

CURRICULUM VITAE

N. RAJENDRA PRASAD

Birth date: 1/6/77

Birth place: Kumbakonam, Tamilnadu

Sex: Male

Nationality: Indian

Marital status: Married

Designation

: **Lecturer in Biochemistry**

Work Address

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Education

Degree	University	Year
Ph.D Biochemistry	Annamalai University	2006 (Thesis submitted)
M.Phil Biochemistry	Annamalai University	1999 - 2000*
M.Sc Biochemistry	Annamalai University	1997 - 1999*
B.Sc Chemistry	Bharathidasan University	1994 - 1997*

(*Obtained with good academic record)

Teaching Experience

Post-Graduate Teaching Experience:

M.Sc., Biochemistry - Teaching Biochemistry, Enzymology, Biochemical techniques, Immunology, Molecular Biology and Microbiology from 2002 onwards.

M.Sc., Biotechnology - Teaching Cell Biology, Molecular Biology, Genetic Engineering, Food technology and Biotechnology from 2002 onwards.

Laboratory Incharge:

M.Sc., Biochemistry - Handling practicals on Biomolecules, Enzymes, Clinical Biochemistry, Microbiology to M.Sc Biochemistry students from 2002 onwards.

M.Sc., Biotechnology - Handling practicals on Proteins and Nucleic acids, Cell and Molecular Biology and Biochemical Techniques, to M.Sc Biotechnology students from 2002 onwards.

M.Phil thesis guided

Name	Thesis title	Year
Ms. G. Kanimozhi	Antifungal activity of south Indian Medicinal plants	2002
Ms. Srinithya	Protective effect of beta carotene on UVB-irradiated lymphocytes	2005

Awards/Fellowships received

Award/Fellowship	Agency	Year
Young Scientist Award (YSA)	Tamilnadu State Council for Science and Technology (TNSCST/YSF/TD/2003-2004/254).	2004
Agricultural Research Scientist (ARS)	ICAR 30096 (05)/ARS-I /2001	2001
Lecturership (NET)	Joint CSIR-UGC (F.No 2-40/1999 (ii) E.U II.	1999

Training Courses Attend

1. Attend **UGC sponsored** Refresher Course at Department of Technology, Annamalai University on "**Industrial Biotechnology**" from 03.11.04 to 27.11.03.
2. Attend **UGC sponsored** Orientation Course at **Bharathidasan University**, Trichy from 03.12.03 to 30.12.03.
3. Attend **ICMR sponsored**, training course on "*Techniques for Assessment of Nutritional Anaemia*" at **National Institute of Nutrition**, Hyderabad-07 from 2-13th December 2002.
4. Trained on *cytogenetics* at Department of Applied Zoology, **Kuvembu University, Shimoga, Karnataka** from 3.5.04 -3.7.04.
5. Trained on *Molecular cytogenetics & irradiation procedures* at Radiological Safety Division, **Indra Gandhi Center for Atomic Research, Kalpakkam** from 19.10.04 – 21.10. 04.

Techniques known

Cytogenetics	Chromosomal aberrations Cytokinesis blocked micronuclei assay
Cell culture	Lymphocyte culture
Electrophoresis	Comet assay, Western blot
Thin layer chromatography	HPLC, GLC Thin layer chromatography Phytochemicals separation Lipid fractionation
Antimicrobial sensitivity test	Tube dilution technique Disc diffusion technique
Colorimetry	Biochemical and enzyme analysis
Autoanalyser	Antioxidants assay Blood sample analysis
Spectroscopy	UV, NMR and EI-MS, AAS

