

CURRICULUM VITAE

Dr. Nagaraj Nagathihalli

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Nashville, TN 37209-5233 USA
CITIZENSHIP : INDIA
VISA : Permanent Resident (USA)
DATE OF BIRTH : 18th May, 1974

EDUCATION:

1997-2002 **Ph.D. (Biochemistry)**
Defense Food Research laboratory (DRDO lab)
University of Mysore, India
1994-1996 **M.S. (Biochemistry)**
University of Mysore, India
1991-1994 **B.S. (Chemistry, Botany, Zoology)**
University of Mysore, India

ACADEMIC APPOINTMENTS

2007-present Research Instructor, Department of Surgery, Division of Surgical Oncology, Vanderbilt University School of Medicine, Nashville, TN, USA
2003-2007 Postdoctoral Research Associate, Department of Medicine/ James Graham Brown Cancer Center, University of Louisville School of Medicine, Louisville, KY, USA
2002-2003 Postdoctoral Research Associate, Department of Biochemistry and Molecular Biology, University of Louisville School of Medicine, Louisville, KY, USA
2000-2001 Senior Research Fellow, Department of Biochemistry and Nutrition, Defense Food Research Laboratory, DRDO, Ministry of Defense, Govt. of India, India
1997-2000 Junior Research Fellow, Department of Biochemistry and Nutrition, Defense Food Research Laboratory, DRDO, Ministry of Defense, Govt. of India, India
1996-1997 Project Assistant, Department of Plantation Products, Spices and Flavor Technology, Central Food Technological Research Institute, India

AWARDS AND HONORS

- 2010 Hind Rattan Award, NRI Welfare Society, New Delhi, India (selected)
- 2010 Proposed Faculty, Cancercon 2010, International Conference in Cancer Biology: Molecular Mechanisms and Novel Therapeutics, IIT-Madras, Chennai, India
- 2006 Scholarship to attend American Institute for Cancer Research /World Cancer Research Fund “International Research Conference on Food, Nutrition and Cancer”, Washington, DC, USA.
- 2004 Ed Nelson Research Award for the best poster presentation, The International Society for the Prevention of Tobacco Induced Diseases (ISPTID) Annual Meeting, Louisville, KY, USA.
- 2003-2004 Postdoctoral Fellowship from James Graham Brown Cancer Center, University of Louisville School of Medicine, KY, USA.
- 2003 Best poster award (Second prize) in the area of Nutrition, International Food Convention (IFCON), India
- 2002 Best paper award, Defense laboratories, Ministry of Defense, Govt. of India, India
- 2000-2001 Senior Research Fellowship from Defense Research & Development Organization, Ministry of Defense, Govt. of India, India
- 2000 Best poster award (First prize) in the area of Nutrition during Indian Convention of Food Scientists and Technologists, India
- 2000 Best poster award (First prize) in the area of Biochemistry and Analytical methods during Indian Convention of Food Scientists and Technologists, India.
- 1997-2000 Junior Research Fellowship from Defense Research & Development Organization, Ministry of Defense, Govt. of India, India

HONORARY MENTION

- 2010 Cited by “Who’s Who in America” Marquis Who’s Who, 64th Edition
- 2010 Cited by “Who’s Who in the World” Marquis Who’s Who, 27th Edition
- 2009 Cited by “Who’s Who in America” Marquis Who’s Who, 63rd Edition
- 2009 Cited by “Who’s Who in the World” Marquis Who’s Who, 26th Edition
- 2008-2009 Cited by “Who’s Who in Science and Engineering” Marquis Who’s Who, 10th Edition.

