

CURRICULUM-VITAE

Dr. SadeeshKumar Velayudham Ph.D.,

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OBJECTIVE

To work in a growth oriented and challenging environment where my knowledge and skills will be utilized for the mutual benefits.

ACADEMIC PROFILE

Ph.D. Marine Biotechnology (2012-2017)

Thesis Title: Inhibitory effects of Dieckol on N-nitrosodiethylamine induced Hepatocarcinogenesis in rats.

Department of Marine Biotechnology, Faculty of Marine Sciences, Annamalai University, Tamilnadu, India

M.Phil Biotechnology (2010-2012)

Thesis Title: Chronotherapeutic effects of gallic acid on vancomycin induced nephrotoxicity in Wistar rats.

Department of Biotechnology, Faculty of Science, Annamalai University, Annamalainagar, Tamilnadu, India

M.Sc. Biotechnology (2006-2008)

Thesis Title: Isolation, Screening, Biochemical characterization, Media optimization, Pilot scale production, Partial purification and Kinetics study of protease from *Bacillus* Sp.

Department of Biotechnology, Muthayammal College of Arts and Science, Periyar University, Tamilnadu, India

B.Sc. Botany (2003-2006)

Thesis Title: Isolation of soil fungi from Pichavaram Mangrove

Department of Botany, AVC College, Bharathidasan University, Tamil Nadu, India

PERSONAL PROFILE

Name	: Sadeeshkumar Velayutham
Date of Birth/Age	: 03.04.1983/35yrs
Sex	: Male
Marital Status	: Married
Contact Address	: No. 11, Vasuki Nagar, Thenoor, Thirunallar, Karaikal, Pondicherry. Pincode: 609607.

PUBLICATIONS

Published Articles

1. **Sadeeshkumar V**, Duraikannu A, Ravichandran S, Kodisundaram P, Fredrick WS, Gobalakrishnan R. Modulatory efficacy of dieckol on xenobiotic-metabolizing enzymes, cell proliferation, apoptosis, invasion and angiogenesis during NDEA-induced rat hepatocarcinogenesis. *Mol Cell Biochem* 2017; 433: 195-204.

2. **Sadeeshkumar V**, Duraikannu A, Ravichandran S, Fredrick WS, Sivaperumal R, Kodisundaram P. Protective effects of dieckol on N-nitrosodiethylamine induced hepatocarcinogenesis in rats. *Biomed Pharmacotherapy.*, 2016; 84: 1810-1819.
3. **Sadeeshkumar V**. Chronotherapeutic effects of gallic acid in the renal markers, lipid peroxidation, enzymatic antioxidants and non enzymatic antioxidant on vancomycin induced nephrotoxic rats. *Int. J. Pharm. Bio. Sci.* 2013; 4(4): (B) 289 – 298.
4. **Sadeeshkumar V**, Arul D and Ravichandran S. Protective effects of gallic acid in the renal markers, histopathology and immunohistochemical studies on vancomycin induced nephrotoxic rats. *Int. J. Adv. Lif. Sci.* 2013; 6: 131-140.
5. **Sadeeshkumar V**, Ramya M S, Ravichandran S and Sylvester Fredrick W. potential activity of in-vitro antioxidant on methanolic extract of *Babylonia zeylonica* (Bruguiera, 1789) from mudasalodai south east coast of india. *Int J. Pharm, Sci, Res.* 2014; 4(3): 60-64.
6. Sylvester Fredrick W, **Sadeeshkumar V** and Ravichandran S. Protein analysis of the crab haemolymph collected from the trash. *Int J Pharm Pharm Sci*, 2013; 5(4). 304-308.
7. Ganeshamurthy R, Mohan Raj M, **Sadeeshkumar V** and Veerappan N. Effect of copepoda parasites *Caligus longipedis* (Bassett Smith, 1898) infection in marine ornamental fish *Amphiprion percula* and *Amphiprion clarkia*. *Int. J. Fisheries and Aquatic studies.* 2014; 1(6): 173-175.
8. Manikandan A, Nemani SC, **Sadeeshkumar V**, Arumugam S. Spectroscopic Investigations for Photo Stability of Diclofenac Sodium Complexed with Hydroxypropyl-B-Cyclodextrin. *J App Pharm Sci*, 2016; 6(04): 098-103.