Main area of research

- Natural products
- Radiation protection and Toxicology

Research work carried during Doctoral programme

(i) Radioprotective effect of sesamol and ferulic acid

Sesamol and ferulic acid pretreated (1, 5 and 10 µg/ml) lymphocytes were exposed to different doses of γ -radiation, i.e., 1, 2 and 4 Gray (Gy) and the cellular changes were estimated by using cytokinesis blocked micronucleus assay (MN), dicentric aberration (DC), thiobarbituric acid reactive substances (TBARS), reduced glutathione (GSH) and the activities of superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPx). Radiation significantly increased MN, DC frequencies, TBARS levels and decreased GSH and antioxidant enzyme levels in a dose dependent manner. The highest damage to lymphocytes was observed at 4 Gy-irradiation. On the other hand, sesamol/ferulic acid pretreatment significantly decreased MN, DC frequencies, TBARS levels and increased GSH levels and SOD, CAT and GPx activities in a concentration dependent manner. At 1 Gy irradiation all concentrations of sesamol/ferulic acid (1, 5 and 10 µg/ml) significantly protects the lymphocytes from radiation damage. At 2Gy irradiation 5 and 10 µg/ml of sesamol shows significant radioprotection. Since the highest damage was observed at 4 Gy irradiation both 1 and 5 µg/ml of sesamol/ferulic acid pretreatment were not sufficient to protect the lymphocytes from radiation damage but 10 µg/ml of sesamol and ferulic acid protects the lymphocytes from radiation effect. Thus, dietary phenolics pretreatment gives significant protection to cultured human lymphocytes against-radiation induced cellular damage.

(ii) Photoprotective effect of sesamol and ferulic acid

Normal lymphocytes are highly sensitive to the damaging effect of radiation and undergo cell death. The Photoprotective effect of sesamol, a constituent of sesame oil, has been examined in the UVB-(280–320 nm) irradiated human blood lymphocytes. Lymphocytes pretreated with increasing concentrations of sesamol (1, 5 and 10 µg/ml) for 30 min, were irradiated and lipid peroxidation and antioxidant defense were examined. UVB-irradiated lymphocytes exhibited increased levels of lipid peroxidation and disturbances in antioxidant defense. Sesamol pretreatment resulted in significant reduction in lipid peroxidation marker, thiobarbituric acid reactive substances (TBARS). Further, antioxidants like reduced glutathione (GSH), superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPx) increased, in a dose-dependent manner, in sesamol pretreated and UVB-irradiated lymphocytes. The maximum dose of sesamol (10 µg/ml) normalized the UVB-induced lipid peroxidation, indicating the photoprotective effect of sesamol in irradiated lymphocytes.

Summary of M.Phil., research work

The antidermatophytic activity of *Psoralea corylifolia* Linn (Babchi) seed extracts was evaluated by disk diffusion method *in vitro*. The results showed that methanol extract of the plant at 250 µg/ml exhibited maximum zone of inhibition up to 28 mm diameter. Six different bands were obtained when the methanol crude extract was subjected to pTLC. The band possessing Rf. value 0.97 showed an extended zone of inhibition 30 mm diameter. ¹³C-NMR and EI-Mass spectra revealed that the active compound would be 4'-methoxy flavone and the molecular formula of the active principle might be C₁₆H₁₂O₃. MIC of the active principle was determined by tube dilution technique (125-62.5 µg/ml) along with standard drug miconazole it suggests that 4'-methoxy flavone may be an alternate remedy for dermatophytosis since the conventionalazole compounds showed side effects.

Publications

1. **N. Rajendra Prasad**, M. Srinivasan, K.V. Pugalendi, Venugopal P. Menon, Protective effect of ferulic acid on γ -radiation-induced micronuclei, dicentric aberration and lipid peroxidation in human lymphocytes, *Mutation Research* 603 (2006) 129-134
2. **N. Rajendra Prasad**, V.P. Menon, V.Vasudev, K. V. Pugalendi. Radioprotective effect of sesamol on gamma radiation induced DNA damage, lipid peroxidation and antioxidant levels in cultured human lymphocytes, *Toxicology* 209 (2005)225 - 235.
3. **N. Rajendra Prasad**, T. Mahesh, V. P. Menon, R.K Jeevanram, K. V. Pugalendi. Photoprotective effect of sesamol on UVB - radiation induced oxidative stress in human blood lymphocytes *in vitro*, *Environmental toxicology and Pharmacology* 20 (2005) 1-5.
4. G. Chandramohan, **N. Rajendra Prasad**, C. Anandi, K.V. Pugalendi Antimicrobial activity of two south Indian medicinal plants, *Journal of the Annamalai University, Part-B, Science* XLI (2005) 65-71.
5. **N. Rajendra Prasad**, V.P. Menon, V.Vasudev, K. V. Pugalendi. Radioprotective effect of sesamol on gamma radiation induced DNA damage, lipid peroxidation and antioxidant levels in cultured human lymphocytes, *Indian J Radiation Research* 1/2 (2004) 15.
6. **N. Rajendra Prasad**, C. Anandi, B. Balasubramanian, K.V. Pugalendi Antidermatophytic activity of *Psoralea corylifolia*

correlated with presence of a flavonoid compound, *Journal of Ethnopharmacology* 91/1 (2004) 21-24.

