CURRICULUM VITAE

Name : **R P SINGH**

Date of Birth : **March 25th, 1956**

Education : **Ph.D.**

Area of Research : **Environmental Biotechnology, Microbial Technology, Bioprocess Development, Molecular Biology, Recombinant DNA Technology Immunology**

Mailing Address :

Professor
Department of Biotechnology
Indian Institute of Technology Roorkee
Roorkee-247 667, India
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EDUCATION :

* **1983 Ph.D.** — **Microbial Biochemistry, Central Drug Research Institute, Lucknow, Submitted to Kanpur University, Kanpur, India**

* **1979 M.Sc. I, 78.3%** — **Biochemistry, G.B. Pant University of Agriculture & Technology, Pantnagar, India**

*** 1975 B.Sc. I, 73.4%** **Chemistry, Botany, Zoology, Avadh University Faizabad, India**

ACADEMIC APPOINTMENTS:

March 17, 2006 - to date	**Professor, Department of Biotechnology Indian Institute of Technology Roorkee Roorkee-247 667, India.**
Oct 22, 2003 - March 16, 2006	**Associate Professor, Department of Biotechnology Indian Institute of Technology Roorkee Roorkee-247 667, India.**
Jan 01, 2001 - Dec 31, 2003	**Head, Department of Biotechnology Indian Institute of Technology Roorkee Roorkee-247 667, India.**
Nov 1997 - Dec 1998	**Visiting Scientist, Department of Biochemistry & Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR, USA.**
April 09, 1996 – Oct 21, 2003	**Assistant Professor, Department of Biotechnology Indian Institute of Technology (Formerly UOR) Roorkee-247 667, India**
April 23, 1990 – April 08, 1996	**Lecturer, Department of Biosciences & Biotechnology, University of Roorkee Roorkee- 247 667, India**
Nov 1986 – April 1990	**Research Fellow, Department of Pathology Harvard Medical School, Laboratory of Immunopathology, Dana Farber Cancer Institute Boston, MA, USA**
July1985 – Oct 1986	**Visiting Fellow, Laboratory of Biology of Viruses National Institutes of allergy & Infectious Diseases, National Institutes of Health Bethesda, USA**
Oct 1983 – June 1985	**Research Associate, Institute of Microbial Technology, Chandigarh, India**
Jan 1979 - Sept 1983	**Junior & Senior Research Fellow, Division of**

	Biochemistry, Central Drug Research Institute Lucknow, India
Oct 1976 - Dec 1978	**Graduate Teaching & Research Assistant Department of Biochemistry, G.B. Pant Univ of Ag & Technology, Pantnagar, India**

OTHER NOTABLE ASSIGNMENTS / RESPONSIBILITIES:

MAJOR :

1. ***Head*****,** Department of Biotechnology, Indian Institute of Technology (Formerly University of Roorkee), Roorkee: Jan 01, 2001 – Dec 31, 2003

2. ***Member*****,** Institute Administrative Committee, IIT Roorkee, 2001- 2003

3. ***Member*****,** Executive Committee of Senate, IIT Roorkee, 2002-2003

4. ***Member*****,** Senate, IIT Roorkee: 2002-2003 and 2005 to date

5. ***Member*****,** Academic Council, University of Roorkee, 1993-95, 2001

6. ***Chairman*****,** Executive Committee of the Department (ECD), Department of Biotechnology, IIT Roorkee, 2002- 2003.

7. ***Chairman,*** Departmental Faculty Board, Department of Biotechnology, IIT Roorkee, 2002- 2003

8. ***Officer on Special Duty(*** Security), IIT Roorkee, March 10, 2005 to date

9. ***Member,*** Postgraduate Academic Programme Committee, Department of Biosciences & Biotechnology, University of Roorkee, Roorkee: 1990 to 2000.
   Member, Department Research Committee, Department of Biotechnology, IIT Roorkee, 2002-2005
10. ***Chairman,*** Department Research Committee, Department of Biotechnology, IIT Roorkee, 2006-todate.
11. ***Chairman,*** Purchase Committee, Purchase of Equipments (30 Nos) from MHRD Non Plan Allocation, Department of Biotechnology, IIT Roorkee, 2006-07
12. ***Professor-in Charge,*** Guest House, IIT Roorkee, 2006-todate

