

DR. SHOBA NARAYAN

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Qualifications:

Ph.D.: 2008, Department of Biochemistry, University of Madras

M.Phil: 2002, Department of Biochemistry, University of Madras

Research Interests:

Nanomedicine, Biochemistry, Targeted Drug Delivery, Natural Product Therapeutics, Multifunctional Nanostructures

Post-Doc / Work Experience:

- 1) 2014 Present: Assistant Professor, CARE
- 2) 2011 2014: FASTTRACK DST Young Scientist, Indian Institute of Technology, Madras
- 3) 2008 2009: Postdoctoral Trainee, University of Oklahoma, USA

Extramural projects ongoing/completed

- *Senior Research Fellow, Antiulcer activity of Pterocarpussantalinus (red sandal wood) on experimental gastric ulcer- an in vivo and in vitro study, ICMR*
- *Young Scientist, Chemical strategies for conjugating fluorescent labeled VEGFR targeting peptides to Au NPs approach in molecular sensing and killing of cancer cells, DST*
- *Co-PI, : Design & development of multifunctional Au nanostructures using cell free extract of Candida parapsilosis ATCC 7330, DAE-BRNS*

Research Guidance

Ph.D.:Co-Guide: 1; Guide: 1

M.Sc.:5

UG:2

Summary of Research:

Papers	17	Cites/paper	9.14	h-index	5	AWCR	-
Citations	128	Cites/author	8.3	g-index	-	AW-index	-
Years	12	Papers/author	-	hc-index	-	AWCRpA	-
Cites/year	0.08	Authors/paper	2.4	hl-index	-	e-index	-

Patents Filed:

1	A method and process for the efficacy enhancement of activities of Bioflavonoids.	201741001089	R. Satish, Shoba Narayan ,P Surajit, L. Lizha Mary
2	Polymeric matrix containing metal doped ceramic for tissue engineering	201741001091	Moorthi A, Shoba Narayan ,Azeena S,Srinivasan N,Murugesan R
3	A method and development of a nanoscaffold for delivery of agents for stem cell differentiation	201741001087	Shoba Narayan ,P. Surajit,Rachel Karena,Moorthi A,Sinivasan N,Murugesan R

Publications:

1. L. Mary Lazer, B. Sadhasivam, K. Palaniyandi, T. Muthuswamy, I. Ramachandran, A. Balakrishnan, S. Pathak, S. Narayan, S. Ramalingam, Chitosan-based nano-formulation enhances the anticancer efficacy of hesperetin, International journal of biological macromolecules. (2017) (in press).
2. M. Vedhanayagam, M. Nidhin, N. Duraipandy, N. D. Naresh, G. Jaganathan, M. Ranganathan, M. S. Kiran, **S. Narayan**, B. U. Nair, K. J. Sreeram. Role of nanoparticle size in self-assemble processes of collagen for tissue engineering application. International Journal of Biological Macromolecules. 2017;99:655-64.
3. S. Azeena, N. Subhapradha, N. Selvamurugan, **S. Narayan**, N. Srinivasan, R. Murugesan, T. W. Chung, A. Moorthi. Antibacterial activity of agricultural waste derived wollastonite doped with copper for bone tissue engineering. Materials Science & Engineering C-Materials for Biological Applications. 2017;71:1156-65.
4. S. Venkataraman, **S. Narayan**, A. Chadha. Direct observation of redox reactions in Candida parapsilosis ATCC 7330 by Confocal microscopic studies. Scientific Reports. 2016;6.
5. S. Krishnan, **S. Narayan**, A. Chadha. Whole resting cells vs. cell free extracts of Candida parapsilosis ATCC 7330 for the synthesis of gold nanoparticles. Amb Express. 2016;6.
6. **S. Narayan**, A. Rajagopalan, J. S. Reddy, A. Chadha. BSA binding to silica capped gold nanostructures: effect of surface cap and conjugation design on nanostructure-BSA interface. Rsc Advances. 2014;4(3):1412-20.
7. K. J. Sreeram, **S. Narayan**, G. Abbineni, A. Hayhurst, C. Mao. Architectonics of Phage-Liposome Nanowebs as Optimized Photosensitizer Vehicles for Photodynamic Cancer Therapy. Molecular Cancer Therapeutics. 2010;9(9):2524-35.
8. S. Prabhu, **S. Narayan**, C. S. S. Devi. Mechanism of Protective Action of Mangiferin on Suppression of Inflammatory Response and Lysosomal Instability in Rat Model of Myocardial Infarction. Phytotherapy Research. 2009;23(6):756-60.
9. P. Srinivasan, S. Suchalatha, P. V. A. Babu, R. S. Devi, **S. Narayan**, K. E. Sabitha, C. S. S. Devi. Chemopreventive and therapeutic modulation of green tea polyphenols on drug metabolizing enzymes in 4-Nitroquinoline 1-oxide induced oral cancer. Chemico-Biological Interactions. 2008;172(3):224-34.
10. **S. Narayan**, M. Veeraraghavan, C. S. S. Devi. Pterocarpussantalinus: An in vitro study on its anti-Helicobacter pylori effect. Phytotherapy Research. 2007;21(2):190-3.
11. **S. Narayan**, R. S. Devi, V. Ganapathi, C. S. S. Devi. Effect of Pterocarpussantalinus extract on the gastric pathology elicited by a hypertensive drug in Wistar rats. Pharmaceutical Biology. 2007;45(6):468-74.