PROFESSIONAL ACTIVITIES

- Managing Editor, Nutrition Journal
- Associate Editor, Annual Review of Biomedical Sciences
- Associate Editor, American Journal of Biochemistry and Biotechnology
- Associate Editor, Internet Journal of Oncology
- Technical Editor, International Journal of Cancer Research
- Member, Editorial Board, International Journal of Biological Sciences
- Member, Editorial Board, International Journal of Toxicology
- Member, Editorial Board, Journal of Cancer Research and Therapeutics

Member, Scientific Advisory Board, Austral-Asian Journal of Cancer
Member, Editorial Board, Asian Journal of Clinical Nutrition
Member, Scientific Advisory Board, International Journal of Tourism and Travel Health, Australia and India

SCIENTIFIC JOURNAL REVIEWER

PLOS Computational Biology; Clinical Nutrition; Nutrition & Metabolism; Oral Oncology
IUBMB Life; Integrative Cancer Therapies; Journal of Food Biochemistry; Plant Foods for Human Nutrition; Food and Chemical Toxicology

MEMBERSHIP IN PROFESSIONAL / SCIENTIFIC ORGANIZATIONS

American Society for Biochemistry and Molecular Biology
American Association for Cancer Research (Active Member)
American Society for Nutrition (Full Member)
Sigma XI, The Scientific Research Society
American Association of Indian Scientists in Cancer Research (AAISCR)

PATENTS

1. K.R.Anilakumar, **N.S.Nagaraj** and K.Santhanam (2001). A herbal composition to arrest rancidity in poultry meat and a process for preparation thereof. Indian Patent, ERIP/IP/0001033/M/01.

PUBLICATIONS

a. Peer Reviewed Research Articles in Journals:

1. **N.S. Nagaraj**, J.J. Smith, F. Revetta, M.K. Washington and N.B. Merchant. Targeted inhibition of Src kinase signaling attenuates pancreatic tumorigenesis (in review).
2. **N.S. Nagaraj**, and P.K. Datta (2009). Targeting the Transforming Growth Factor- β Signaling Pathway in Human Cancer. *Expert Opinion on Investigational Drugs*, 19(1), 77-91.
3. **N.S. Nagaraj***, K.R. Anilakumar and O.V. Singh (2009). Diallyl disulfide causes a caspase-dependent apoptosis in human cancer cells through a Bax-triggered mitochondrial pathway, *Journal of Nutritional Biochemistry*, May 6 (published online). (* **corresponding author**)
4. **N.S. Nagaraj*** (2009). Evolving 'omics' technologies for diagnostics of head and neck cancer. *Briefings in Functional Genomics & Proteomics*, 8(1), 49-59. (* **corresponding author**)
5. **N.S. Nagaraj*** and O.V. Singh (2009). Integrating Genomics and Proteomics oriented Biomarkers to Comprehend Lung Cancer. *Expert Opinion on Medical Diagnostics*, 3(2), 167-180. (* **corresponding author**)
6. **N.S.Nagaraj** and W. Zacharias (2007). Cigarette smoke condensate increases cathepsin-mediated invasiveness of oral carcinoma cells. *Toxicology Letters*, 170, 134-145.
7. **N.S. Nagaraj**, and W. Zacharias (2007). Cathepsin Regulated Cell Death Pathways: Lysosomes as Targets for Cancer Therapy. *Cell Apoptosis and Cancer*, Nova Science Publishers Inc., 155-180, New York.

