

Prof. Anjali Rao (UGC Visiting Professor)

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Professional Career

(Professional career over the past years, starting with the latest.)

Period	Years	Organization	Designation	Nature of work / responsibility
July 2012- June 2013	1 year	Melaka Manipal Medical College, (Manipal Campus)	Professor of Biochemistry	Teaching MBBS & Allied Health Sciences students & Research
July 1988 – June 2012	24 years	Kasturba Medical College, Manipal University, Manipal	Professor of Biochemistry	Teaching MBBS, BDS, MDS, B. Pharm., MD & MSc students & Research
July 1986 - July 1988	2 years	-----do-----	Assoc. Professor of Biochemistry	-----do-----
Feb. 1982 - July 1986	4 years & 5 mths.	-----do-----	Reader in Biochemistry	-----do-----
July 1976 – Jan. 1982	5 years & 6 mths	Dept. of Biochemistry, Faculty of Science, BHU, Varanasi. UP	Lecturer in Biochemistry	Teaching MSc (Biochemistry) students & Research

Summary of Research

Total no. of journal publications: 87

Publications in indexed International Journals : 55

Publications in indexed Indian Journals: 32

Chapters in books : 02

PhD students (awarded) – as guide: 8 (1 more student likely to submit by Sept. 2014)

PhD students – as co- guide : 2

MD(Biochemistry) students : 3

- I am currently employed as UGC Visiting Prof. of Biochemistry at Mangalore University (NACC accredited, A Grade) , Mangalore since 25th Aug. 2014.

Social Work

I have been the **principal investigator** for a research project on **‘Menstrual Hygiene Management for rural adolescent school going girls and rural women’**(initially started in May 2009, with the help of Kasturba Medical College seed money along with Dept. of Community Medicine) involving Self Help Group women who were trained to manufacture ‘Sneha’ sanitary napkins. This **ongoing project** is now being supported by the TMA Pai Endowment Chair for Social Entrepreneurship, Manipal University, Manipal. Awareness on menstrual hygiene management in the local language (Kannada) is first created by us before distribution of Sneha sanitary napkin packets to these rural women/girls through sponsorships. This is a unique ongoing project leading to women’s empowerment with concern towards health and economic status in Udupi district, Karnataka State. A population of **15,000** rural girls and women have been targeted till date since its inception (June 2009).

Details of Publications:

a. Papers published in journals

1. Monoamine oxidase in health and disease (A review) **Rao A**, Srinivasan S., Udupa K.N. J. Physiol. Pharmacol 18:1974 ;73-85.
2. Monoamine oxidase in thyroid disorders. **Rao A**, Srinivasan S., Udupa, K.N., Quart. J. of Surg. Sci. 10:1974;185-189.

3. Monoamine oxidase in thyroid gland of rats: Effect of neurohumours, thyroxine, carbimazole, adrenaline, beta adrenergic blockers and MAO inhibitors. **Rao A**, Wahi R.S., Chansouria, J.P.N. Srinivasan, S., Udupa K.N. Ind. J. Exptl. Biol., 14 :1976; 14-18.
4. Isolation and characterization of MAO from hyperfunctioning human thyroid. **Rao A**, Srinivasan S. Udupa K.N. Ind. J. Physiol.Pharmacol., 20: 1976;123-129.
5. Catecholamine metabolism in experimentally produced thyroid tumours in albino rats. **Rao A**, Chansouria J.P.N., Srinivasan S., Udupa K.N., Quart. J. of Surg. Sci., 13: 1980; 7-10.
6. Role of stress in cancer. Udupa K.N., **Rao A**, Prasad R., Khatri S., Patel V., Chansouria J.P.N. Ind. J. Cancer., 17: 1980; 7-10.
7. A study of urinary excretion of biogenic amine metabolites in epilepsy. Baliga L., **Rao A**, Raja A., Rao S.N. Acta Neurol. Scand., 68: 1983;413-416.
8. Urinary excretion of taurine in epilepsy. **Rao A**, Baliga L., Raja A., Rao S.N. Acta Neurol Scand. 68: 1983; 421-423.
9. Studies on biogenic amines and their metabolites in mentally retarded children on celastus oil therapy. Nalini K., Aroor A., Kumar K.B., **Rao A**. Alternative Medicine (Switzerland) 01:1986; 355-360.
10. Preliminary studies on urinary excretion of biogenic amine metabolites after severe head injury. **Rao A**, Rao S.N., Raja A. Neurology(India), 34: 1986; 363-370.
11. Urinary excretion of taurine in migraine. **Rao A**, Rao S.N. Headache, 28:1988;133-134.
12. Urinary excretion of biogenic amine metabolites in migraine. **Rao A**, Rao S.N. Biochemical Archives 4: 1988;141-144.
13. A study of biogenic amines and their metabolites in convulsions induced by maximum electric shock in rats. Martis G., Karanth K.S., Rao S.N., **Rao A**. Biochemical Archives, 4: 1988; 453-458.
14. Urinary levels of biogenic amine metabolites in mentally retarded children. Nalini K., Aroor A.R., **Rao A**. J. Ment. Def. Res. 32:1988; 419-424.
15. Urinary levels of taurine in mentally retarded children on celastus oil therapy. Nalini K., Aroor A.R., **Rao A**. Alternative Med., 3: 1989;123-126.
16. Urinary levels of taurine in the mentally retarded children. Nalini K., Aroor A.R., **Rao A**. J.Ment. Def. Res., 33:1989;271-274.
17. A study of altered biochemical parameters in blood following severe head injury. **Rao A**, Rao S.N., Raja A. Neurology (India), 37:1989;239-247.