Article in under progress

9. **Sadeeshkumar V**, Arul Duraikannu A, Aishwarya T, Prithi J, Ravichandran S, Kodisundaram P, Fredrick WS, Gobalakrishnan R, Ganeshamurthy R. Radioprotective efficacy of dieckol against gamma radiation induced cellular damage in hepatocytes cells. *Journal of Pharmacological and Toxicological Methods.* (Under review, ARI_2018_640).
10. **Sadeeshkumar V**, Arul Duraikannu A, Aishwarya T, Prithi J, Ravichandran S, Kodisundaram P, Fredrick WS, Gobalakrishnan R. Dieckol inhibits the JAK/STAT-3 signaling and induces apoptosis in hepatocellular carcinoma cells. *Toxicology reports.* (Under Revision, TOXREP-D-17-00281).
11. Duraikannu A, **Sadeeshkumar V***, Prithi J, Aishwarya T, Ganeshamurthy R, Subramanian P. Efficacy of naringenin (citrus flavonone) on lipids, lipoproteins, lipid metabolizing enzymes and inducible nitric oxide synthase expression in NDEA-induced hepatocarcinogenesis rats. *Journal of applied biomedicine.* (Under Review; JAB_2017_301). * **First author equal Contribution.**
12. Duraikannu A, **Sadeeshkumar V***, Subramanian P. Ameliorative effects of naringenin on N-nitrosodiethylamine-induced circulatory prooxidant and antioxidant imbalance and DNA damage in hepatocarcinogenesis rats. *Journal of Pathology and oncology research.* PORE-D-16-00301. * **First author equal Contribution.**

FELLOWSHIP AND AWARDS

- Technical Assistant in DST PURSE Programme in CAS in Marine Biology at Annamalai University period dated in 30.01.2014-31.03.2014 and 01.04.2014-15.03.2015

SUMMARY OF RESEARCH TOPICS:

Cancer chemoprevention and Experimental Therapeutics (2012-2017)

Projects Details:

In vivo:

- Liver tumor induced to rat
- Screened the active phytochemical from brown algae.
- Analysed the Histopathological observation in the liver tissues of control and experimental animals
- Analysed the different biochemical parameters (tumor markers, liver markers, phase I and phase II enzymes, lipid peroxidation and antioxidant markers) from plasma, serum, liver and kidney tissues.
- Intrinsic mitochondrial apoptosis pathways related genes and proteins were analysed by Immunohistochemistry, Western blot and RTPCR.

In vitro:

- Huh-7 Cancer cell lines maintained for our entire study.
- Screened the pharmaceutical active phytochemicals (dieckol) from brown algae.
- Analysed the effects of dieckol on the growth of Huh-7 cells
- Measured the apoptotic effect of dieckol in Huh-7 cancer cells was assessed by DAPI staining, DNA fragmentation assay
- Cell cycle analysis done by FACS analysis between control and different treatment groups in cancer cells
- To studied the role JAK/STAT-3 signalling pathways in dieckol-treated hepatocellular carcinoma cells

Nephrotoxicity study and Experimental Therapeutics (2009-2012)

Projects Details:

- Rats were induced vancomycin induced nephrotoxicity
- Screened the active pharmaceutical effective compounds
- Treatment with active compounds (gallic acid) orally for 21 days after treatment with vancomycin.
- Prepared blood (plasma and serum), tissue samples for various biochemical estimation.
- Histopathology study conduct for identified tissue morphological changes between the experimental animals.
- Immunohistochemical analyses have done for inflammatory markers.
- Output of this project published in two international journals and presented this project output in various conferences.

TECHNICAL SKILLS

- Handled Animals (rat, mice, and hamsters) for my M.Phil and Ph.D.
- Imaging with confocal and regular zeiss fluorescence microscope.
- Minor surgical skills in rat and mice.
- Maintained Aseptic environment in the animal handling area.
- Experience in tumor induction and chemoprevention protocols in experimental
- Handled mice and rats individually to treat drugs via oral gavage, intraperitoneal and subcutaneous injection to mice
- Blood and tissue collection from rats and mice
- Skills in ELISA, Semi/auto analyser and calorimetry techniques for various biochemical parameters estimation.

- Familiar with molecular biology techniques like Immunohistochemistry, PCR, western blotting, gel documentation system etc.
- Experience in Cancer cell lines maintenance.
- Experience in bacterial cultures.
- Knowledge about using *in vitro* knockdown by using transfection reagent and siRNA.
- Working knowledge use of MS office application, SPSS, Graph pad and cosinor win etc.,