12. **S. Narayan**, R. S. Devi, C. S. S. Devi. Role of *Pterocarpussantalinus* against mitochondrial dysfunction and membrane lipid changes induced by ulcerogens in rat gastric mucosa. *Chemico-Biological Interactions*. 2007;170(2):67-75.
13. R. S. Devi, **S. Narayan**, G. Vani, P. Srinivasan, K. V. Mohan, K. E. Sabitha, C. S. S. Devi. Ulcer protective effect of *Terminaliaarjuna* on gastric mucosal defensive mechanism in experimental rats. *Phytotherapy Research*. 2007;21(8):762-7.
14. R. S. Devi, **S. Narayan**, G. Vani, C. S. S. Devi. Gastroprotective effect of *Terminaliaarjuna* bark on diclofenac sodium induced gastric ulcer. *Chemico-Biological Interactions*. 2007;167(1):71-83.
15. **S. Narayan**, R. S. Devi, P. Srinivasan, C. S. S. Devi. *Pterocarpussantalinus*: A traditional herbal drug as a protectant against ibuprofen induced gastric ulcers. *Phytotherapy Research*. 2005;19(11):958-62.
16. **S. Narayan**, R. S. Devi, M. Jainu, K. E. Sabitha, C. S. S. Devi. Protective effect of a polyherbal drug, ambrex in ethanol-induced gastric mucosal lesions in experimental rats. *Indian Journal of Pharmacology*. 2004;36(1):34.
17. R. S. Devi, **S. Narayan**, K. Vijai Mohan, K. E. Sabitha, C. S. S. Devi. Effect of a polyherbal formulation, Ambrex, on butylatedhydroxy toluene (BHT) induced toxicity in rats. *Indian Journal of Experimental Biology*. 2003;41(11).

Conference / Workshop / Invited Lecture / Resource person / Seminar / :

- [1] Antiulcerogenic effect of ambrex, Apolyherbal formulation in experimental gastric ulcer in rats. Second national siddha conference, July 27-28, 2002.
- [2] Evaluation of possible mechanism of antiulcer activity of ambrex, a herbal preparation. XXIII annual conference of Indian association of biomedical scientists, IABMS, October 4-6, 2002
- [3] Role of gastric antioxidants in antiulcerogenic activity of *Pterocarpussantalinus* against ethanol induced ulcer model. International conference on natural products, free radicals and radioprotectors in health (NFRH 2004), January 17-19, 2004.
- [4] Antiulcer effect of *Terminaliaarjuna* in experimental rats. R.S. Devi, International conference on natural products, free radicals and radioprotectors in health (NFRH 2004), January 17-19, 2004.
- [5] *Pterocarpussantalinus* Its antiperoxidative role during NaCl enhanced N-methyl-N-nitro-N-nitrosoguanidine induced gastric cancer. Indo-Australian conference on biotechnology in medicine, February 9-11, 2004.
- [6] Antidiarrhoeal activity of *Terminaliaarjuna* bark in rats. Indo-Australian conference on biotechnology in medicine, February 9-11, 2004.
- [7] Study of *Pterocarpussantalinus* in experimental gastritis. Indo-Australian conference on biotechnology in infectious diseases, March 1-3, 2005.
- [8] Ulcer healing property of *Terminaliaarjuna* against diclofenac sodium induced gastric ulcer in rats. Indo-Australian conference on biotechnology in infectious diseases, March 1-3, 2005.
- [9] Effect of *Terminaliaarjuna* on deexamethasone induced gastric ulcer in experimental rats. International conference on drug development from medicinal plants Issues and problems, October 20-22, 2005
- [10] *Pterocarpussantalinus*: A traditional herbal drug in the protection against reserpine induced gastric ulcers. International conference on drug development from medicinal plants Issues and problems, October 20-22, 2005
- [11] Effect of *Terminaliaarjuna* in aspirin induced gastric ulcerated rats. ASPUM International Symposium on Science in New Millennium, June 12-13, 2006.
- [12] Liposome-phage mediated delivery of zinc naphthalocyanines for photodynamic therapy, Oklahoma EPSCoR Annual State Conference, March 31-April 1, 2009.
- [13] Workshop on sequence Analysis and Molecular Simulation, Sponsored by the Department of Biotechnology, Government of India, NewDelhi, Conducted by Centre for Biotechnology, Anna University, Chennai 14th 17th December 2011.
- [14] Designing probes for molecular sensing: Spectroscopic studies on the specific and non-specific-crosslinking of gold nanoparticles to a model protein 4TH International Conference on Advanced Materials, October 17 19(2012), Chennai, India.
- [15] Double Edged Sword Designing Gold Nanorods Functionalized with KDR - Binding Peptides for Effective Blocking of Angiogenesis and Photothermal Therapy. Third International Conference on Multifunctional, Hybrid and Nanomaterials, March 3 7(2013), Sorrento, Italy.
- [16] Advances in NanoBiotechnology: Opportunities for Green Chemistry Dr M.G.R Educational and Research Institute, Department of Biotechnology, BIOZONE (Biotech Fest) 26 & 27 August 2013. **Invited talk**
- [17] Mechanistic understanding of the role of anisotropy in binding of nanoparticles to targeting peptides of vascular endothelial growth factor receptors, NanoSciTech 2014, Feb 13-15 (2014), Chandigarh, India.
- [18] Workshop on *in vivo* small animal optical imaging, CRL, CARE, 14 Mar 2016
- [19] 3T-IBHSc Training course in bioethics training for health professionals of health science universities, UNESCO, 28-30 Apr 16. International conference at CARE.
- [20] A novel design of hesperetin encapsulated chitosan-folate nanoparticle for colon cancer therapy. National seminar on advanced biomaterials and applications, 15 February, 2017, Chennai
- [21] Polycaprolactone polymeric composite reinforced with copper doped wollastonite for bone tissue engineering. National seminar on advanced biomaterials and applications, 15 February, 2017, Chennai
- [22] Studies on Li₂CO₃ loaded chitosan nanoparticles: With potential application for enhanced drug efficacy. International conference on frontiers in nanoscience and nanotechnology, February 27 and 28, Thanjavur
- [23] Amalgamating the Science of Small with the Science of Teeth: A Case of Nanotechnology for Dentistry National Seminar on Nano Medicine: Pharmacology and Toxicology, 24.03.2017- 25.03.2017, Chennai, University of Madras. **Invited talk**
- [24] Two Days National Workshop on Cellular & Molecular Diagnostics (organized), 10.02.2017-11.02.2017, CARE
- [25] Two Days Workshop on Nanotechnology for Dental Application (organized), 11.04.2017-12.04.2017, CARE, CHRI.
- [26] Nanocomposite Drug Carriers for Increasing Efficacy of Treatment of Oral Cancer 2nd International Conference on Novel Approaches in Cancer Research & Therapy (NACRAT-2017, 27.06.2017-28.06.2017, Saveetha Dental College, Chennai

