

Dr. AKSHAYA MURUGESAN

08th July, 1983

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Education:

2012, Doctor of Philosophy in Marine Biotechnology, Annamalai University, Tamilnadu, India

2007, Master in Philosophy in Biotechnology, Bharathidasan Uni, Tamilnadu, India (81%)

2006, Post Graduate in Zoology (Spl.in Genetics), Department of Zoology, Lady Doak College, Madurai Kamaraj University, Tamilnadu, India. (80%)

2004, Bachelor in Zoology (Spl.in Biotechnology), Department of Zoology, Lady Doak College Madurai Kamaraj University, Tamilnadu, India. (79%)

Current position:

August, 2019, Post-doctoral Researcher, Molecular signaling Lab, Faculty of Medicine and Health technology, Tampere University, Tampere, Finland.

June 2014 - till date (Leave on Loss of Pay), Assistant Professor, Department of Biotechnology, Lady Doak College, Tamilnadu, India.

Previous work experience:

May 2019 to June 2019, Mobility Researcher, Molecular signaling Lab, Faculty of Medicine and Health technology, Tampere University, Tampere, Finland.

Jan 2012 to Dec 2013, Research Associate, Centre of Advanced study in Marine Biology, Annamalai University, Parangipettai, Tamilnadu, India.

Sept 2010 - Feb 2011, Project trainee in bioinformatics in the department of biomedical informatics at tuberculosis research center, Chetpet, Chennai.

Research funding's and grants:

2018- 2021, The Association between osteoporosis candidate gene polymorphisms and bone mineral density in south Indian Postmenopausal women, funded by ICMR.

Principal Investigators: Mrs. Chrisanne Fernandez and Dr. Akshaya Murugesan.

2017- 2020, Tracking the pharmacological basis for ethno-medicinal values of halophytes along the coastal areas of Tamilnadu, funded by DST-SERB (Early career Research Award)

Principal Investigator: Dr. Akshaya Murugesan, budget: 3429000 ₹.

2015- 2018, Exploring glycerol phosphate dehydrogenase gene from plant salt stress tolerance funded by UCG. Principal investigator: Dr.S.T.Somasundaram and primary researcher.

Dr. Akshaya Murugesan. budget: 1464000 ₹.

2015- 2016, Designing an *in vitro* experiment to show the efficacy of different milk to inactivate the virus and their multiplication, funded by DBT-BIRAC.

Principal Investigator: Dr. Akshaya Murugesan, budget: 100000 ₹.

Leadership and supervision experience:

5 years of experience as research supervisor to undergraduate and postgraduate students.

1. Supervisor for Ph.D., students: 3

2018, Mrs.E.Kaarunya (Awaiting for *viva voce*) – “Investigation on the effect of Triclosan in marine diatoms *Chaetoceros calcitrans* using molecular approach to study their stress responses”, Anamalai University. Supervisor: Prof. S.T.Somadundaram. Co-Supervisor: Dr. Akshaya Murugesan

2016, Dr.Anbarasi, Studies on the effects of exogenous application of Absciscic acid for salinity

tolerance in *Suaeda maritima*, Anamalai University. Supervisor: Prof. S.T.Somadundaram . Co-Supervisor: Dr. Akshaya Murugesan
 2014, Dr.Arun Kumar – Evaluation of abiotic stress tolerance factors in the halophyte *Sesuvium portulacastrum* through physiological phytochemical and proteomic approaches, Anamalai University. Supervisor: Prof. S.T.Somadundaram . Co-Supervisor: Dr. Akshaya Murugesan

2. Supervisor for M.Phil student: 1

2014, M.Jeyabharathi, Isolation and characterization of Agarase producing bacteria from marine soil. Supervisor: Dr. Akshaya Murugesan.

