

Curriculum Vitae

Dr. R. SARAVANAN, M. Sc., M.Phil., Ph.D.,
Assistant Professor (SI Gr) - Marine Pharmacology
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Academic Career Highlights

EDUCATION

- 2007-2010 **Ph.D., - Marine Biotechnology**, Annamalai University, Parangipettai, India
2000-2002 **M.Phil., - Biochemistry**, Bharathiar University, Coimbatore, India
1998-2000 **M. Sc., - Biochemistry**, Annamalai University, Chidambaram, India

PROFESSIONAL EXPERIENCE

- 2003-2006 **Lecturer**, Department of Biotechnology, SRM Arts and Science College, Chennai- 603 203, TN, India
2006-2009 **Senior Research Fellow**, Indian Council of Medical Research (ICMR) in Faculty of Marine Sciences, Annamalai University, Parangipettai-608 502, TN, India
2010-2011 **Senior Research Fellow**, Centre for Marine Living Resource and Ecology (CMLRE) in Faculty of Marine Sciences, Annamalai University, Parangipettai-608 502, TN, India

Extramural Fundeted Project

Title of the project: “**Antiviral activity of O-sulfated low molecular weight chitosan from industrial waste of cephalopods against herpes simplex virus *in vitro***”. Department of Biotechnology, Govt. of India. (Role – Principal Investigator) (2019-21)

CRUISE TRAINING

Participated in the cruise #279 of FORV SAGAR SAMPADA to undertake the “Studies on assessment of Demersal Fishery, Cephalopod Resource Assessment, Environment and Productivity along the Continental shelf of East coast of India” from 21.08.2010 to 09.09.2010 (20 days) and covered 2560 Nautical miles in the voyage along the East coast of India.

PATENT & COPY RIGHT

1. **R. Saravanan** and A. Shanumgam (2016). Use of low molecular weight heparan sulfate from marine scallop *Amusium pleuronectus* (Linne) for cardiovascular diseases. **The Patent Office Journal. pp24379. (Application No.1603/CHE/2013 A/dated 09/04/2013)**
2. V. Manigandan, R. Karthik, **R. Saravanan** and R. Murugesan (2018). Process, extraction of low molecular sulfated chitosans and their application in the treatment of Neurological disease. **(Application No. 201841000238)**
3. R.Saravanan, Jeneesha George, R. Gomathy, V. Janani Priya, V.Manigandan, R. Murugesan (2019). Extraction and formulation of agar from brown seaweed & use of their anticancer properties. **(Application No.E-101/17997/2019/dated 01.07.2019)**
1. V. Manigandan, V. Alexandar, R. Karthik, **R. Saravanan** et al. (2017). Title of work “DarioGenBase” Computer Software Work, **Diary Number: 11812/2017CO/SW.**

LIST OF PUBLICATIONS

I. Gene Sequence Deposited in GenBank:

1. <http://www.ncbi.nlm.nih.gov/nuccore/KC020188>
2. <https://www.ncbi.nlm.nih.gov/nuccore/KY214383>
3. <https://www.ncbi.nlm.nih.gov/nuccore/KY214382>
4. <https://www.ncbi.nlm.nih.gov/nuccore/KY472311>
5. <https://www.ncbi.nlm.nih.gov/nuccore/KY472310>
6. <https://www.ncbi.nlm.nih.gov/nuccore/KY472309>
7. <https://www.ncbi.nlm.nih.gov/nuccore/KY472308>
8. <https://www.ncbi.nlm.nih.gov/nuccore/KY472307>
9. <https://www.ncbi.nlm.nih.gov/nuccore/KY472306>
10. <https://www.ncbi.nlm.nih.gov/nuccore/KY471700>
11. <https://www.ncbi.nlm.nih.gov/nuccore/KY486501>
12. <https://www.ncbi.nlm.nih.gov/nuccore/MF838726.1>
13. <https://www.ncbi.nlm.nih.gov/nuccore/MF838725.1>
14. <https://www.ncbi.nlm.nih.gov/nuccore/MF838724.1>
15. <https://www.ncbi.nlm.nih.gov/nuccore/MF838723.1>