13. **Member,** Advisory Committee for Educational Technology Cell, IIT Roorkee, May 2004 – 2006**,**
14. **Member,** Intellectual Property Rights Cell, IIT Roorkee, 2004-2006

15. Member , Commercial Establishment Committee, IIT Roorkee, April 2004 -2005,

16. Member, Discipline Committee of the IIT Roorkee, 2004 - 2005

***11.* Chairman,** Biomedical Waste Disposal Committee to frame guidelines for disposal of Biomedical wastes, 2004

***12. Member*, Expert Committee of AICTE**, Govt of India for reviewing the AICTE sponsored projects for North Western region.

***13. Member*, Expert** Committees of Department of Science & Technology (DST) and Department of Biotechnology (DBT), Govt. of India, to review the project proposals submitted for funding.

***14. Reviewer* for the following journals,**

Letters in Applied Microbiology, (**Blackwell,** UK),
Journal of Applied Microbiology (**Blackwell,** UK),
Water Research (**Elsevier,** The Netherlands),
World J Microbiology and Biotechnology (**Springer,** The Netherlands),
Enzyme and Microbial Technology (Elsevier, UK)
Process Biochemistry (**Elsevier**, France)
J Environmental Management (**Elsevier**, USA),
Biotechnology and Molecular Biology Reviews
(Academic Journals, Malaysia)

***15. Member*, Expert Committee** for Selection of Scientist at IIP, Dehradun (2001).

16. Ph D thesis* and *M.Sc. project *examiner* of Jiwajee University, Gwalior, G B Pant University, Pantnagar, CCS University, Meerut and Paper *setter/ examiner* for Universities and Commissions

***17. Staff Advisor*,** University Gymnasium, 1993-1996; Warden, Ganga Bhavan 1999-2000; Chief Warden, Ravindra Bhawan, 2004-to date.

18. ***Member-Contributor***, Scope Water Team, German Organization, Strategic Science Consult Ltd., Granted by German Federal Ministry of Education and Research Feb 2004-to date

19.***Member*,** Expert Group on Bioinstrumentation, Department of Biotechnology, Govt of India, Ministry of Science & Technology, New Delhi, Sept 2004 - to date

20.***Member,*** Organizing Committee, National Seminar on Biofertilizers: Prospects and

Constraints, University of Roorkee, Roorkee, India, April 15, 1997.

21. ***Member*****,** Organizing Committee, International Satellite Symposium on Complex Carbohydrates, University of Roorkee, Roorkee, India, Sept. 15-16, 1994.

*22.****Member*****,** Organizing Committee, National Symposium on Biophysics: 21-23 February 2003 & International Workshop on Education and Capacity Building in Biophysics: Needs of the Asian African Region, 24-25 February 2003, Department of Biotechnology, IIT Roorkee.

23. **Organizing Secretary,** National Workshop on IPR Curriculum for Engineering and Science Students, March 18-19, 2005, IIT Roorkee

24. ***Convener*****,** Security and Traffic Control, Convocation 2005, IIT Roorkee

24. ***Member-Expert*****,** Committee for recommending 'Young Scientist Award in Environmental Microbiology 'of Association of Microbiologists of India, 2005 – till date
25. ***Member, Board of Studies*** in Microbiology, Devi Ahilya University, Indore, 2005-2008

26. ***Convener,*** Biotechnology, IIT Roorkee, National Programme on Technology Enhanced Learning, MHRD, Govt. of India. June 2009 – todate.

27. ***Mmeber,*** Process Innovation and Process Intensification Network , UK 2004 - todate

27. ***Member -*** Expert , Bioprocess and Bioproduct Development, Department of Biotechnology, Govt of India, Ministry of Science & Technology, New Delhi, 2008 - to date

28. ***Mmeber-Expert,*** Committee on Genetically modified Organisms and Food, Food Safety and Standards Authority of India, Govt. of India, New Delhi, May 2009 - todate

TEACHING EXPERIENCE:

1. **Total period of teaching: 19 years** (July 1990 to date).