8. **N.S.Nagaraj**, N. Vigneswaran and W. Zacharias (2007). Hypoxia-inhibits TRAIL induced apoptosis: involvement of lysosomal cathepsins. *Apoptosis*, 12(1), 125-139.
9. **N.S. Nagaraj**, S. Beckers, J. Mensah, S. Waigel, N. Vigneswaran and W. Zacharias (2006). Cigarette smoke condensate induces cytochromes P450 and aldo-keto reductases in oral cancer cells. *Toxicology Letters*, 165(2), 182-194.
10. **N.S. Nagaraj*** and K.Santhanam (2006). The effects of muscle proteases, endogenous protease inhibitors and myofibril fragmentation on postmortem aging of goat meat. *J Food Biochem.* 30(3), 269-291. (* **corresponding author**)
11. **N.S. Nagaraj***, K.R.Anilakumar and K.Santhanam (2006). Biochemical and physicochemical changes of goat meat during ageing. *J Muscle Foods*, 17 (2), 198-213. (* **corresponding author**)
12. **N.S. Nagaraj*** and K. Santhanam (2006). Effect of frozen temperature and storage time on calpains, cathepsins (B, B+L, H and D) and their endogenous inhibitors in goat muscles. *J Food Biochem.* 30(2), 155-173. (* **corresponding author**)
13. O.V. Singh and **N.S. Nagaraj** (2006). Transcriptomics, Proteomics and Interactomics: unique approaches to track the insights of bioremediation. *Briefings in Functional Genomics & Proteomics*, 4(4), 355-362.
14. **N.S. Nagaraj**, N. Vigneswaran and W. Zacharias. (2006). Cathepsin B mediates TRAIL-induced apoptosis in oral cancer cells. *J Cancer Research Clinical Oncology.* 132 (3), 171-183.
15. N. Vigneswaran, J. Wu, **N. Nagaraj**, R. James, P. Zeeuwen and W. Zacharias (2006). Silencing of Cystatin M in oral cancer cells by siRNA increases their cysteine protease activities, cell proliferation and *in vitro* invasion. *Life Sciences*, 78(8), 898-907.
16. N.S. Wickramasinghe*, K. Banerjee*, **N.S. Nagaraj***, N. Vigneswaran and W. Zacharias (2005). [* contributed equally to the manuscript]. Hypoxia alters cathepsin B/ inhibitor profiles in oral carcinoma cell lines. *Anticancer Research*, 25(4), 2841-2849.
17. N.S. Wickramasinghe, **N.S. Nagaraj**, N. Vigneswaran and W. Zacharias (2005). Cathepsin B promotes both motility and invasiveness of oral carcinoma cells. *Arch. Biochem Biophys*, 436, 187-195.
18. **N.S. Nagaraj***, K.R.Anilakumar and K.Santhanam (2005). *Post-mortem* changes in myofibrillar proteins of goat skeletal muscles. *J Food Biochem*, 29(2), 152-170.
19. N. Vigneswaran, J. Wu, **N. Nagaraj**, K. Storthz, and W. Zacharias (2005). Differential susceptibility of metastatic and primary oral cancer cells to TRAIL-induced apoptosis. *Int. J. Oncol.*, 26(1), 103-112.
20. **N.S. Nagaraj**, N. Vigneswaran and W. Zacharias (2004). Hypoxia-mediated apoptosis in oral carcinoma cells occurs *via* two independent pathways. *Molecular Cancer.* 3 (38), 1-14.
21. K.R.Anilakumar, **N.S. Nagaraj** and K.Santhanam (2004). Protective effect of amla on oxidative stress and cytotoxicity in rats challenged with dimethyl hydrazine. *Nutrition Res.* 24(4), 313-319.
22. K.R.Anilakumar, **N.S. Nagaraj**, N.N.Prasad and K.Jeevaratnam (2003). Changes in fatty acid composition of some processed ration on storage. *The Indian Journal of Nutrition and Dietetics.* 40, 168-173.
23. **N.S. Nagaraj**, K.R.Anilakumar and K.Santhanam (2002). Changes in the calpain-calpastatin and cathepsin (B, B+L, H and D) during post-mortem storage of goat muscles. *J Food Biochem*, 26(1), 75-89.

24. K.R.Anilakumar, **N.S. Nagaraj** and K.Santhanam. (2001). Effect of coriander seeds on hexachloro cyclohexane induced lipid peroxidation in rat liver. *Nutrition Res.* 21(11), 1455-1462.
25. **N.S. Nagaraj**, K.R.Anilakumar and K.Santhanam (2001). Effect of temperature on myofibril fragmentation during postmortem storage of muscle. *J Food Sc Tech*, 38(1), 55-56.

b. Book chapters / Reviews (by invitation)