3. Supervisor for postgraduate students: 12

2019. Ms.Hema, Sangavi, Ajantha Rai (Proposal confirmation stage), ongoing.
 2019, Ms.Thuvaraka, Secondary metabolite profiling and characterization of antioxidant property in marine sea weed *Cymodocea serrulata* and *Enhalus koenigi*. Awaiting *viva voce*, ongoing.
 2019 - Ms.Rohini, Secondary metabolite profiling and characterization of antioxidant property in marine sea algae *Sargassum muticum* and *Vertebrata lanosa*. Awaiting *viva voce*, ongoing.
 2018, Ms.Arshee, Identification of polyhydroxy butyrate producing marine halophiles from parangipettai.
 2018, Ms.Durga Devi, Identification of polyhydroxy alkonates from marine yeast around the coastal regions of Tamilnadu.
 2018, Ms.Rahila Fathima , Association of estrogen receptor 1 gene polymorphism (*PvuII* And *XbaI*) in diabetic post menopausal women in and around Madurai region.
 2017, Mrs.Nachammai, Single nucleotide polymorphism associated with osteoporosis (Oestrogen receptor gene) in postmenopausal south Indian women.
 2017, Mrs.Saranya, Identification of Single Nucleotide Polymorphism (*ApaI* and *PvuII*) associated with Osteoporosis in the postmenopausal South Indian women.
 2016, Ms.Monica, Poly-β-hydroxy butyrate (PHB) from *Staphylococcus hominis* as an immunostimulant against white spot syndrome virus infection in *Penaeus monodon*—a proteomic approach.
 2016, Mrs.Priyanka, Biosurfactant from *Staphylococcus hominis* as an immunostimulant against white spot syndrome virus infection in *Penaeus monodon* – a proteomic approach.

4. Supervisor for undergraduate students: 25

2019, Agsanaa M, Renuga Devi M, Mahalakshmi M, and Kamali A – Awareness on solid waste management to the womens of Velichanatham village (Awaiting *viva voce*), Madurai Kamaraj University. Supervisor: Dr. Akshaya Murugesan.
 2018, Anitha S, Pooja.K, Sneha.S, Anshiya A, Fathima Shafeeka M., Reduce and resuse of kitchen waste and plastic wastes for making compost gardening and home adorning artefacts.
 2017, Sherin Jose, Aysha, Dhyana, Jegadeshwari, Kitchen waste as a source of compost for the growth of vegetables using pipe/plastic buckets.
 2016, Gowri M., Saraswathi K. Kalavathy K. Josephine Nivetha A. and Jenifer Nisha A Vermicomposting & land filling – a method adopted for managing solid waste in Lady Doak college and Othakadai.
 2015, R.Ambika, A.Raj Shanmathy, M. Priyanka, Monica.R, Yaamini.R ,Hari priya.A Himaya.M Prevalance and management of anemia among regular stream of Lady Doak College.

Other supervision:

2017- till date, Project fellow, Ms. Monica, project fellow – “Ethno medicinal characterisation of potent bioactive compounds of marine halophytes of Tamilnadu coastal region” .

Teaching Experience:

June 2014 - till date, Assistant Professor, Department of Biotechnology, Lady Doak College, Affiliated to Madurai Kamaraj University, Tamilnadu, India.

Subjects Handled:

BTE5502CM; PBT2532M - Molecular Biology
PBT3424M - rDNA technology
BTE6523M - Bioinformatics
PBT4525M - Genomics, proteomics and Bioinformatics
PBT2432P - Lab in Molecular Biology
PBT3323P - Lab in rDNA technology
PBT4526M - Developmental Biology, Genetics and Evolution
BTE4501CM - Principles of Genetics
BTE2402CM - Biochemistry
PBT2322P – Lab n Biological Methods

Experience of organising scientific meetings:

2017, Prof.N.Whitin one day lecture series on Nanotechnology – New perspectives in Biomedical Applications” organized by the Department of Biotechnology, Lady Doak College, Madurai.
2017, Animal Cell culture techniques”, sponsored by DBT, TNCST, from 4to 8th October.
2014, Popularisation of science among school children, organized by the Department of Biotechnolgy, Lady Doak College, Madurai, sponsored by TNCST

Experience of organising Academic meetings:

30th September and 1st of October, 2016, Two days workshop on - Core committee meeting on Student-centric Teaching learning programme - Panel Discussion on ‘Teachers manual for student-centric approach’ sponsored by United board Christian Higher education in Asia’ , conducted by Centre for Environmental studies, Lady Doak College, Madurai.

25th and 26th July, 2016, Two days workshop on “Promoting Student Centric Learning of Environment in India” sponsored by United board Christian Higher education in Asia , conducted by Centre for Environmental studies, Lady Doak College, Madurai.

July 21st to 23rd, 2016, Three days workshop on "Environmental Risk Assessment" sponsored by United board Christian Higher education in Asia conducted by Centre for Environmental studies, Lady Doak College, Madurai.