2. **<u>Postgraduate Courses taught</u>**: Cellular and Molecular Biology, Genetic Engineering, Microbiology, Recombinant DNA Technology, Immunology & Immunotechnology, Applied Microbiology, Vaccine Development & Production, Enzymology & Enzyme Technology, Molecular Carcinogenesis & Therapy,

General Biology, Biotechnology Laboratory I, II, & III, Nanobiotechnology.

3. **Undergraduate Courses taught**: Principles of Biotechnology , Fundamentals of Biotechnology, Immunotechnology, Nanobiotechnology

AWARDS / HONOURS:

1. **Best paper award** in the technical session at National Symposium 'Biohorizon 2006, IIT Delhi.

2. **The Ph.D. thesis** supervised & entitled "Bioconversion of Agro food byproducts to Gluconic acid by *Aspergillus niger*" was awarded "Innovation Potential Award 2001" by "*Indian National of Academy of Engineering".*

3. **Visiting Scientist, UAMS, Little Rock, Arkansas, USA, Nov1997 - Dec 1998**

4. **Cancer Research Institute, New York, USA Award ,1988 – 90**

5. **Research Fellow, Harvard Medical School, Boston, 1986-88**

6. **Research Officer, Harvard Medical School, Boston, 1988-90**

7. **Visiting Fellow, NIH, Bethesda, USA, 1985-1986**

8. **Research Associate, CSIR, Govt of India, 1983-84**

9. **Junior & Senior Research Fellowships of CSIR, Govt of India, New Delhi**

   1979-1983

9. **University Teaching/Research Assistantship, G B Pant University, Pantnagar, (1976 - 78)**

10. **National Merit Scholarship (1972 - 75)**

RESEARCH EXPERIENCE: 24 years

Areas of Research Interests:

1. Microbial bioconversion for production of value added products,
2. Proteomics & Genomics, active site engineering,
3. Enzyme engineering and applications
4. Recombinant DNA technology,

5. Biomass utilization for energy generation,
6. Bioremediation/biodegradation of chlorophenolic/industrial wastes.
7. Bioremediation of metallic wastes from industrial effluents
8. Nanobiotechnology

Specialized Training Courses/Workshops Attended:

1. "Workshop on Sophisticated Instruments" held at RSIC, CDRI, Lucknow, India, Oct 4-12, 1982
2. "Gene Cloning and DNA Sequencing" held at School of Biological Sciences, Madurai Kamraj University, Madurai, India, Dec 31, 1984 To Jan 21, 1985.
3. "Radiation Safety In The Laboratory" held at NIH, Bethesda, MD USA, Aug 01-31,1985.

Invited Lectures/Presentation in Conferences:

* Regulation of Tcr gene expression in resting T cells. G B Pant University, Pantnagar, August 25, 1992

* Isolation and characterization of microorganisms with potential abilities for sterol biotransformation into therapeutic steroids. National Symposium on Progress in Hormone Research, D A University, Indore June 20-22, 1994.

* Internalization of *Bacillus anthracis* lethal toxin into mammalian cells. 4th International Symposium of Cell. Surface Macromolecules, New Delhi, Jan 6-10, 1996

* Analysis of cellulases and B-glycosidase produced by co-cultivation of *Aspergillus niger* RK-3 and *Trichoderma reesei* MTCC Using *Eicchornia sp* biomass as a lignocellulosic waste. National Symposium on Bimolecular Electronics, NPL, New Delhi, Sept 16-17, 1999.

* Analysis of cellulases produced by a mutant of *Aspergillus niger* with *Eicchornia crassipes* biomass. National Symposium On Lignocellulose Biotechnology present and future prospects, University of Delhi, South Campus, Delhi, Dec.10h, 2001

* Gene therapy: Present and future perspectives, Bioinformatics Institute of India, Noida, January 29, 2001

* Gluconic acid production under varying fermentation conditions by *Aspergillus niger*. Process Innovation and Process Intensification Conference Heriot-Watt University, Edinburgh, Scotland, UK. Sept 8-13, 2002.

* Central Dogma of Molecular Biology, Bioinformatics Institute of India, Noida, Oct 05, 2002

* Engineering of Xylanolytic Organisms and Enzymes for Pulp and Paper Industries. Indo-US Workshop & National Congress on Molecular Biology & Biotechnological Symbiosis, JNU, New Delhi, March 23-28, 2003.