18. Neuropharmacological activity of *Withania somnifera*. Prabhu V., Karanth K.S., **Rao A.**, *Fitoterapia (Italy)*, 61:1990;237-240.
19. A study on the effect of oral administration of *Acorus calamus* root paste on the biogenic amines and their metabolites in rats subjected to maximum electric shock. Martis G., Karanth K.S., **Rao A.**, *Alternative Med.*, 3: 1990;149-152.
20. Neuropharmacological activity of *Acorus calamus*. Martis G., Karanth K.S., **Rao A.** *Fitoterapia*, 62:1991;331-337.
21. Neuropharmacological activity of *Herpestis monniera*. Martis G., Karanth K.S., **Rao A.** *Fitoterapia*, 63:1992;399-404.
22. Effect of *Centella asiatica* fresh leaf aqueous extract on learning and memory and biogenic amine turnover in albino rats. Nalini K., Aroor A.R., Karanth K.S., **Rao A.** *Fitoterapia*, 63:1992; 232-237.
23. Effect of piracetam on retention and biogenic amine turnover in albino rats. Nalini K., Karanth K.S., **Rao A.**, Aroor A.R. *Pharmacol. Biochem. Behav.*, 42: 1992;859-864.
24. Elevation of serum ceruloplasmin levels in brain tumours. Manjula S., Aroor A.R., Raja A., Rao S.N., **Rao A.** *Acta Neurol. Scand.* 86:1992;156-158.
25. Serum immunoglobulins in brain tumours. Manjula S., Aroor A.R., Raja A., Rao S.N. **Rao A.** *Acta Neurochir* 115:1992;103-105.
26. Urinary excretion of pseudouridine in patients with brain tumours. Manjula S., Aroor A.R., Raja A., Rao S.N., **Rao A.** *Acta Oncol.* 32:1993;311-314.
27. Urinary excretion of 6- hydroxymethylpterin in brain tumours. Manjula S., Aroor A.R., Raja A., Rao S.N., **Rao A.** *Acta Oncol.* 32:1993;29-31.
28. Serum adenosine deaminase activity in brain tumours. Manjula S., Aroor A.R., Raja A., Rao S.N., **Rao A.** *Acta Neurochir.* 121:1993;149-151.
29. Effects of *Nardostachys jatamansi* on biogenic amines and inhibitory aminoacids in the rat brain. Prabhu V., Karanth KS, **Rao A.** *Planta Medica* 60:1994;114-117.
30. Circulating immune complexes in intracranial neoplasms. Manjula S., Aroor A.R., Raja A., Rao S.N., **Rao A.** *Acta Neurochir* 133:1995;164-168.
31. Effects of *Celastrus paniculatus* on passive avoidance performance and biogenic amine turnover in albino rats. Nalini K., Karanth K.S., **Rao A.**, Aroor A.R., *J. Ethnopharmacol.*, 47: 1995;101-108.
32. Molecular variants of epidermal growth factor in malignant astrocytoma. Rao RK, Manjula S., Aroor A.R., Raja A., Davis T.P., **Rao A.** *Peptides* 17: 1996;179-181.