SUMMARY OF RESEARCH

Papers	31	Citations	307
h-index	11	i10-index	12

II. Book Editor and Book chapters:

1. **Saravanan R.** (2014). Chapter 3: Isolation of low molecular weight heparin/heparan sulfate from marine sources – ‘Advances in Food and Nutrition Research’, (Ed) S.K. Kim, Academic Press, **Elsevier Publications** (ISSN No.1043-4526), 72, pp.45-60.
2. Gowtham Kumar S, Karthik R, Manigandan V, Sheeba R & **Saravanan R.** (2015). Chapter 4: Hepatoprotective effect of phloroglucinol from south Indian marine macroalgae against liver disorders, “Hepatotoxicity; symptoms, managements and health implications”. (Eds) S. Rajagopal and S. Murugan, Nova Publications, **New York. USA** (ISBN: 798-1-63482-650-1), pp. 51-78.
3. Manigandan V, Karthik R & **Saravanan R.** (2016). Chapter 3: Anti-inflammatory effect of polymer from cephalopod against experimentally induced intestinal bowel disease in Zebrafish model, “Disorders of gastrointestinal systems and clinical manifestations”. (Eds) Senthilkumar R, Senguttavelan M and **Saravanan R.** Nova Publications, **New York. USA.** (ISBN: 978-1-63485-366-8), pp.24-45.
4. Senthilkumar, R, Senguttavelan M & **Saravanan R.** (2016). Disorders of gastrointestinal systems and clinical manifestations, Nova biomedical, Nova publishers, **New York, USA** (ISBN: 978-1-63485-366-8), pp. 1-323.
5. **Saravanan R,** Karthik R & Shanmugam A. (2016). Chapter 9: Partial sequencing, structural characterization and anticoagulant activity of heparan sulfate and sulfated chitosan from selected Indian marine mollusks, “Marine Glycobiology” (Ed) Se-Kwon Kim, **CRC Press,** (ISBN: 978-1-4987-0962-3), pp. 129–143.
6. **Saravanan R** & Karthik R. (2016). Chapter 13: Isolation of proteoglycans from marine sponges and its biomedical applications, “Marine Sponges: Chemicobiological and Biomedical Applications’. (Eds.) P. Ramjee and E. Hermann, **Springer Publications** (ISBN: 978-81-322-2792-2) pp.287-304
7. Karthik R & **Saravanan R.** (2016). Chapter 14: Study of Marine Mollusks – A Glycomic Approach, “Marine Omics”. (Ed) Se-Kwon Kim, **CRC Press,** (ISBN: 9781482258202) pp.267-280.
8. Alexander V, **Saravanan R** & Shiek F. Ahamed SSJ. (2016). Chapter 22: Marine Informatics: A New Area of Research in Biology, “Marine Omics”. (Ed) Se-Kwon Kim, **CRC Press,** (ISBN: 9781482258202) pp.419-440.
9. Manigandan V, Nataraj J, Arumugam V, Srivarshini S, Ramachandran K, Arunadevi S, Umamaheswari S, Manivasagam T, Justinthenmozhi A & **Saravanan R.** (2018). Chapter 8. Ascidiaceans as bioactive sources for Huntington disease, “Food and Parkinson’s Disease” (Eds) Essa MM, Manivasagam T, Justin Thenmozhi A & Hamid Q. Nova Publications, **New York. USA** (ISBN: 978-1-53613-855-9) pp. 181-214.

10. Manigandan V, Karthik R, **Saravanan R** & Senthilkumar R. (2018). Chapter 15. Chitosan application in food industry. "Biopolymer for food design". (Ed). Alexandru Grumezescu, **Elsevier publications**, (ISBN: 978-0-12-811449), Volume 20: pp.469-491.
11. Manigandan V, Karthik R, Barathkumar TR, Lekshmisree SL, Rubanya P, Subburaj J & Saravanan R. (2018). Chapter 10. Ameliorative role of marine seaweed bioactives against Parkinson's Disease, "Food and Parkinson's Disease" (Eds) Essa M, Manivasagam T, Justin Thenmozhi A & Khan M.A.S. Nova Publications, **New York, USA** (ISBN: 978-1-63485-754-3) (In press)

