

Dr. Swati Kotwal, Professor



Personal Information

Designation and Work Address: Professor in University Department of Biochemistry
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Teaching Assignments

Period	Assignment	Remarks
2007 to 2011	M. Sc. II: Biological membranes, protein trafficking and translocation between organelles, and regulation of gene expression in eukaryotes. M. Sc. I: gene and chromosome structure, mapping, mutations and translation	Was entrusted with syllabus modification for molecular biology and biotechnology papers and practical.
2000 to 2007	M. Sc. II: Biological membranes, protein trafficking and translocation between organelles, biochemical engineering, fermentation technology and regulation of gene expression in eukaryotes. M. Sc. I: gene and chromosome structure, mapping, genetic recombination and mutations	Was entrusted with syllabus modification for molecular biology and biotechnology papers in 2006-07.
1990 to 2000	M. Sc. II: membrane transport, muscle biochemistry, gene regulation in prokaryotes and viruses, biochemical engineering, fermentation technology M. Sc. I: molecular biology, enzyme kinetics, photosynthesis	Was entrusted with the framing of syllabus for biotechnology
1985 to 1990	M. Sc. II: membrane transport, muscle biochemistry, membranes M. Sc. I: applied biochemistry, enzyme kinetics and regulation, photosynthesis, biophysical chemistry	

Research Activities: Projects Total Funding: Rs 39.9 Lacs

Period	Agency and Grant	Work
1998-2000	UGC Minor research project ₹ 0.27 lacs	Principle Investigator in "To provide genetic counseling to the staff members of the Nagpur University belonging to SC/ST and weaker section communities with special reference to Sickle Cell Disease"
2000-2004	Late Vinayakrao Phatak Memorial Project of Dr. Hedgewar Raktapedhi, Nagpur	Collaborative Research and extension project "Sickle Cell Disease Guidance and diagnosis Center". We screened more than 3000 school children for disease, conducted lectures for the parents and for the reproductive age group population. Brought out a handbook for parents.
2001-2004	Department of Biotechnology, N. Delhi. ₹ 15.865 lacs	Principle Investigator II in "Program for prevention and control of Sickle Cell Disease: Detection in reproductive age group population and pre-natal diagnosis for women at risk", in collaboration with the Department of Paediatrics, Govt. Medical College, Nagpur (Participation removed in 2002 after GMC showed its inability to transfer equipment to Dept of Biochemistry.)
Jan 2003-July 2006	Matthias Rath, Inc R & D, USA, ₹ 16.500 lacs	Principle Investigator in "Investigations into anti-cancer activities of nutrients: Vitamins, amino acids, minerals, Tamoxifen, peptides and other natural food constituents"
Aug 2006-Dec 2009	Matthias Rath, Inc R & D, USA, ₹ 5.11 lacs	Principle Investigator "Evaluation of anticancer efficiency of selenium fortified Nutrient Mixture (NM) supplementation with Tamoxifen as bioenhancer"
July 2007-June 2010	UGC Major Research Project, N. Delhi ₹ 6.436 lacs	Principle Investigator in 'Effect of prolonged oral administration of Green Tea Extract (GTE) with Black grapes and other phyto-nutrients (nutrient synergy) as compared to Tamoxifen in the progression of tumors in breast cancer model in rat and validation of these treatments by molecular biological studies in breast cancer cell lines
November 2010-October 2011	Matthias Rath, Inc R & D, USA, ₹ 11.58 lacs	Principle Investigator "Role of various nutrients and common dietary constituents in the prevention and treatment of age related health problems with special reference to bone metabolism"