33. Role of antioxidant enzymes in brain tumours. Rao G.M., Rao A.V., Raja A., **Rao A.** Clin. Chim. Acta, 296:2000;203-212.
34. Lipid peroxidation in brain tumours. Rao G.M., Rao A.V., Raja A., Rao S.N., **Rao A.** Clin. Chim. Acta, 302:2000;205-211.
35. Oxidative stress and antioxidants in epilepsy. Sudha K., Rao A.V., **Rao A.** Clin. Chim. Acta, 303:2001;19-24.
36. Antioxidant status and lipid peroxidation in premenstrual syndrome, a preliminary study. Kalia G., Sudheendran S., **Rao A.** Clin. Chim. Acta, 309:2001;97-99.
37. Oxidative stress and antioxidants in tubercular meningitis, Sudha K., Rao AV, Rao SN, **Rao A.** Ind. J. Clin. Biochem 17: 2002;34-41.
38. Oxidative stress in pediatric nephrotic syndrome. Kamireddy R, Kavuri S, Devi S, Vemula H, Chandana D, Harinarayanan S, James R, **Rao A.** Clin.Chim. Acta, 325: 2002;147-150.
39. Levels of glutathione, ceruloplasmin and malondialdehyde in oral leukoplakia and oral squamous cell carcinoma. **Rao A**, Rao N, Bajaj P, Renjith G, Kondapi K, Suneetha N. Malays Dent J 23:2002;85-90.
40. Plasma antioxidant vitamins in brain tumours. Rao G.M., Rao, A.V., Raja A., Rao S.N., **Rao A.** Neurology(India), 51:2003;220-222.
41. Free radical toxicity and antioxidants in Parkinson's disease. Sudha K., Rao A.V., Rao, S.N., **Rao A.** Neurology(India), 51:2003; 60-62.
42. Erythrocyte glutathione and serum glutathione-S-transferase in patients with brain tumours. Seetaramiah, C., Arathi, Bhat, S., Nair, S.R., Ponduri M., Rao, S.N., Raja A., **Rao A.** Clin Chim Acta, 333: 2003; 97-99.
43. Lipid peroxidation, hemolysis and antioxidant enzymes of erythrocytes in stroke. Sudha K, Rao AV, Rao SN, **Rao A.** Indian J Physiol Pharmacol. 48: 2004;199-205.
44. Oxidative damage and plasma antioxidants in cerebrovascular accident. Sudha K, Rao AV, Rao SN, **Rao A.** Indian J Physiol Pharmacol. 48:2004;489-492.
45. Free radical toxicity and antioxidants in Guillain-Barre syndrome, a preliminary study. Kirankumar T, Chandrika A, Krishnasumanth N, Sireehsa P, Rao SN, **Rao A.** Clin Chim Acta 346: 2004;205-209.
46. Serum total glutathione-S-transferase in stroke, a preliminary report. Samuel A.M., Kollu R., Rao S.N., **Rao A.** Clin Chem Lab. Med., 42: 2004; 984-986.
47. Erythrocyte glutathione and serum total glutathione - S- transferase in epilepsy. Kirankumar T, Chandrika A, Krishnasumanth N, Sireesha P, S.N. Rao , **Rao A.** Clin. Chem Lab. Med., 43: 2005; 106-107.