1. **N.S. Nagaraj**, and P.K. Datta (2009). Targeting the Transforming Growth Factor- β Signaling Pathway in Human Cancer. *Expert Opinion on Investigational Drugs*, 19(1), 77-91.
2. **N.S. Nagaraj*** (2009). Evolving ‘omics’ technologies for diagnostics of head and neck cancer. *Briefings in Functional Genomics & Proteomics*, 8(1), 49-59. (* **corresponding author**)
3. **N.S. Nagaraj*** and O.V. Singh (2009). Integrating Genomics and Proteomics oriented Biomarkers to Comprehend Lung Cancer. *Expert Opinion on Medical Diagnostics*, 3(2), 167-180. (* **corresponding author**)
4. **N.S. Nagaraj**, and W. Zacharias (2007). Cathepsin Regulated Cell Death Pathways: Lysosomes as Targets for Cancer Therapy. *Cell Apoptosis and Cancer*, Nova Science Publishers Inc., 155-180, New York.
5. O.V. Singh and **N.S. Nagaraj** (2006). Transcriptomics, Proteomics and Interactomics: unique approaches to track the insights of bioremediation. *Briefings in Functional Genomics & Proteomics*, 4(4), 355-362.

c. Oral presentations:

1. “International Conference in Cancer Biology: Molecular Mechanisms and Novel Therapeutics”, which will be jointly hosted by the Department of Biotechnology, Indian Institute of Technology Madras (IITM) and Cancer Research and Relief Trust (CRRT), Chennai, India. February 18-20th, 2010 (to be presented)
2. Src Kinase Inhibition Restores the E-cadherin/ β -catenin Adhesion System in Human Pancreas Cancer Cells. *Tennessee Chapter of American College of Surgeons Annual Meeting*, Fall Creek Falls, TN, USA. May 2009. First Place Winner, Basic Science Papers Competition.
3. Src kinase inhibition attenuates pancreatic tumorigenesis through inhibition of multiple downstream signaling pathways, 40th Anniversary Meeting of the American Pancreatic Association and Japan Pancreas Society, Hilton Hawaiian Village, Honolulu, HI, USA. November 4-7, 2009.

d. Abstracts:

1. **N.S. Nagaraj**, J. Herndon, N.B. Merchant. Combined blockade of Src kinase and Epidermal Growth Factor Receptor synergistically inhibits growth of pancreas cancer, AACR-EORTC-NCI Molecular Targets and Cancer Therapeutics Conference, Boston, MA, USA. November 16-18, 2009.
2. **N.S. Nagaraj**, K.M. Washington, F. Revetta, N.B. Merchant. Src kinase inhibition attenuates pancreatic tumorigenesis through inhibition of multiple downstream signaling