Publications: 25

1. Prabhu Chandan, Wanjari S, Gawande S, Das S, Labhsetwar N, **Kotwal S**, Puri A, Satyanarayanan T, Rayalu S. (2009). Immobilization of carbonic anhydrase enriched microorganism on biopolymer based materials. *J. Mol Cat B: Enz.* 60, 13-21. (IF: 2.330)
2. Yadav Renu, Wanjari S, Prabhu C, Kumar V, Labhsetwar N, Satyanarayanan T, **Kotwal S**, Rayalu S. (2010). Immobilized carbonic anhydrase for the biomimetic carbonation reaction. *Energy Fuels*, 24, 6198 - 6207. (IF: 2.319)
3. Yadav Renu, Labhsetwar N, **Kotwal S**, Rayalu S. (2011). Single enzyme nanoparticle for biomimetic CO₂ sequestration. *J. Nanopart. Res.* 13, 263 - 271. (IF: 2.478)
4. Yadav Renu, Satyanarayanan T, **Kotwal S**, Rayalu S. (2011). Enhanced carbonation reaction using chitosan based carbonic anhydrase nanoparticles. *Curr. Sci.* 100, (3), 520 - 524. (IF: 0.78)
5. Wanjari S, Prabhu C, Yadav Renu, Labhsetwar N, Satyanarayanan T, Rayalu S. (2011). Immobilization of carbonic anhydrase on chitosan beads for carbonation reaction. *Journal of Process Biochemistry* 46, 1010-1018. (IF: 2.48)
6. Prabhu C, Wanjari S, Puri A, Bhattacharya A, Pujari R, Yadav Renu, Labhsetwar N, Sharma A, Satyanarayanan T, Rayalu S. (2011). Region specific bacterial carbonic anhydrase for the biomimetic sequestration of carbon dioxide. *Energy Fuels* 25, 1327-1332. (IF: 2.319)
7. Prabhu Chandan, Valechha A, Wanjari S, Labhsetwar N, **Kotwal S**, Satyanarayanan T, Rayalu S. (2011). Carbon composite beads for immobilization of carbonic anhydrase. *J. Mol Cat B: Enz.* 71, 71-78. (IF: 2.330)
8. Mangrulkar P, Yadav Renu, Meshram J, Labhsetwar N, Rayalu S. (2011). Tyrosinase immobilized MCM-41 for the detection of Phenol. *Water, Air, & Soil Pollution Journal* (Accepted) DOI 10.1007/s11270-011-0904-8. (IF: 1.894)
9. Yadav Renu, Joshi M, Wanjari S, Prabhu C, Kotwal S, Satyanarayanan T, Rayalu S. (2011). Immobilized carbonic anhydrase on Chitosan Stabilized Iron Nanoparticles for the carbonation reaction. *J. Nanopart. Res.* (Accepted with minor correction) doi.org/7.2011/NANO4245R1. (IF: 2.478)
10. Kartik T. Nakhate, Dadasaheb M. Kokare, Praful S. Singru, Amit G. Taksande, **Swati D. Kotwal** Nishikant K. Subhedar, Hypothalamic cocaine and amphetamine regulated transcript peptide is reduced and fails to modulated feeding behavior in rats with chemically induced mammary carcinogenesis. DOI 9th September 2010, *Pharmacology Biochemistry and Behavior*
11. Anup Kale, Sonia Gawande, **Swati Kotwal**, Shrirang Netke, Waheed Roomi, Vadim Ivanov, Aleksandra Niedzwiecki and Matthias Rath, A combination of green tea extract, specific nutrient mixture and quercetin: An effective intervention treatment for the regression of N-methyl-N-nitrosourea (MNU)-induced mammary tumors in Wistar rats *Oncology Letters* 1 (2), 313-317: 2010
12. Anup Kale, Sonia Gawande, **Swati Kotwal**, Shrirang Netke, Waheed Roomi, Vadim Ivanov, Aleksandra Niedzwiecki and Matthias Rath, Studies on the Effects of Oral Administration of Nutrient Mixture, Quercetin and Red Onions on the Bioavailability of Epigallocatechin Gallate from Green Tea Extract *Phytother. Res.* 24: S48-S55 (2010) (Published online 7 July 2009 in Wiley InterScience (www.interscience.wiley.com) DOI: 10.1002/ptr.2899)
13. Chandan Prabhu, Snehal Wanjari, Sonia Gawande, Sera Das, Nitin Labhshetwar, **Swati Kotwal**, Adarsh Kumar Puri, T. Satyanarayana and Sadhana Rayalu, Immobilization of carbonic anhydrase enriched microorganism on polymer based materials, *J. Molecular Catalysis B: Enzymatic*, 2009, 60: 13-21 (doi: 10.1016/j.molcatb.2009.02.22) **Journal impact factor 2.015.**
14. **Swati Kotwal**, Transcriptomic and Proteomic Approaches to Environmental Health Management, A book chapter in the proposed book *Environmental Pollution and Health Risk to Man and Animals* Final draft submitted in June 2008

