifreeze protein (AFP). DARL-DRDO Rs.9.92 Lakhs (August 2006 - May 2009)
21. Production of frost-resistant transgenic tomato using LT16/RC12A gene from *A. thaliana*. DRDO Rs.9.88 Lakhs (March 2006 - April 2009)
22. DNA Barcoding of Medicinal Plants (Phase – I) -- Greenchem Herbal Extract and Formulations, Karnataka. Industry Consultancy Project Rs.3.73 Lakhs (April 2015 - April 2016)
23. DNA Barcoding of 25 Medicinal Plants (Phase - I) -- Arjuna Natural Extracts, Kerala. Industry Consultancy Project Rs.1.26 Lakhs (January 2016 - October 2016)
24. DNA Barcoding of 25 Plants (Phase - I) -- Indus Biotech Pvt. Ltd., Maharashtra. Industry Consultancy Project Rs.3.86 Lakhs (April 2016 - April 2017)
25. DNA Barcoding of Plants (Phase - II) -- Indus Biotech Pvt. Ltd., Maharashtra. Industry Consultancy Project Rs.3.86 Lakhs (July 2017 - April 2018)
26. Allele mining for development of rice with slow and sustained energy release -- Texcity Biosciences, Tamil Nadu and DBT-BIRAC-BIPP Industry Consultancy Project Rs.2.00 Crore (January 2016 - February 2018)
27. DNA Barcoding of Medicinal Plants (Phase - I) -- Laila Pharmaceuticals, Pune. Industry Consultancy Project Rs.1.88 Lakhs (November 2018 - November 2019)
28. DNA Barcoding of Plants (Phase - III) -- Indus Biotech Pvt. Ltd., Maharashtra. Industry Consultancy Project Rs.4.73 Lakhs (April 2018 - April 2019)
29. DNA Barcoding of Medicinal Plants (Phase-II) -- Green Chem Herbal Extract and Formulations, Karnataka. Industry Consultancy Project Rs.3.98 Lakhs (April 2018 - April 2019)
30. DNA barcoding of Inter laboratory Consultative project (Phase-II) -- Stanes & Company Limited, Coimbatore. Industry Consultancy Project Rs.0.06 Lakh (April 2019 - November 2019)
31. DNA Barcoding of Plants (Phase-IV) -- Indus Biotech Pvt. Ltd., Maharashtra. Industry Consultancy Project Rs.7.91 Lakhs (January 2019 - December 2019)
32. DNA Barcoding of Medicinal Plants (Phase - II) -- Arjuna Natural Extracts, Kerala . Industry Consultancy Project Rs.4.43 Lakhs (January 2018 - June 2024)



33. DNA Barcoding of Plants (Phase - V) -- Indus Biotech Pvt. Ltd., Maharashtra . Industry Consultancy Project Rs.3.90 Lakhs (February 2021 - August 2024)

Ongoing - 4

1. Field Testing and Commercialization of a Symbiotic Plant Growth Accelerator. (CMRG) CMRG Rs. 39.37 Lakhs (December 2024 - December 2027)

2. Rapid Point-of-Care CRISPR-Based Colorimetric Nucleic Acid Test Kit for Identifying Food Fraud in Fresh and Processed Meat. (CMRG) CMRG Rs. 30.59 Lakhs (December 2024 - December 2027)

3. Enhancing the Production of High Value Therapeutics (Carnosol) using Metabolically Engineered Cell Suspension Cultures of *Salvia officinalis*. (DBT) DBT Rs. 52.04 Lakhs (May 2025 - May 2028)

4. Novel Formulation of Phytomicrobiome to Enhance and Sustainable Production of High-value US-FDA Approved Carnosol and Carnosic Acid in *Salvia officinalis*. (CMRG-Student-Led by Mouliraj (Ph.D. Student)) CMRG Rs. 13.65 Lakhs (July 2025 - July 2027)