ORAL AND POSTER PRESENTATION AT SYMPOSIUM AND CONFERENCES

- National conference on innovations, Implementations and controversies of animal biotechnology (NCIICAB – 2014) held on 20-21 March, 2014 at Bharathidasan University.
- National conference on “Aquatic animal health and management – 2012(NCAHM-2012) held on 14 and 15 September 2012 at Annamalai University.
- International Conference on “Natural product and Biomedical technology (ICNPBT-2011)” on 10-12 January, 2011 at Annamalai University.
- “XXII National Symposium on Chronobiology” held on 15-17 March, 2011 at Kurukshetra University.
- National conference on “Recent trends in phototherapy and Research” The 21st Annual meeting of the society of biological Chemists (India) Annamalai nagar chapter held on 5th March 2011 at Annamalai University.
- National level 7th Biological congress on “Biotechnology: Evolution and Revolution” from 4 and 5 January 2008 at Muthayammal College of arts and science, Rasipuram.
- National level 6th Biological congress on “Biotechnology: Past, Present and Future” from 5 and 6 January 2007 at Muthayammal College of arts and science, Rasipuram.
- 5th National level Biological congress on Biotechnology: “A Global perspective”, from 6 and 7 January 2006 at Muthayammal College of arts and science, Rasipuram.
- National seminar on “Human perspectives of Biotechnology”, from 11 and 12 February, 2006 at Mahindra Arts and Science College, Namakkal.

WORKSHOP/TRAINING ATTENDED

- MHRD sponsored “National Training on Marine fish parasites and diseases” held on 10-11 March, 2014 at Centre of advanced study in Marine Biology, Annamalai University.
- MHRD sponsored National workshop on “Recent techniques in marine fish immunology” held on 01-02 March, 2014 at Centre of advanced study in Marine Biology, Annamalai University.
- National Workshop on “Academy – industry meet to upgrade Herbal medicine” (AIMHM- 2011) held on 8th August, 2011 in Annamalai University.
- National workshop on “Vermi composed and panchakavya making and training” 26 July, 2005 at Sri Pushpam College, poondi, Thanjavur.

TEACHING EXPERIENCE

- Monthly journal club presentation and weekly lab meetings to discuss relevant research papers to collaborating lab people, supervisor, and summer students.
- Practical classes conduct to M.Sc Biotechnology students (2012 – 2017), Department of Marine Biotechnology, Centre for Advanced Study in Marine Biology, Annamalai University, Tamilnadu, India.
- Guided- M.Sc students on their dissertation during my PhD programme.

MEMBERSHIPS

- Society for Biological Chemist (SBC), India

REFERENCES

Dr. S. Ravichandran, M.Sc., M.Phil., Ph.D (Ph.D Supervisor)

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CAS in Marine Biology,
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Dr. T. Manivasagam, M.SC., M.Phil., Ph. D

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Declaration

I certify the above details given by me are true to the best of my knowledge.



Sadeeshkumar

Ph.D RESEARCH SUMMARY

A study was carried out to assess the protective role of dieckol (phlorotannins) on *N*-nitrosodiethylamine induced hepatocarcinogenesis in male albino Wistar rats. Dieckol is one of the found in marine brown algae fund in *Ecklonia cava*. Hepatocellular carcinoma (HCC) was induced in rats with *N*- Nitrosodiethylamine through drinking water for 15 weeks. The effect of dieckol on NDEA induced hepatocarcinogenesis in rats was investigated by analyzing the liver markers (AST, ALT,ALP,GGT, LDH and Total Biluribin), tumor marker (CEA and AFP), liver histology, ultrastructural studies (TEM), xenobiotic-metabolizing enzymes (Cytochrome P450 and GST), cellular redox status (TBARS, LOOH, SOD, CAT, GPx, GSH, vitamin C and vitamin E), cell proliferation (PCNA) and apoptosis (p53, Bcl-2, Bax, caspase and Cytochrome-c) and also evaluated the influence of dieckol on liver marker enzymes, lipid peroxidation and antioxidant rhythms was investigated. In addition we investigated the cell cycle (G0/G1, G2/M phase) and apoptotic effects of Dieckol against human hepatocellular carcinoma Huh-7 cells (*in vitro*).

Our findings may indicate that dieckol inhibit hepatocarcinogenesis through modulation of XMEs, inhibition of cell proliferation, cell cycle arrest, induction of apoptosis, inhibition of inflammation (COX-2 and NF-κB), invasion, metastasis (MMP-2 and MMP-9) and angiogenesis (VEGF). In conclusion, the *in vitro* and *in vivo* data examined in our study strongly suggest that dieckol is a promising candidate in the development of chemopreventive strategies to lower the burden of human liver cancer.