15. Anup Kale, Sonia Gawande and **Swati Kotwal** Cancer Phytotherapeutics: Role of Flavonoids at Cellular Level': *Phytotherapy Research*, 22, 567-577 (2008) **Journal impact factor 1.772. Cited by 20, maximum impact factor of cited journal 4.058**
16. Sonia Gawande, Anup Kale and **Swati Kotwal**, Effect of Nutrient Mixture and Black Grapes on the pharmacokinetics of orally administered (-) Epigallocatechin-3-gallate from Green Tea Extract: A human study', , *Phytotherapy Research* 22, 802-808 (2008) **Journal impact factor 1.772. Cited by 9, maximum impact factor of cited journal 2.76**
17. Ajay Soni, Manju Soni and **Swati Kotwal**, Possible factors affecting the results of self-monitoring blood glucose (SMBG): A survey in Central India', *Trends in Medical Research*, 2(4): 185-192, 2007
18. **Swati Kotwal** Molecular methods for wastewater monitoring and treatment", a chapter in in *Microbial Technologies in wastewater treatment*, Technosource Publications, Jaipur, 2000
19. **Swati Kotwal** A child with Sickle Cell Disease: A handbook for parents', under Dr. Hedgewar Raktapedhi Sickle Cell Project, 2000
20. S. Sabat, **S. Kotwal** and P. V. Khandwekar Effect of various carbon sources on the production of Poly(beta)Hydroxy butyrate by *Haloferax mediterranie*", , *Sci. J. (NU)* Vol. 8, 1996-97.
21. **Swati Kotwal** and N.V. Shastri Partial purification of polygalacturonase of *A. Alternata*", *J. Ind. Instt. Of Sci.*, 63, 157, 1982
22. **Swati Kotwal** and N.V. Shastri Effect of variopus sulphur and phosphorous compounds on the growth of *A. Alternata*, (Fr) Keissl", , *Scie. And Cult.*, 48, 223, 1982
23. Swati Kotwal, Mandakini Patil and N.V. Shastri Studies on pectolytic and cellulolytic enzymes in oranges infected with *A. alternata* (Fr.) Keissl, Swati Kunte and N.V. Shastri *Journ. Of Food Scie. And Tech.*, 18, 115, 1981
24. Swati Kunte and N.V. Shastri Studies on extra cellular production of pectolytic enzymes by a strain of *A. alternata*", *Ind. Journ. of Microbiology*, 20, 211, 1980
25. Swati Kunte and N.V. Shastri Studies on *Alternaria alternata*, a soft rot organism of Mandarin Oranges and its control by essential oils", *Sci. and Cult.*, 45, 489, 1979

Names of Ph. D. students

Sr. No.	Name of Students	Topics	Awarded
1.	Mr. Ajay V. Soni	Strategies for evaluation and implementation of Quality assurance system and modification of assay methods In Clinical Chemical Laboratories.	Awarded Dated: 24 th April 2007
2.	Ms. Sonia Gawande	Studies on the efficiency of Natural food constituents on the Bioavailability of drugs and nutrients	Awarded Dated: 31 st December 2008
3.	Mr. Anup Kale	Studies on increasing the Bioavailability and thereby efficiency of active principles in Green Tea Extracts (Camellia sinesis) in the treatment of Cancer	Awarded Dated: 3 rd February 2009
4.	Ms. Kiran Fulzele	Anticancer activities of vitamins, minerals, amino acid and other food constituents	Awarded Dated: 4 th June 2009
5.	Mrs. Cynthia Lawrence	Production of extracellular protease using Soya waste	Awarded
6.	Mr. Amit Taksande	Studies on selenium and black grapes supplementation on the anticancer efficacy of Green tea Extract (GTE) as a combination of Nutraceuticals	Work Done About to Submission in December 2010
7.	Ms. Renu Yadav	Single enzyme nanoparticle for application in Humification and carbon Sequestration process	Work Done About to Submission in December 2010
8.	Mr. Chandan Prabhu	Sequestration of carbon dioxide using immobilized enzyme/ whole cells	Work Done About to Submission in December 2010
9.	Mrs. Krishnavevi Iyengar	In vitro production of secondary metabolites from medicinal plants and their biochemical and molecular characterization.	Working
10.	Ms. Prachi Dabhade	Natural Products as a alternative treatments: A study into metabolism of bone with respect to osteoporosis	Working
11.	Ms. Pradnya Mahatme	Biochemical And Molecular Scanning of Insulin Resistance In Polycystic Ovary Syndrome (PCOS) And Non-Alcoholic Fatty Liver Disease With PCOS Amongst Indian Women.	Working
12.	Ms. Soma Santra	Evaluation and development of strategies for improvement of calcium assay in clinical laboratories.	Working
13.	Ms. Smita Badole	Effect of Nutrients and/or medicinal plants in the treatment of Bone disorders with special reference to osteoporosis	Working

Community/ professional activities

2010: Re-nominated Organizing Secretary of Prof M. C. Nath Memorial Lecture Series Committee for a period of 3 years

2006 Nominated Organizing Secretary of Prof M. C. Nath Memorial Lecture Series Committee for a period of 3 years

2004 Member of the Commission for Scientific and Technical Terminology, Ministry of Human Resource Development, Govt. of India

2002 Member of the Research Committee of NARCOOD, Nagpur

2000 Involved in **collaborative research and extension program** on 'Sickle Cell Disease guidance and diagnosis with Dr. Hedgewar Rakta Pedhi, Nagpur for screening and counseling of reproductive age group population about the disease.