III. Peer Reviewed Journals:

1. Manigandan V, Velusamy A, Rubanya P, Karthik R, Karthi S, Sri Ramkumar V, Umamaheswari S, **Saravanan R** & Arivalagan P. (2019). Antioxidant, anticoagulant and mosquitocidal properties of water soluble polysaccharides (WSPs) from Indian seaweeds. *Proces. Biochem*, (In press) **(IF-2.61)**
2. Arumugam V, Manigandan V, Saravanan N, Saravanan R, Karthi S, Umamahesheswari S & Sathishkumar P. (2019). Tunicates as a biocontrol tool for larvicides acute toxicity of Zika virus vector *Aedes aegypti*. *3 Biotech*, 9: (Online). **(IF-1.4)**
3. Malar S, Manigandan V, Velusamy A, Geetha N, Nishakavya S, Selvakumar M, **Saravanan R**, Rathinam A, & Arivalagan P. (2019). Green synthesis and characterization of titanium dioxide nanoparticles (TiO₂ NPs) using *Sesbania grandiflora* and evaluation of toxicity in zebrafish embryos. *Proces. Biochem*, 80: 197-202. **(IF-2.61)**
4. Velusamy A, Manigandan V, Karthik R, **Saravanan R**, Satheesh Kumar P, & Umamaheswari S. (2019). Purification, characterization and antibacterial properties of peptide from marine ascidian *Didemnum* sp. *Int. J. Pep. Res. Ther*, (Online) **(IF-1.13)**
5. Karthic U, Vinothkumar M, Manigandan V, **Saravanan R**, Kamaraj C, Muthugounder S S, Brahmanaidu P, Sengodan K, & Michalis K. (2018). Chemical composition of *Rhizophora mucronata* leaf extracts and their larvicidal activity against three major mosquito vectors. *Parasit. Vect*, (DOI 10.1186/s13071-017-2554-1) (In press). **(IF-3.43)**
6. Karthik R, Manigandan V, Ebenezar KK, Kavitha M, **Saravanan R**. (2019). Structural characterization, teratogenicity and in vitro avian antimicrobial activity of posterior salivary gland (PSG) toxin from cuttlefish, *Sepia prashadi*. *Int J Biol Macromole*. 124: 1145-1155. **(IF-3.9)**
7. Manigandan V, Nataraj J, Karthik R, Manivasagam T, **Saravanan R**, Thenmozhi, JA, Essa MM & Guillemin GJ. (2018). Low molecular weight sulfated chitosan: Neuroprotective effect on rotenone-induced *in vitro* Parkinson's Disease. *Neurotox. Resear*, 35(3): 505-515. **(IF-3.53)**

8. Velusamy A, Manigandan V, **Saravanan R**, & Umamaheswari S. (2017). Bioactive peptides from Marine Ascidians and future drug development-A review. *Int. J. Pep. Resear. Therap.* 1: 1-6 (IF-0.94)
9. Karthik R, Manigandan V & **Saravanan R**. (2017). Toxicity, teratogenicity and antibacterial activity of posterior salivary gland (PSG) toxin from the cuttlefish *Sepia pharaonis*, Ehrenberg (1831). *J. Chromato.B*, 1064:28-35. (IF-2.61)
10. Meera M, Ruckmani A, **Saravanan R** & Lakshimipathy prabhu R. (2017). Anti-inflammatory effect of ethanolic extract of spine, skin and rind of Jack fruit peel – A comparative study. *Nat. Prod. Res.*, 31(22): 1-5 (IF-1.8)
11. Karthik R, Manigandan V, Ebenezar KK, R, Vijayashree R & **Saravanan R**. (2017). *In vitro* and *in vivo* anticancer activity of posterior salivary gland toxin from the cuttlefish *Sepia pharaonis*, Ehrenberg (1831). *Chem.Biol.Inter.*, 272:10-20. (IF-3.14)
12. Karthik R, Manigandan V, Sheeba R, **Saravanan R** & Rajesh RP. (2016). Structural characterization and comparative biomedical properties of phloroglucinol from Indian brown seaweeds. *J Appl. Phycol.*, 28: 3561-3573. (IF-2.65)
13. Karthik R, Manigandan V, **Saravanan R**, Rajesh RP & Baby C. (2016). Structural characterization and *in vitro* biomedical activities of sulfated chitosan from *Sepia pharaonis*. *Int J Biol Macromole.*, 84: 319-328. (IF-3.67)
14. Manigandan V, Karthik R & Saravanan R. (2015). Marine carbohydrate based therapeutics for Alzheimer disease – Mini review. *J Neurol and Neuroscie.*, (special issue): 1-6.
15. Karthik R, **Saravanan R**, Ebenezar KK & Sivamalai T. (2014). Isolation, purification, and characterization of avian antimicrobial glycopeptide from the posterior salivary gland of *Sepia pharaonis*. *Appl Biochem Biotechnol.*, 175(3): 1507-1518. (IF-1.73)
16. Subhapradha N, **Saravanan R**, Ramasamy P, Shanmugam V, Srinivasan A & Shanmugam A. (2014). Hepatoprotective effect of β -Chitosan from gladius of *Sepioteuthis lessoniana* against carbon tetrachloride-induced oxidative stress in Wistar rats. *Appl Biochem Biotechnol.*, 172: 9-20. (IF-1.73)
17. Vidhyanandhini R, **Saravanan R**, Vairamani S & Shanmugam A. (2014). The anticoagulant activity and structural characterization of fractionated and purified glycosaminoglycans from venerid clam *Meretrix casta* (Chemnitz). *J Liquid Chrom Relat Tech.*, 37: 917-929. (IF-0.63)
12. Sudharsan S, Seedeve P, **Saravanan R**, Vairamani S, Vasanthkumar S, Srinivasan A & Shanmugam A. (2013). Isolation, characterization and molecular weight determination of collagen from marine sponge *Spirastrella inconstans* (Dendy). *Afri J Biotechnol.*, 12(5): 504-511. (IF-0.57)