Reference Letter-1



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Date: 27/10/15

TESTIMONIAL

It gives me a great pleasure to write this letter on behalf of **Dr. Sadeeshkumar Velayutham**, who has been as research scholar for the past 3 years (2012-2015) under my guidance. He join under me for his Ph.D program in 2012 and he has submitted his Ph.D thesis entitled "**Inhibitory effects of Dieckol on N-Nitrosodiethylamine induced Hepatocarcinogenesis in rats**" on 15.10.2014 and awarded Doctoral degree for the same on 16.10.2015. During his period he has been worked as technical research assistant on the Department of Science & Technology PURSE. Dr. V. Sadeeshkumar has sound knowledge and experimental skills in Biochemistry, cancer biology molecular biology and pharmacology. He has also worked on chronotherapeutic and chronopharmacology research programme along with his senior colleagues. He carried out a number of interesting projects and he was also exposed to a number of techniques like RT-PCR, Western blot, Immunohistochemistry, Immunocytochemistry and Cell culture techniques. His potential for research is amply demonstrated by publications in peer-reviewed reputed journals. He has actively participated and presented more than ten papers in National and International conferences. He has also attended several workshops during his research tenure. He was an active member of society of Biochemical Chemists, India, Annamalainagar chapter.

I have found him very hardworking, an efficient and highly talented student with the aptitude to be a proficient researcher. His execution of experiments when he works independently is neat and precise. His innate skill for research is evident from his curiosity to know new things, hardworking and intelligence. I have also found him to be a quick thinker with the ability to pick up new skills rapidly. Moreover, he is a person of high ethical and moral values. He maintains a very good rapport with his junior and senior colleagues. I strongly recommend him for any position which calls for hard work, sincerity and innovation.

I wish him all the very best with all of his future careers plans.



(S. RAVICHANDRAN)

Dr.S.RAVICHANDRAN, Ph.D.,
Principal Investigator & Senior Lecturer
C.A.S in Marine Biology
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Reference Letter-2



Dr. A. JUSTIN THENMOZHI, M.Sc., M.Phil., Ph.D

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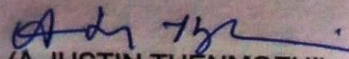
TO WHOMSOEVER IT MAY CONCERN

I have great pleasure in giving this testimonial in favor of **Dr. V. Sadeeshkumar** personally know him for the past four years. He has submitted his Ph.D., in Marine Biotechnology. The title of the Ph.D thesis is "**Inhibitory effects of Dieckol on N-nitrosodiethylamine induced Hepatocarcinogenesis in rats**". I record my deep appreciation to him for his keen interest in studies, motivation and positive outlook.

Dr. V. Sadeeshkumar is a hardworking and sincere scholar and is an excellent researcher who has the ability to undertake both painstaking field works as well as studious laboratory research. He has five years of research experience in the field of microbiology, biotechnology and Marine biology. He has also participated in training/workshops/conferences and he published his results in peer reviewed journals.

Above facts speaks eloquently about the knowledge, academic and research skills and his ability to do any work with diligence besides his potentials to be an excellent member in any team assignment. I am sure that he will prove worthy of himself of any assignment given to him. I therefore, strongly recommend him for any position related to teaching and research in Microbiology, Biotechnology and marine biology.

He bears excellent character and Conduct. I wish him all success in his endeavors.


(A.JUSTIN THENMOZHI)

Dr.A.JUSTIN THENMOZHI
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DEPARTMENT OF BIOCHEMISTRY
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ANNAMALAI UNIVERSITY,
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Reference Letter-3

ANNAMALAI UNIVERSITY



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I am writing this letter to give my highest possible recommendation to **Dr. V. Sadeeshkumar** for any position. First, he is extremely bright and creative. I know him since, 2010 when he joined as an M.Phil., Scholar in the Department and he completed in 2012. Subsequently he joined for his Ph.D programme and awarded Doctoral degree for the same on 2016. For more than 4.5 years, I have close experience to watch his research skills and talents and he is very much enthusiastic, motivated and punctual which was reflected by his appearance to our first meeting thirty minutes before the appointment time. He published his results in peer reviewed journals and moreover, he handled manuscripts revisions very well. During his research work, he presented his findings in both national and international meetings. He have interpersonal skills were excellent and he maintains a smooth and close relationship with everyone. He also volunteers to help others in my lab such as manuscript writing, generating and maintaining official documents and he even tries to complete others work in time.

Dr. V. Sadeeshkumar is very much interested in organizing conferences/seminars and he is always good team worker and maintains cordial relationship with his colleagues. He is distinguished himself as an individual who shows an organized scientific approach to research and with high degree of motivation, innovation and initiative, can accomplish his goals. I give Dr. V. Sadeeshkumar my highest recommendation and I believe he would be an outstanding research in your laboratory.

I wish him all the very best with all of his future endeavors

T. Manivasagam
(T.Manivasagam)

Dr. T. MANIVASAGAM

ASSISTANT PROFESSOR

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