* Opportunities in Microbial Diversity and Role of Biological Resource Centres : Brain Storming Session. *In* Identification, Preservation and Conservation of Agriculturally Important Microorganisms amd Use of Potential Molecular Tools for Their Identification. NBAIM-CAB International, UK Joint Workshop, NBAIM, Pusa Campus, New Delhi, March 16-17, 2004.

* Microbial Diversity Intl Conf, Univ of Delhi, 2005

- Thapar Univ, Patiala, 2006
- CSJM Univ, Kanpur, 2007
- Delhi University, 2009

RESEARCH PROJECTS:

1. **" Regulation of rpt-1: an intracellular inducer/helper T-cell protein that affects HIV-1 and IL-2r expression, '', Cancer Research Institute, New York, USA, 1988 – 1990**

2. **Minor Projects, UP Government, Lucknow, 1990-95**

3. **" Microbial Biosynthesis of Steroids Especially for Combating Stress in Armed Forces Personnel '', DRDO, New Delhi, 1992-1995**

4. **" Cell Surface Membrane Glycoprotein: Biosynthesis, Regulation and Function, ", DST, New Delhi, 1992 – 1995**

5. **" Steroid 16a-hydroxylase: Immunochemical characterization and development of a molecular probe, " UGC, New Delhi, 1993 – 1996 .**

6. **"Development of Potent Microbial Strains and Critical Analysis of factors for Continuous Production of Gluconic acid,"UPCST, Lucknow, 2000 – 2002**

7. **"Bioprocess Development for Gluconic Acid Production from cheap carbohydrate sources", AICTE, New Delhi, 2002-2005**

10. "Fund for Improvement for Infrastructure in Science & Technology", DST, New Delhi ,2003-2008

CONSULTANCY PROJECT:

Evaluation of Twiga Insul (Glass Wool) against Fungi and Bacteria, U P T F, Bulandshahr, UP, Aug 2002 – Jan 2003.

DETAILS OF THE Ph.D. THESES SUPERVISED:

Awarded : 14
In Progress: 03

1. Bioprocess development of Citric acid production,
Mr. Sanjay Gupta, April 1995

2. Molecular and biochemical studies on anthrax lethal toxin,
Mr. P K Swain, April 1996

3. Influence of salinity on plant metabolism: some physiological and Biochemical changes in peanut seedlings (*Arachis hypogea* L.) with particular reference to cell wall proteins,
Ms. Neerja Srivastava, November 1996

4. Immunogenicity of plasma membrane proteins of *Mycobacterium* Species,
Ms. Anjana Mittal, October 1998

5. Bioconversion of agro-food byproducts to Gluconic acid by *Aspergillus niger,*
Mr. Om Vir Singh, November 2000

6. Studies on production of Itaconic acid by *Aspergillus terreus*,
Mr. C S K Reddy, November 2000

7. Microbial production of Cellulases for bioconversion of lignocellulosic wastes,
Mr. Raj Kumar, September 2001

8. Studies on biodegradation of chlorophenols by *Rhodococcus*,
   Ms Mandira Goswami, November, 2003

9. Studies on the kinetics and modeling of L-Glutamic acid fermentation
   Md. Noor Salam Khan, September 2005

10. Bioconversion of cheaper carbohydrate sources for lactic acid production,
    Ms. Ruma Ganguly, September 2005

11. Studies on the microbial production of xylynase by *Aspergillus niger*
    Ms. Nidhi Kapur, September 2005

12. Bioconversion of molasses for gluconic acid production.
    Mr. Amit Sharma, September 2006

13. Studies on the microbial production of laccase by *Aspergillus fumigatus*.
    Vivekanand, Feb 2009

14. Microbial production and application of alkalitolerant xylanases by
    Penicillium oxalicum,
    Ms. Pallavi Dwivedi, Nov 2009.

M.Sc. DISSERTATIONS SUPERVISED: 43

B. Tech. PROJECTS SUPERVISED: 02

M.Tech. PROJECTS SUPERVISED: 03

MEMBERSHIP OF PROFESSIONAL SOCIETIES:

- Life Member, Association of Microbiologists of India
- Life Member, Society of Biological Chemists, India
- Life Member, Bioinformatics Institute of India
- Elected Member, New York Academy of Sciences.