48. Anticonvulsant and neurotoxicity profile of Nardostachys jatamansi in rats. Rao VS, **Rao A**, Karanth KS. *J. Ethnopharmacol.* 102: 2005;351-356.
49. Serum protein thiol in oral squamous cell carcinoma. Subash P, Das M, **Rao A**. *Clin Chim Acta* 368:2006;199-200.
50. Time-level relationship between indicators of oxidative stress and Glasgow coma scale scores of severe head injury patients. Nayak C, Nayak D, Raja A, **Rao A**. *Clin. Chim Acta* 44: 2006; 460-463
51. Oxidative stress in sepsis in children. Cherian S., Jameson S., Helena V, Lakshmi Latha , Anu Rekha M.R., Nagamma T, Subba Raju V., Kini PG, **Rao A**. *Indian J Med Res* 125:2007; 143-148.
52. Relationship between neurological outcome and early oxidative changes in erythrocytes in head injury patients. Nayak C, Nayak D, Bhat S, Raja A, **Rao A**. *Clin Chem Lab Med* 45: 2007; 629-633.
53. Time-relative changes in the erythrocyte antioxidant enzyme activities and their relationship with Glasgow coma scale scores in severe head injury patients in the 21-day posttraumatic study period. Nayak C, Nayak D, Raja A, **Rao A**. *Indian J Med Sci* 61: 2007;381-389.
54. Quantitation and characterization of glutathionyl hemoglobin as an oxidative stress marker in chronic renal failure by mass spectrometry. Mandal AK, Woodi M, Sood V, Krishnaswamy PR, **Rao A**, Ballal S., Balram P. *Clin Biochem* 40:2007; 986–994.
55. Relationship between markers of lipid peroxidation, thiol oxidation and Glasgow coma scale scores of moderate head injury patients in the seven-day posttraumatic period. Nayak C, Nayak D, Raja A, **Rao A**. *Neurol Res in the 7-day posttraumatic period. Neurol Res* 30:2008;461-464.
56. A preliminary study of protein thiols and serum cholinesterase in assisted reproduction. . Prabhu K, Kumar P, Pai M, Sinha I, **Rao A**. *Indian J Clin Biochem*, 23:2008;98-99.
57. Erythrocyte indicators of oxidative changes in patients with graded traumatic head injury. Nayak C D, Nayak D, Raja A, **Rao A**. *Neurology (India)* 56:2008;31-35.
58. Antioxidants and lipid peroxidation in gestational diabetes-a preliminary study. Dey P, Gupta P, Acharya NK, Rao NS, Ray S, Chakrabarty S, Ramprasad S, Kurian TA, Mawroh A, Kundu A, Bhaktha G, Joseph CP, Kumar P, Rai L, **Rao A**. *Indian J Physiol Pharmacol* 52: 2008;149-156.
59. A preliminary study of antioxidants in oral cancer. Prabhu K, **Rao A**, Naik D. *Biochem. An Indian J* 2:2008;70-72.
60. Phosphodiesterase activity in intrauterine growth restriction. Prabhu K, **Rao A**, Sharma S, Mohan S. *Indian J Clin Biochem* 23: 2008;77.

61. Plasma protein thiols and total antioxidant power in pediatric nephrotic syndrome. Karthikeyan K, Sinha I, Prabhu K, Bhaskaranand N, **Rao A**. *Nephron Clin Pract* 110:2008;c10-c14.
62. Lipid peroxidation, erythrocyte antioxidants and plasma antioxidants in osteoarthritis before and after homeopathic treatment. Pinto S, Rao AV, **Rao A**. *Homeopathy* 97:2008;185-189.
63. Susceptibility of peripheral lymphocytes of brain tumour patients to in vitro radiation-induced DNA damage, a preliminary study. Guruprasad K, Kumar P, Devi U, Ali S, Upadhya R, Pillai S, **Rao A**. *Clin Exp Med* 8:2008 ; 147-150.
64. The antioxidant status in human population based on the concept of prakruthi in Ayurveda. Mallya H M., Shenoy RP, Sreejith R., Linta T., Rashmi S., Kamath MS, Anupama N., **Rao A**. *Asian Pac J Trop Med* 1: 2008; 40-43.
65. Sporadic Creutzfeldt – Jacob disease – A review. Sharma S, Mukherjee M, Kedage V, Muttigi MS, **Rao A**. *Rao SN. Int J Neuroscience* 119 : 2009; 1981-1994.
66. Assessment of total sialic acid and lipid –bound sialic acid in management of brain tumours. Shantaram M, **Rao A**, Aroor A, Raja A, Rao SN, Monteiro F. *Ann Indian Acad Neurol* 12:2009; 162-166.
67. Plasma protein oxidation in patients with brain tumours. Kumar P, Devi U, Ali S, Upadhya R, Pillai S, Raja A, Rao SN, **Rao A**. *Neurol Res* 31 :2009; 270-273.
68. Antioxidants and lipid peroxidation status in diabetic patients with and without complications. Srivatsan R, Das S, Gadde R, Krishna M K, Taduri S, Rao N, Ramesh B, Baharani A, Shah K, Kamireddy SC, Priyatham G, Balakumaran TA, Seshadri S, **Rao A**. *Arch Iranian Med* 12 :2009;121-127.
69. Plasma protein thiols, ceruloplasmin, C-reactive protein and red blood cell acetylcholinesterase in patients undergoing intrauterine insemination. Prabhu K, Kumar P, Adiga SK, **Rao A**, Lanka A, Singh J. *J Hum Reprod Sci* 2:2009; 27-29.
70. DNA damage in exfoliated buccal cells and antioxidant status of saliva in brain tumour patients. Shenoy RP, Vatsa A, Sahoo S, Rana R, Nayak G, Bhat P, Kalthur G, **Rao A**. *J Hainan Med Univ* 16 :2010; 1269-1274.
71. Estimation of salivary protein thiols and total antioxidant power of saliva in brain tumour patients. Suma HR, Prabhu K, Shenoy RP, Raja A, Rao SN, **Rao A**. *J Can Res Therap* 6:2010; 278-281.
72. Assessment of serum L- fucose in brain tumour cases. Shantaram M, Monteiro F, Aroor AR, Rao SN, Raja A, **Rao A**. *Ann Indian Acad Neurol* 13 :2010; 33-36.