13. **Saravanan R**, Ramasamy P, Sudharsan S, Vairamani S & Shanmugam A. (2013). Protective effect of glycosaminoglycans from *meretrix meretrix* (gmelin) against isoproterenol - induced myocardial infarction in male wistar rats. *Amer J Adv Drug Del.*, 1: 56-65. (IF-0.64)
14. **Saravanan R**, Ebenezar KK, Rajasekaran S & Thamaraiselvan R. (2013). Isolation, characterization and anticoagulant activity of sulfated polysaccharides from brown algae *Sargasam wightii* Greville. *J Biol Sci.*, 13(4): 283-287.
15. Subhapradha N, Suman S, Ramasamy P, **Saravanan R**, Shanmugam V, Srinivasan A & Shanmugam A. (2013). Anticoagulant and antioxidant activity of sulfated chitosan from the shell of donacid clam *Donax scortum* (Linnaeus, 1758). *Int J Nutri Pharmacol Neur Dis.*, 3(1): 39-45.
16. **Saravanan R**, Shanmugam A & Rajkumar D. (2012). Preventive effect of glycosaminoglycans from *Amussium pleuronectus* (Linne) on biomolecules, lactate dehydrogenase-isoenzyme and electrocardiographic patterns in isoproterenol-induced myocardial infarction in Wistar rats. *Indian J Pharmacol.*, 44(5): 602-606. (IF-0.69)
17. Shanmugam A, Subhapradha N, Suman S, Ramasamy P, **Saravanan R**, Shanmugam V & Srinivasan A. (2012). Characterization of biopolymer chitosan from the shell of donacid clam *Donax scortum* (Linnaeus, 1758) and its antioxidant activity. *Int J Pharmacy Pharmaceut Sci.*, 4(2): 460-465.
18. Revathi M, **Saravanan R** & Shanmugam A. (2012). Extraction of chitin from the cuttlebone of *Sepiella inermis* Orbigny, 1848 and production, purification and characterization of chitinase from *Vibrio* sp. using head waste of shirmp *Metapenaeus dobsonii* (Miers, 1878). *Advan Biosci Biotechnol.*, 3:392-397.
19. **Saravanan R** & Shanmugam A, (2011). Is isolation and characterization of heparan sulfate from marine scallop *Amussium pleuronectus* (Linne) an alternative source of heparin!!! *Carbohydr Poly.*, 86 (2), 1082-1084. (IF-4.07)
20. **Saravanan R**, Arulraj S & Shanmugam A. (2011). Identification of two mud crab species (genus *Scylla*) using restriction fragment length polymorphism. *Cur Sci.*, 101(6): 739-740. (IF-0.92)
21. Ramasamy P, Barwin Vino A, **Saravanan R**, Subhapradha N, Shanmugam V & Shanmugam A. (2011). Screening of antimicrobial potential of polysaccharide from cuttlebone and methanolic extract from body tissue of *Sepia prashadi* Winkworth, 1936. *Asian Paci J Trop Biomed.*, S243-S247. (IF-1.17)
22. Shanmugam A, Ramasamy P, Mukesh Kumar Bharti, **Saravanan R**, Subhapradha N, Vairamani S, & Jayalakshmi K. (2011). Isolation and characterization of collagen from the skin of *Sepia pharaonis* (Ehrenberg, 1831). *Int J Cur Res.*, 3(6), 107-111.