RESEARCH PUBLICATIONS

RESEARCH PAPERS:

1. **Singh, R.P.**, Kaul, S.M. and Shukla, O.P. (1980) Microbial decomposition of Pyridine carboxylic acids and isoniazid by bacilli. **Ind. J.Exp. Biol.**, **18**, 1514-1517.

2. Kaul, S.M., **Singh, R.P.** and Shukla, O.P. (1981). Metabolism of pyridine-N-oxide By Artrobacter sp.,. **Ind. J. Biochem. Biophys. 18S,** 112.

3. **Singh, R.P**. and Garg, G.K. (1983). Effect of diethyl malonate and alpha picilinic Acid on levels of inorganic nitrogen and tricarboxylic acid cycle enzymes in L-alanine utilizing *B. brevis*. **Ind. J. Biochem. Biophys. 20**, 39-42.

4. **Singh, R.P**. and Shukla, O.P. (1986). Isolation, characterization and metabolic Pathways of a *Bacillus sp* degrading isonicotinic acid and ionized. **J. Ferment. Technol. 64,** 109-117.

5. **Singh, R.P**. and Natarajan, V. (1987). Isolation and characterization of sequence Specific DNA binding factor using affinity chromatography. **Biochem.Biophys. Res. Comm. 147**, 65-70.

6. Patarca, R., Schawartz, J., **Singh, R.P.**, Kong, Q.T., Murphy, E., Anderson, Y., Sheng, F.Y., Singh, P., Johnson, K. A., Guarangia, S.M., Durfee, T., Blattner, F and Cantor, H. (1988). Rpt-1: an intracellular protein from inducer/helper T-cells that regulates gene expression of the interleukin-2receptor and the human immunodificiency virus type I. **Proc. Natl. Acad. Sci. USA**. *85,* 2733-2737.

7. Patarca, R., Freeman, G.J., **Singh, R.P**., Sheng, F.Y., Durfee, T., Blattner, F., Regnier, D.C., Kozak, C.A., Mock, B.A., Morse , H.C., Jerrells. T.R and Cantor, H (1989). Structural and functional studies of Eta-1 (Early-T-lymphocyte Activation -1) gene: Definition of a novel T-cell dependent re4sponse associated with resistance to bacterial infection. **J Exp. Med. 170**, 145-161.

8. Patarca,R., **Singh, R.P.**, Schwartz, J.L. and Cantor, H. (1989) Functional Characterization of the Eta-1 (Early T-lymphocyte activation -1) gene product and It's association with auto-immunity. **FEBS Letts. 5**, 1731.

9. Patarca, R., **Singh. R.P**. and Cantor, H. (1989). Gene regulatory cascade in T-cells And HTLV-1 tax gene product. **Recent Adv. Pharmacol. Therap Eds**. M.Velasco, A. Israel, E. Romero, H.Silva. Elsevier Sc.Publ. Biomed.Div. 195-198.

10. Patarca, R., **Singh, R.P**., Durfee, T., Freeman, G.J., Blattner, F and Cantor, H.(1989). Definition of T-cell specific DNA binding factor that interact with a 3'-silencer in CD4+ T cell generpt-1. **Gene**, **85**, 463-471.

11. Schwartz, J, **Singh, R.P.**, Teicher, B., Wright, J.E. , Trite, D.H. and Shklar, G.(1990) Induction od a 70kD protein associated with selective cytotoxicity of beta-carotene in human epidermal carcinoma. **Biochem.Biophys.Res. Comm. 169**, 941-946.

12. **Singh, R.P**., Patarca, R., Schwartz, J., Singh, P. and Cantor, H.(1990).Definition of specific interaction between early T-lymphocyte activation-1 (eta-1) protein and murine macrophages. **J Exp. Med. 171**, 1931-1942.

13. Patarca, R. **Singh, R.P**., Wei, F.Y., Iregui, M.V. Singh, P. Schwartz, J and cantor, H. (1990). Alternative pathways of T-cell activation and positive clonal selection. **Immunol. Rev. 116***,* 85-100.

14. Swain,P.K., Sarkar, N.K., Sharma,M., Goel,S., **Singh, R.P**. and Singh, Y. (1997). Cytotoxicity of antrax lethal factor microinjected into macrophage cells through Sendai Virus Envelope. **Ind. J Biochem. Biophys. 34**, 186-191.