7. J. Vaijayanthimala, **N. Rajendra Prasad**, K.V.Pugalendi, Antidermatophytic activity of some Indian medicinal plants, *Journal of Natural Remedies* 4/1 (2004) (26-31)
8. R. Saravanan, **N. Rajendra Prasad**, K.V. Pugalendi: Effect of *Piper betle* leaf extract on alcoholic toxicity in the rat brain, *Journal of Medicinal Food* 6/3 (2003) 261 – 265.
9. R. Mallika, **N. Rajendra Prasad**, K.V. Pugalendi. Influence of habits on masons' blood cholesterol, *Indian J Physiology Pharmacology* 47 (4), 2003.
10. J. Vaijayanthimala, **N. Rajendra Prasad**, K.V. Pugalendi, Antifungal Activity of Oils, *Indian Journal of Microbiology* 41: 325-326, 2001.

Under publication

11. M. Srinivasan, **N. Rajendra Prasad**, V.P. Menon, Effect of curcumine on ionizing radiation induced cellular changes, *Mutagenesis* (communicated).
12. M. Srinivasan, **N. Rajendra Prasad**, V.P. Menon, Effect of lycopene on ionizing radiation induced cellular changes, *Toxicology* (Communication).
13. **N. Rajendra Prasad**, V.P. Menon, K.V. Pugalendi, Radioprotective role of natural products (review), *Toxicology* (Communicated)
14. **N. Rajendra Prasad**, V.P. Menon, K.V. Pugalendi, Protective effect of ferulic acid on UVB-radiation induced clastogenic event, *Journal of Photochemistry and Photobiology B: Biology* (Communicated)

International/National Conferences

1. Attend **UGC sponsored National Workshop & Conference** on "Recent trends in Biochemistry & Biotechnology" February 24-27th, 2006 Department of Biochemistry, Annamalai University (Treasurer, Organizing committee).
2. **IV Annual Meeting of SFRR- India and International Conference** on Antioxidants, Free Radicals in Health-Nutrition and Radioprotectors & Health, January 10-12, 2005 paper presented on "*Radioprotective effect of sesamol*" **St. Johns Medical College, Bangalore.**
3. Attend **UGC sponsored National Conference** on "Natural Products in Health, February 26-27th, 2005 Department of

Biochemistry, Annamalai University (Treasurer, Organizing committee).

4. **III Annual Meeting of SFRR-India and International Conference on Natural Products**, Free Radicals and Radioprotectors in Health, January 17–19, 2004 Annamalai University, Annamalainagar Paper presented on "*Antidermatophytic activity of extracts of Psoralea corylifolia correlated with presence of a flavonoid compound*".
5. **International Conference on Recent trends in radiation biology** December 1-3, 2004 Mumbai on "*Radioprotective effect of sesamol on gamma radiation induced DNA damage, in cultured human lymphocytes*"
6. III State level seminar on phytochemistry, September 25th 2004, **Theivanai Ammal Women College Villupuram**, Presented a paper on "*Antidermatophytic activity of Flavonoids*"
7. **IV International conference of the Society for Indian Human and Animal mycologists (SIHAM-2002)**–Annamalai University, Annamalainagar, January 18-20th 2002, on "*Isolation and characterization of antidermatophytic principle from Psoralea corylifolia*".
8. XI Annual Scientific Meet of **Society of Biological Chemists (India)** Annamalainagar chapter, February 23rd 2002. Presented a paper on "Isolation and characterization of anticandidal principle from *Psoralea corylifolia*".
9. XII Annual Scientific Meet of **Society of Biological Chemists (India)** Annamalainagar chapter, February 3rd 2001.
10. IX Annual Scientific Meet of **Society of Biological Chemists (India)** Annamalainagar chapter, February 13rd 1999.

Membership in Academic Societies

1. Member, Society of Biological Chemists, India
Treasurer, SBC (I) Annamalainagar chapter.
2. Member, Society of Free Radical Research, India (SFRR)
3. Member, Indian Human and Animal mycologists (SIHAM)
4. Biochemical Society, Annamalainagar

Research Projects

1. UGC Minor Research Project (2002-2004):

UGC unassigned grant-Group-D Minor research project letter No:G2/7168/2002/20.12.02 order of the Vice-Chancellor dated 19.12.02 from the Rs. 20,000/-. **Topic:** Radioprotective role of sesamol on gamma-ray induced DNA damage and lipid peroxidation in lymphocytes *in vitro*

References

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