Resource person:

2017, Tutor in the workshop “Animal Cell culture techniques”, sponsored by DBT, TNCST, from 4to 8th October.
2017, Guest Speaker in the Orientation Programme organized for our Biology teachers on “ Breaking the Barriers” on Recent Trends in Biotechnology on June 2nd.
2016, Resource person for the Workshop on Animal cell culture on “Lymphocyte Separation from Human blood” on December15.
2016, Guest Speaker on “Causes of Aging and Scientific Interventions to Live Longer” Thiagarajar College of Preceptors, Madurai, on 20th April.

Scientific skills through training programs:

2016, training on "ICT enable Moodle Training for Effective Teaching, organized and conducted by Lady Doak College.
2013, training on “ICP-MS for heavy metal and toxico-genomic evaluation by Agilent technologies” Bangalore, India.
2012, training in MALDI/TOF/TOF/MS for proteomic analysis in CAS in marine biology by AbSciex private limited, Hyderabad.

2012, Fast performance Liquid Chromatography (FPLC) training for the separation and purification of proteins, Biorad pvt technologies, Germany.

2012, Two-dimensional Electrophoresis training by Biorad pvt technologies, Germany.

2010, Computational Biology Training for a period of six months in “Data Mining, Data Analysis, Modeling, Structural Motif Analysis of DNA Binding Proteins in the genome of Mycobacterium Tuberculosis” in the Department of Biomedical Informatics, Tuberculosis Research Institute, Chennai, Tamilnadu, India.

Scientific and academic merits:

2019-2020, ICMR-DHR Long term International Fellowship for Indian Biomedical Scientists, India.

2018, Awarded Science Academies summer training fellowship for 2 months in the department of Molecular structural biology sponsored by Indian Academy of Sciences at Central Drug Research Institute, Lucknow.

2016, State eligibility test (SET) for lectureship in Life sciences conducted by Mother Teresa University, Kodaikanal.

2013. Won first prize in International seminar on ‘Biotechnology and Human welfare’, at SASTRA University, Thanjavur, Tamilnadu, India,

2012, Won first prize in National conference on “Defensive Mechanism of Alpha 2 Macroglobulin related molecule in marine sponge (*Spongia officinalis*), CAS in marine biology, Annamalai university, Parangipettai,

Peer Reviewed Journals

1. Chrisanne F, Priscilla J, Saranya P, Nachiammai S, **Akshaya Mu**, The association of bone mineral density (BMD), body mass index (BMI) and serum osteocalcin in South Indian post menopausal women, Indian Journal of Medical Specialities, Volume 9, Issue 2, 2018, 52-55.
2. Monica M, Priyanka T, **Akshaya Mu**, Rajeswari V, Sivakumar L, Somasundaram ST, Shenbhagarathai R. The efficacy of Poly-β-Hydroxy Butyrate (PHB)/biosurfactant derived from Staphylococcus hominis against White Spot Syndrome Virus (WSSV) in Penaeus monodon, *Fish Shellfish Immunol.* 2017, 71:399-410.
3. **Akshaya Mu**, Arun kumar, Anbarasi G, Somasundaram S.T., Hsp70 and Theta Subunit of T Complex Protein, a Response to Salt Stress in the Halophyte *Sesuvium portulacastrum*, Journal of Bioinformatics and Proteomics Review, 2016, Volume 2: Issue 2, 116 -124.
4. Kaarunya E, **Akshaya Mu**, S.T.Somasundaram, and P.Anantharaman, A simple approach combining microscopic and molecular techniques to identify diatoms isolated from Vellar Estuary, South coast of India, J. of Algal Biomass Utln. 2016,7(1):71-77.
5. **Akshaya Mu@ Sivagama Sundari**, Somasundaram ST, Chellam Rajamanickam. Homologous sequences of cardiac isoform of rat α2 macroglobulin in marine sponges (*Spongia officinalis*), Journal of Pharmacy Research, 2011. 4(3);589-593.
6. **Akshaya Mu@Sivagama Sundari** , Anantha Barathi M, Somasundaram ST, Chellam Rajamanickam. *In silico* functional domain characterization and phylogenetic analysis of alpha 2 macroglobulin related molecule (α2M_SO) from *Spongia officinalis*, International Journal of Biological and Medical Research, 2011, 2(3):696-701.