73. Plasma protein oxidation and total antioxidant power in premenstrual dysphoric disorder and menstruating young adult females. Tuladhar ET, Kamath A, **Rao A**. *J Clin Diag Res* 4 :2010; 3409-3413.
74. Can antioxidants predispose to cancer recurrence ? Prabhu K, Reddy GM, **Rao A**. [Asian Pacific Journal of Tropical Medicine](#) 3: 2010;494-495.
75. Spectrophotometric analysis of the expression of secreted aspartyl proteinases from *Candida* in leukoplakia and oral squamous cell carcinoma. Rehani S, Rao NN, **Rao A**, Carnelio S, Suma HR, Prakash PY. *J Oral Sci* 53: 2011; 421-425.
76. Erythrocyte and plasma antioxidants in bronchial asthma before and after homeopathic treatment. Pinto S, Rao AV, **Rao A**. *J Homeopat Ayurv Med* 1: 2011;1-7.
77. Assessment of frequency of micronucleated exfoliated buccal cells in relation to oxidative stress in oral lichen planus in coastal Karnataka, India. Mukherjee M, Gyawali P, Thakur RK, Shenoy RP, **Rao A**. *Asian Pacific Journal of Tropical Disease* 1:2011;287-288.
78. Significance of serum butyrylcholinesterase levels in oral cancer. Prabhu K, Naik D, Ray S, Vadiraj, **Rao A**. Kamath A. *Australasian Med J* 4,7: 2011;374-378.
79. Increased oxidative stress and altered antioxidants status in patients with chronic allergic rhinitis. Sequeira S, Rao AV, **Rao A**. *Advances in Bioscience and Biotechnology* 3:2012;951-956.
80. Altered biochemical parameters in saliva of pediatric attention deficit hyperactivity disorder. [Archana](#) E, [Pai](#) P, [Prabhu](#) BK, [Shenoy](#) RP, [Prabhu](#) K, [Rao A](#). [Neurochem Research](#). 37: 2012: 330-334.
81. Pilot study of salivary butyrylcholinesterase, phosphodiesterase, thiols and ceruloplasmin in auditory neuropathy. [Prakash](#) H, [Prabhu](#) K, [Poojari](#) K, Prabhu B, [Malik](#) R, **Rao A**. [Asian Pacific Journal of Tropical Disease](#), 2, Suppl. 1: 2012; S471–S474.
82. A study of quality of life among perimenopausal women in selected coastal areas of Karnataka, India. Nayak G, Kamath A, Kumar P, **Rao A**. *J Mid-life Health* 3:2012:71-75.
83. A prospective single arm open pilot trial to study the antioxidant property of Ayurvedic massage therapy in healthy individuals. Malagi KJ, Adiga SH, **Rao A**, Shenoy R, Kamath M, Devi AS. *Int J Pharmacol Clin Sciences* 2:2013;121-125.
84. Serum mineral status and climacteric symptoms in perimenopausal women before and after Yoga therapy, an ongoing study. Kumar A, Archana E, Pai A, Nayak G, Shenoy RP, **Rao A**. *J Mid-life Health* 4:2013;225-229.
85. Spectrum of clinical symptoms in children with elevated lactate : pyruvate ratio in a tertiary care setting. Kamath SU, Bhaskaranand N, **Rao A**. *Asian J Biomed Pharmaceut Sciences* 4:2014;34-38.

86. Role of early intervention in a family of affected siblings with suspected mitochondrial disorder. Kamath SU, Bhaskaranand N, **Rao A**. WJPR 3:2014;2226-2231.

87. Role of renoprotective therapy on antioxidant status in children with nephrotic syndrome. Prabhu K, Malik, Pai P, Gayathri S, **Rao A**, Bhaskaranand N. J Int Acad Res Multidiscipl. 2:2014;576-581.

b. Chapters in books

1. Stress, catecholamines and thyrotoxicosis. Udupa K.N., **Rao A**., Prasad R., Chansouria J. P. N., Catecholamines and Stress, Pergamon Press, U.K. 1976.

2. Biochemical potential of vitamin E. **Rao A**., Mallya M.M. Focus on vitamin E research. Ed. Braunstein M. pp. 69-86, Nova Science Publishers Inc.,NY 2006.