- [27] SERB Sponsored National Conference on Nanotechnology in Medicine (Organising Secretary),(08&09.09. 2017), CARE, CHRI
- [28] Enlarging the scope of nanomedicine: Evaluating the benefits of carriers ranging from bacteriophages to peptides SERB Sponsored National Conference on Nanotechnology in Medicine,(08&09.09. 2017), CARE, CHRI (Invited Talk)
- [29] A nanotech approach to treatment of bipolar disorders SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [30] Chlorogenic acid loaded nanocomposites as a restorative material for dental applications SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [31] A promising future in dentistry- exploiting the advances in nanoscience: a review SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [32] A concept on mapping the mind with nanotechnology and its potential for depression management SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [33] Mesoporus silica nanoparticles for targeting, sensing and imaging SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [34] Surface enhanced resonance spectroscopy: gold nanostar based detection of forensic genomic DNA SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [35] ATWLPPR conjugated PAMAM coated anisotropic nanoparticles for targeting and selective photothermal therapy SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [36] Silver nanoparticles embedded collagen- dendrimer matrix for dental applications SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [37] Gold nanoparticle incorporated chitosan/collagen conductive matrix for cardiac tissue engineering SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [38] Evaluation of paper fluidics for detection of salivary biomarkers in patients with dental caries SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [39] Tailorable hydrogels for tissue engineering and regenerative medicine: A Review SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [40] Evaluation of paper fluidics for detection of salivary biomarkers in patients with dental caries SERB Sponsored National Conference on Nanotechnology in Medicine, (08&09.09. 2017), CARE, CHRI
- [41] Systematic study for the safe and efficient use of biopolymers coated lithium carbonate loaded nanoparticles for bipolar disorder management International conference on Nanoscience and Nanotechnology, (9 11. 08. 2017),SRM University, Kattankulathur.
- [42] Material characteristics of nanostructures from different stoichiometric ratio of mineral/ biopolymer composite/gel for dental applications
- [43] Drug Entrapped Nanofibrous Electrospun Scaffolds for Cardiomyocyte Differentiation of Stem Cells International conference on Nanoscience and Nanotechnology, (9 11. 08. 2017),SRM University, Kattankulathur.
- [44] Cellular uptake of lithium carbonate loaded biopolymeric nanoparticles for neuropsychiatric disorder management Nanoscitech(9 & 10. 10. 17),Panjab University Chandigarh
- [45] Collagen Based Nanocomposites As Potential Biomimetic Material For Dental Applications Nanoscitech(9 & 10. 10. 17),Panjab University Chandigarh