23. Sudharsan S, Saravanan R, Shanmugam A, Vairamani S, Mohan Kumar R, Menaga S, & Ramesh N. (2011). Isolation, characterization of octadecanoic acid from the etyl acetate root extract of *Trigoellafoneum graecum L.* by using hydroponics method. *Bioterr Biodef.*, 2(1): 1-4.
24. Saravanan R & Shanmugam A. (2010). Isolation and characterization of low molecular weight glycosaminoglycans from marine mollusc *Amussium pleuronectus* (Linne) using chromatography. *Appl Biochem Biotechnol.*, 160, 791-799. (IF-1.73)
25. Saravanan R & Shanmugam A. (2010). Preventive effect of low molecular weight glycosaminoglycan from *Amussium pleuronectus* (Linne) on oxidative injury and cellular abnormalities in isoproterenol-induced cardiotoxicity in Wistar rats. *Appl Biochem Biotechnol.*, 162, 43-51. (IF-1.73)
26. Saravanan R, Vairamani S & Shanmugam A. (2010). Glycosaminoglycans from marine clam *Meretrix meretrix* (Linne.) are an anticoagulant. *Prep Biochem Biotechnol.*, 40, 305-315. (IF-1.01)
27. Saravanan R, Sambasivam S, Shanmugam A, Tamilvanan T, Sathishkumar D & Nazeer RA. (2009). Isolation, purification and biochemical characterization of conotoxin from *Conus figulinus* Linneaus (1758). *Indian J Biotechnol.*, 8, 266-271. (IF-0.68)
28. Saravanan R, Shanmugam A, Preethi Ashok, Sathishkumar D, Anand K, Amitesh Suman & Devodass FR. (2009). Studies on isolation and partial purification of lysozyme from the egg white of lovebird (*Agapornis* species). *Afr J Biotechnol.*, 8(1), 107-109. (IF-0.57)
29. Saravanan R, Pavanidevi V, Shanmugam A & Sathishkumar D. (2007). Isolation and partial purification of extracellular enzyme (1,3)- β -D glucanase from *Trichoderma reesei* (3929). *Biotechnol.*, 6(3), 440-443.
30. Saravanan R, Sathishkumar D & Indira A. Jayraaj. (2005). Cellulose and hemicellulose degradation of coir pith using mutant strain of *Trichoderma viride*. *Poll Res.*, 24 (Special Issue), 27-30.
31. Saravanan R & Indira A. Jayraaj (2004). Comparative studies on degradation of cellulose in coir pith using the fungus *Pleurotus sajor caju* and *Trichoderma viride*. *Asian J Microbiol Biotechnol Environ Sci.*, 6(4), 681-685.

RESEARCH (PhD) GUIDANCE

S.No	Scholar Name	Area of Research	Status
1.	R. Karthik	Studies on Structural Characterization, Teratogenic and Anticancer activities of Toxin isolated from the Posterior Salivary	Awarded (2017)

		Gland of <i>Sepia pharaonis</i> (Ehrenberg, 1831)	
2.	M. Meera	Pharmacology actions of phytochemicals from jack fruit waste	Awarded (2018)
3.	V. Manigandan SRF-CSIR	Sulfated polysaccharides and its muetoprotective effect	Thesis submitted
4	N. Vignesh DBT - JRF	Antiviral activity of sulfated polysaccharides from marine sources	On going
5.	A. Thabitha DST-Inspire Fellow	Antidiabetic wound healing property of formulated agar from brown seaweed on experimental rats	On going

CONFERENCE / SEMINAR / SYMPOSIUM

Presentations: National – 15; International – 8 => Total: 23

Workshops / Special Training: 5

Membership

Life member in **Society for Biotechnologists (India)**