Non-Peer reviewed Magazine of Annamalai University:

7. Arun kumar, **Akshaya Mu @ Sivagama Sundari** and Somasundaram .S.T. “Economic potential of halophytes” – special publication, CAS in Marine Biology, Faculty of Marine Sciences, Annamalai University, ENVIS publication series1; March, 2013, 45-50.

Papers publication in Proceedings:

8. Priyatharshini R, **Akshaya Mu**, and Gunaseeli R, A study on sustainable resource management at Lady Doak College, Environmental action in selected Indian Colleges and Universities: A compendium, United Board for Christian Higher Education in Asia, 2016.

Paper presentation at National and international conferences:

9. Global competence among Lady Doak College – A Case Study” in the National Conference on ‘Quality Sustenance in Higher Education Institution’, organized by the Internal Quality Assurance cell (IQAC), Lady Doak College, Madurai, 6th and 7th September 2018.
10. National conference on “Oxidative Stress in health and diseases” at Kerala University, Kerala, India, 2011.
11. National Conference on “Medicinal Plant Chemistry” – “A survey and photochemical screening of ethnomedicinal plants in and around Madurai and Dindigul Districts, NMG College, Pollachi, India, 2006.

Poster Presentation:

12. Poster presentation on ‘Protein profile analysis of the diatom *Chaetoceros calictrans* upon exposure to Triclosan’, Kaarunya E*, **Akshaya Mu**, Somasundaram ST, Anantharaman P, conducted at Canadian Ecotoxicity workshop, Vancouver, September 30-October 3, 2018.

Publication of Books:

Editor and contributor for a chapter: Gunaseeli R, Priyatharsini Rajendran, Melba Rosalind.J and **Akshaya Murugesan**, "A Learner - Centered Instruction Manual for Environmental Education", Centre for Environmental Studies, Lady Doak College, Madurai, Tamilnadu, India. ISBN NO: 978-81-921731-1-5, **2017**.

Participation in Conferences and industrial training:

- 2018, “ICT enabled tools for teaching” organized by centre for communication and multimedia, Lady Doak College, on 10th January.
- 2016, Taking Research from Bench to Bed side" organised by PG & Research Department of Zoology & Biotechnology, Lady Doak College, on 23rd, February.
- 2016, Industrial conference on Greenhouse gas accounting at Chennai, on March 31st, conducted by Confederation of Indian Industries, Hyderabad.
- 2015, National Conference on “Roof Top Solar” “Driving 1000 MW by 2019 in Southern Region: Issues & Challenges at Chennai, conducted by Confederation of Indian Industries, Hyderabad.
- 2014, National conferences on “Biological trends in biological sciences” on 16,17th September, held at Lady Doak college, Madurai.
- 2014, Participated in a training program on “Being an effective teacher” at Lady Doak college, Madurai on July 8 and 9.
- 2010, International conference on “Natural products in health and 21st annual conference of the Indian society for arthrosclerosis disease December 08-December 10” held at Annamalai University, Chidambaram, India.

ACCESSION NUMBER IN GENE BANK

- 2009, GQ353346, **Sivagama Sundari,M., @ Akshaya Mu**, Anantha Barathi,M., Somasundaram,S. and Rajamanickam,C. *Spongia officinalis* alpha 2 macrologulin-related protein mRNA partial cds.
- 2013, KF443081, Kumari,P., Kumar,A., **Sivagama Sundari,M.,@ Akshaya Mu** and Somasundaram,S.T. *Vibrio alginolyticus* strain PTS13 16S ribosomal RNA gene, partial sequence.

- 2016, KT757316, Eswaran,K., Sivagama Sundari,M., Somasundaram,S.T. and Anantharaman,P.Reduce and resuse of kitchen waste and plastic wastes for making compost gardening and home adorning artefacts.
- 2016, KT757317, Eswaran,K., **Sivagama Sundari,M.,@ Akshaya Mu** Somasundaram,S.T. and Anantharaman,P. Navicula clavata 18S ribosomal RNA gene, partial sequence.

Referees:

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Former, Dean, Centre of Advanced study in Marine Biology,
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3. Dr.Chellam Rajamanickam
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Madurai Kamaraj University, Palkalai Nagar, Madurai
Presently, Director, Osho Biotech Research Institute,
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