- pathways, 40th Anniversary Meeting of the American Pancreatic Association and Japan Pancreas Society, Hilton Hawaiian Village, Honolulu, HI, USA. November 4-7, 2009.
3. **N.S. Nagaraj**, A.A. Parikh, N.B. Merchant. Src kinase inhibition restores the E-cadherin/ β -catenin adhesion system in human pancreatic cancer cells. 4th Annual Academic Surgical Congress, Fort Myers, FL, USA. 3-6th Feb 2009.
 4. W. Zacharias, X. Sun, N. Vigneswaran, J. Wu, and **N.S. Nagaraj**. TRAIL-induced lysosomal pathway of apoptosis in oral cancer. 16th Euroconference on Apoptosis - 5th Swiss Conference on Apoptosis; Bern, Switzerland. 6-9th Sept 2008.
 5. **N.S. Nagaraj**, K.R. Anilakumar and O.V. Singh. Anticancer effect and mesenchymal to epithelial conversion by garlic derivative in human tumor cells. American Institute for Cancer Research/ World Cancer Research Fund Launch Conference "Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective", Washington, DC, USA. 1-2nd Nov 2007.
 6. **N.S. Nagaraj**, X. Sun, S. Weigel, W. Zacharias. Gene expression profile changes induced by standard and low-nicotine cigarette smoke condensate in oral tumorigenesis. Annual Meeting, American Association for Cancer Research, Los Angeles, CA. 14-18th Apr 2007.
 7. **N.S. Nagaraj**, N. Vigneswaran and W. Zacharias. Hypoxia inhibits TRAIL-induced tumor cell apoptosis: evidence for lysosomal involvement. Research Louisville Symposium, Louisville, KY, USA, 10-13th Oct 2006.
 8. **N.S. Nagaraj** and W. Zacharias. Cigarette smoke condensate-induced cathepsin B and L increased invasion in oral carcinoma cells. Fifth Annual James Graham Brown Cancer Center Meeting. Louisville, KY, USA, 29th Nov 2006.
 9. J.M. Bumpous, E. Lentsch, S. Brozovic, S. Waigel, **N.S. Nagaraj**, W. Zacharias. Development of new markers for head and neck cancer progression. Fifth Annual James Graham Brown Cancer Center Meeting. Louisville, KY, USA, 29th Nov 2006.
 10. **N.S. Nagaraj** and O.V. Singh (2007). Proteomic and genomic analysis of human tumor cells treated with diallyl disulfide. J. Nutr. 137 (1S), p. 290S, (*Scholarship award*).
 11. **N. Nagaraj**, S. Wellhausen, N. Vigneswaran and W. Zacharias. Hypoxia and TRAIL-induced apoptosis: Involvement of lysosomal proteases. American Association for Cancer Research Special Conference on "Cancer, Proteases, and the Tumor Microenvironment", Bonita Springs, Florida, USA, Page # A47, 30th Nov- 4th Dec 2005.
 12. **N. Nagaraj**, N. Vigneswaran and W. Zacharias (2005). Cathepsin B: a novel target for cell death in oral cancer. Clinical Cancer Research, 11(24), p. 9100s, Abstract # C2.
 13. **N. Nagaraj**, N. Vigneswaran and W. Zacharias. Cathepsin B: a novel pro-apoptotic factor in oral cancer. Fourth Annual James Graham Brown Cancer Center Meeting. Louisville, KY, USA, 24th Sep 2005.
 14. K. Peter, N. Wickramasinghe, **N. Nagaraj**, J. Mensah, S. Becker, S. Waigel and W. Zacharias. Inhibitory RNAs to study cathepsin B functions in oral carcinoma cells. 4th Joint Meeting of the American Association of Clinical Anatomists and the British Association of Clinical Anatomists, July 20-22, New York City, NY, USA, 2005.
 15. J. Mensah, **N. Nagaraj**, N. Vigneswaran and W. Zacharias. Cathepsin B-targeted dicer siRNA inhibits protease expression and activity in oral carcinoma cells. Third Annual James Graham Brown Cancer Center Meeting. Louisville, KY, USA, 23rd Sep 2004.