Membership of Societies

Life member of Society of Biological Chemists (India), Bangalore

Life member of Association for the promotion of DNA fingerprinting and other DNA Technologies (ADNAT), CCMB, Hyderabad

Life member of Association of University Teachers, RTM Nagpur University, Nagpur

Life member of Marathi Vidnyan Parishad, Nagpur (submitted)

Technical Editor of the following journals

1. Asian Journal of Cell Biology
2. Asian Journal of Clinical Nutrition
3. Biotechnology
4. Journal of Pharmacology and Toxicology
5. Research Journal of Environmental Toxicology
6. Asian Journal of Biochemistry
7. International Journal of Applied Biology and Pharmaceutical Technology

Reviewer for research articles for the national and international journals.

Conferences/symposia/workshops: organized

1. **29th July 2011 Co-ordinator** of One day edu-workshop on Flow Cytometry and High Melting Technology under Continuing Technical Skill Development Program
2. **12th Jan 2011 organizing secretary** of the 5th Prof M. C. Nath Memorial Lecture Series. Dr. Avadhesha Surolia, Director, National Institute of Immunology, spoke on "Harnessing protein folding to counter diabetes and other chronic diseases"
3. **18th Jan 2010 organizing secretary** of the 4th Prof M. C. Nath Memorial Lecture Series. Dr. Krishna B. Sainis, Director, Bio-medical Division, Bhabha Atomic Research Centre, Trombay, Mumbai spoke on "Role of Intracellular reactive oxygen species (ROS)

and glutathione in lymphocytes vis-à-vis apoptosis, radioprotection and immune function”

4. **17th December 2008 organizing secretary** of the 3rd Prof M. C. Nath Memorial Lecture Series. Dr. Alan Rein an expert on retrovirus assembly at National Cancer Institute, USA Spoke on Molecular Mechanisms in HIV-I virus particle assembly.
5. **3rd February 2008 organizing secretary** of the 2nd Prof M. C. Nath Memorial Lecture Series. Prof. P. Balram Director, Indian Institute of Science, Bangalore and Dr B. Shivkumar, Former Director, National Institute of Nutrition, Hyderabad spoke on Protein and polypeptide Design & Retinoid Binding Proteins and Molecular Symbiosis respectively.
6. **27-29 Dec 2007 Convener** of Diamond Jubilee Celebrations of the Department of Biochemistry and National Conference on 'Current Trends in Biochemistry'.
7. **5th March 2007 Organizing Secretary** of the 1st Prof M. C. Nath Memorial Lecture Series. Prof K. Subbarao, University Emeritus Professor of Biochemistry and INSA-Senior Scientist and Coordinator, ICMR Advanced Center for Research on Aging and Brain (CRAB), School of Life Sciences, University of Hyderabad, Hyderabad spoke on "CAN SCIENCE MODULATE THE PROCESS OF AGING?"
8. **20th January 2007 Organizing Secretary** of one day workshop on 'Intellectual Property Rights and Patenting System in India' at University Department of Biochemistry, RTM Nagpur University, Nagpur
9. **7th January 2004 Organizing Secretary** of National Symposium on 'Recent advances in Cancer Research' organized by Department of Biochemistry, Nagpur University, Nagpur
10. **20th December 2003 Organizing Secretary** of National symposium on 'Drug design and Bioinformatics' organized by Department of Biochemistry, Nagpur University, Nagpur

Conferences/ seminars/ workshops attended

1. **26th March 2011** delivered lecture UGC Sponsored refresher Course organized by UGC- Academic Staff College, Sant Gadge Baba Amravati University, Amravati "Protein Structure and Protein Sorting"
2. **5th – 6th February 2011** Invited Lecture Recent Advance in Agro-biotechnology for Sustainable Agricultural practices at K. C. Society's Moolji Jaitha College, Jalgaon.
3. **5th September 2010** Invited Lecture Biochem-Biotech Organization of SFS (BOSS) " Enzyme Technology and its application in Nanobiotechnology for Environment Remediation"
4. **6th to 7th August 2010** National Conference on CME in Immunology organized by Central India Institute of Medical Science (CIIMS), Nagpur
5. **5th to 7th February 2010** International symposium on Frontiers in Carcinogenesis and Cancer Prevention: Scientific Endeavors and Public Health Initiatives and presented poster on "Bioenhancing activity of Black Grapes: Intervention studies on mammary tumors induced by N-methyl Nitrosourea in Wistar rats."