16. **N.S. Nagaraj**, N. Vigneswaran and W. Zacharias. Hypoxia-mediated apoptosis in oral carcinoma cells occurs via two independent pathways. Research Louisville Symposium, Louisville, KY, USA, 8-12 Nov 2004.
17. **N.S. Nagaraj**, N. Vigneswaran and W. Zacharias (2004). Cigarette Smoke Condensate in Oral Cancer - Apoptosis or Inflammation? Tobacco Induced Diseases (TID) Journal. 2(4), p. 54. Abstract # 36. (*Best poster award- second prize*)
18. **N.S. Nagaraj**, N. Vigneswaran and W. Zacharias (2004). Mechanism of hypoxia-mediated apoptosis in oral carcinoma cells. The FASEB Journal, 18(8), p. 1, Late-breaking Abstract # B343.
19. W. Zacharias, N. Wickramasinghe, K. Banerjee, **N.S. Nagaraj** and N. Vigneswaran. Hypoxia-dependent proliferation and protease expression in oral carcinoma cell lines. Proceedings of the 95th American Association for Cancer Research 2004; Vol. 45, p. 418, Abstract # 1822.
20. K.R. Anilakumar, **N.S. Nagaraj**, K. Jeevaratnam and K. Santhanam. Protective effects of tomato puree against chemically induced toxicity in rats. 5th International Food Convention held at Mysore, India, 5-8 Dec 2003 (*Best poster award-second prize*)
21. **N.S. Nagaraj**, K.R. Anilakumar and K. Santhanam. Effects of aging on myofibrillar biochemical indices of postmortem in goat muscles. Annual meeting of the Nutrition Society of India held at Hyderabad, India, 1-2 Dec 2000.
22. **N.S. Nagaraj**, K.R. Anilakumar and K. Santhanam. Effect of ambient temperature on calpain and cathepsin (B, B+L, H and D) activities of goat muscles during postmortem. Annual meeting of the Nutrition Society of India held at Hyderabad, India, 1-2 Dec 2000.
23. K.R. Anilakumar, **N.S. Nagaraj** and K. Santhanam. Effect of coriander seeds on dimethylhydrazine-induced oxidative stress in rats. Annual meeting of the Nutrition Society of India held at Hyderabad, India, 1-2 Dec 2000.
24. K.R. Anilakumar, **N.S. Nagaraj** and K. Santhanam. Effect of Indian gooseberry on detoxifying enzymes in rats challenged with hexachloro cyclohexane. Annual meeting of the Nutrition Society of India held at Hyderabad, India, 1-2 Dec 2000.
25. K.R. Anilakumar, **N.S. Nagaraj** and K. Santhanam. Effect of coriander seeds on the hexachloro cyclohexane induced oxidative changes, Indian Convention of Food Scientists and Technologists held at Mysore, India, 22-24 Nov 2000. (*Best poster award- First prize*)
26. **N.S. Nagaraj**, K.R. Anilakumar and K. Santhanam. Effect of postmortem aging on myofibrillar degradation and Mg-enhanced ATPase activity in goat muscles. Indian Convention of Food Scientists and Technologists held at Mysore, India, 22-24 Nov 2000.
27. **N.S. Nagaraj**, K.R. Anilakumar and K. Santhanam. Calpain-calpastatin and cathepsin (B, B+L, H and D) activities of goat muscles on post mortem aging, Indian Convention of Food Scientists and Technologists held at Mysore, India, 22-24 Nov 2000. (*Best poster award- First prize*)
28. **N.S. Nagaraj**, K.R. Anilakumar and K. Santhanam. Effect of cathepsin D on the degradation of myofibrillar proteins in goat muscles. Annual meeting of the Society of Biological Chemists held at Bangalore, India, 27-29 Dec 1999.
29. **N.S. Nagaraj**, K.R. Anilakumar and K. Santhanam. Effect of postmortem aging on degradation of protein in goat muscles. 68th Annual meeting of the Society of Biological Chemists held at Bangalore, India, 27-29 Dec 1999.

30. **N.S. Nagaraj**, K.R. Anilakumar and K. Santhanam. Changes in titin and nebulin of goat muscles on postmortem. National Symposium on proteins in biology held at Mysore, India, 15-16 Nov 1999.
31. **N.S. Nagaraj**, K.R. Anilakumar, N. Narayan prasad and K. Santhanam. Changes in fatty acid profile of processed service rations on storage. Annual meeting of the Nutrition Society of India held at Coimbatore, India, 25-26 Nov 1999.
32. **N.S. Nagaraj**, K.R. Anilakumar, K. Viswanathan and K. Santhanam. Myofibrillar protein fragmentation- A comparative study of different animal species. 4th International Food Convention (IFCON) held at Mysore, India, 23-27 Nov 1998.

EXTRA CURRICULAR

Completed National Cadet Corps (NCC) 'A' (Junior Division), 'B' (Senior Division) and 'C' certificate course. Served as an **Under Officer** from 1990-1992. The motto of the NCC is *Unity and Discipline*. Attended Annual Training Camps, National Integration Camps, Army Attachment Camps, Cycle Expedition, Leadership Camps, Trekking and Mountaineering.
<http://nccindia.nic.in>