6. **26th and 27th September 2008** Invited lecture on Natural Health Constituents and Cancer: Story of EGCG in UGC sponsored National Level Symposium on Current Trends in Cellular Communication
7. **10th and 11th January 2008** Co-chaired Technical Session III: Regulatory Toxicology, Gene Silencing in International Conference on Toxic Exposure related biomarkers, genomes and health effects organized by Natl Engg and Environ Res Inst, Nagpur
8. **5th & 6th January 2007** National Conference on 'Emerging Trends in Medicinal Plants and their Biotechnological Advances' organized by Dr Ambedkar College, Nagpur in collaboration with Natl Medicinal Plants Board and Baidyanath, Nagpur **'Biotechnological advances for enhancing production of quercetin from Phallanthus amarus Shun & Thonn', K. Iyengar;** Bijaya Sarangi; Swati Kotwal; Nirankush Khubalkar; Tapan Chakraborti, Oral Presentation by Ms Krishnaveni Iyengar, Page 76
9. **18th to 21st December 2006** International 2nd Biotech Congress on Innovations in Biotechnology and their applications at Rajiv Gandhi Biotechnology Centre, RTM Nagpur University, Nagpur
10. **12th and 13th January 2006** International Conference on Antioxidants, Oxidative Stress and Inflammation in Chronic Diseases (Inflammation 2006) at Dr Ambedkar College, Nagpur
11. **6th and 7th February 2005** National Seminar on '**Global Perspectives for Indian Food Industry by 2020**' organized by Laxminarayan Institute of Technology, Nagpur University, Nagpur
12. **21st and 22nd January 2005 'Biotalk 3, 2005 on Cancer'** organized by Hislop School of Biotechnology
13. **21st to 24th November 2004** 73rd Conference of Society for Biological Chemists (India) at Pantnagar, Uttaranchal **Presented poster**
14. **11th September 2004** Workshop on 'Quantitative biology and its relevance in biology' at L. I. T., Nagpur
15. **16th November 2003** Biotalk 2 on Stem cell Technology organized by Hislop School of Biotechnology, Nagpur
16. **6th February 2003** Biotalk 1 on Recent Trends in Biotechnology organized by Hislop School of Biotechnology, Nagpur
17. **22nd to 24th November 2002** DBT sponsored workshop on 'Statistical analysis and modeling of industrial fermentation experiments' at NEERI, Nagpur
18. **12th to 14th January 2001** 27th Annual Conference of Association of Clinical Biochemists (India) at IGMC/GMC, Nagpur
19. **Jan.9 and 10, 2000** Annual Conference of Indian Society of Human Genetics and Conference of South Asia-Pacific Society of Human Genetics at Nagpur,
20. **Nov. 29 to Dec. 10, 1999 UNESCO sponsored Regional Training Course on Environmental Biotechnology, organized by NEERI, Nagpur,**
21. **Dec. 26th to 28th, 1997** Golden Jubilee Celebration National Conference, "Current trends in Biochemical Research and Education", organized by Department of Biochemistry, Nagpur University, Nagpur
22. **25th to 29th October, 1997** Workshop cum seminar on "Clinical Diagnostic Methods", Nagpur, organized by Department of Biochemistry, Nagpur University, Nagpur

23. **26th to 28th Sept., 1997** Maharashtra State Level Conference of the Association of Clinical Biochemists of India, Nagpur
24. **19th to 21st Sept., 1994** XVI International Congress of Biochemistry and Molecular Biology, N. Delhi,
25. **Aug. 13th to 30th, 1993** DBT sponsored Training Program at Institute for Research in Reproduction, Mumbai on "Techniques in isolation and bioimmunological characterization of proteins",
26. **Feb. 7-9, 1991** UGC sponsored symposium on 'Popularizing biotechnological processes for rural and semi-urban areas', at Nagpur
27. **20th to 22nd December 1986** Annual Conference of Association of Microbiologists (India) at Department of Biochemistry, Nagpur University, Nagpur
28. **1979** Annual Conference of SBC (I) at Lucknow
29. **1978** Annual Conference of SBC (I) at N. Delhi