15.. Singh, O.V, Pereira, B.M.J and **Singh, R.P** (1999). Isolation and characterization of a potent fungal strain *Aspergillus niger* ORS-4 for gluconic acid production. **J.Sc.Ind. Res**. **58**, 594-600.

16. Singh, O.V. and Singh, R.P. (1999). Isolation and mutagenesis for glucose oxidase overproducing strain of Aspergillus niger. Proc. 5th Asia-Pacific Biochem Engg. Conf, Thailand, p. 45-50.

17. Singh, R.P, Dhawan,P., Golden, C.,Kapoor,G.S., Mehta,K.D (1999). Inhibitor of p38 MAPK a-isoform induces low density lipoprotein receptor expression through activation of p42/44 MAPK cascade**. J.Biol.Chem. 274** (28), 19593-19600.

18. Singh, R.P and Kumar, R (2000). Advances in cellulose biotechnology. **In Innovative Approaches In Microbiology**, **Eds** Maheshwari, D.K and Dubey, R.C, BS Publs. Dehradun, India, 321-342.

19. Singh, R. P. and Kumar, R. (2001). Regulation of cholesterol biosynthesis and implications in carcinogenesis. Critical Rev. Oncogenesis, 12 (1), 15-29.

20. Kumar, R and **Singh, R.P.** (2001). Synthesis of Carboxymethylcellulase (CMCase) and β- glucosidase by *Aspergillus niger* RK-3 using natural and commercially available cellulosic substrates. **Biochem. Environ. Agric**.,eds. Mann,A.P.S.,Munshi, S.K.,Gupta, A.K., Kalyani Publ., New Delhi, India, 218-224.

21. Kumar, R and **Singh, R.P** (2001). Solid-state fermentation of Eicchornia cressipes biomass as a lignocellulosic biopolymer for cellulase and B-glucosidase production by co-cultivation of Aspergillus niger RK-3 and *Trichoderma reesei* MTCC-164. **Appl.Biochem.Biotechnol.** 96, 71-82.

22. Singh,O.V., Sharma, A. and Singh, R.P. (2001). Gluconic acid production by Aspergillus niger ORS-4.410 in submerged and solid state fermentation. **Ind. J Exp. Biol.** 39, 691-696.

23. Singh,O.V., Sharma, A. and Singh, R.P. (2001). Optimization of fermentation conditions for gluconic acid production by a mutant of *Aspergillus niger*. **Ind. J Exp. Biol.** 39, 1136-1143.

24. Singh, O.V and **Singh, R.P.** (2002). Utilization of agro-food by-products for gluconic acid production by *Aspergillus niger* ORS-4 under surface culture cultivation**. J. Sc. Ind. Res.** 61, 356-360.

25. Reddy, C.S.K. and **Singh, R.P.** (2002). Enhanced production of itaconic acid from corn starch and market refuse fruits by genetically manipulated *Aspergillus terreus* SKR 10**. Bioresource Technol.**. 85, 69-71.

26. Singh, O.V and **Singh, R.P.** (2002). Microbial fermentation for glucose oxidase by *Aspergillus niger*. **Proc Intl Cong Biol Med Engg** , Singapore, 115-116.

27. Goswami, M, Shivaraman, N and **Singh, R P** (2002). Kinetics of chlorophenol degradation by benzoate induced culture of Rhodococcus erythropolis M1. **World J Microbiol. Biotechnol.** 18: 779-783.

28. Singh, O.V, Jain R.K. and **Singh, R.P.** (2003).Gluconic acid production under varying fermentation conditions by *Aspergillus niger*. **J Chem Technol Biotechnol.** 78 : 208-212.

29. Singh, O.V. and Singh R.P. (2003). Utilization of Grape must for gluconic acid production using polyurethane sponge and calcium alginate immobilized cells of *Aspergillus niger* ORS 4.410. **Comm Agr Appl Biol Sc.** Belgium, 68 (2A), 253-254.

30. Singh, R. P., Kumar, Raj and Kapur, N. (2003). Molecular Regulation of Cholesterol biosynthesis : implications in Carcinogenesis. **J Env Pathol Toxicol Oncol.** 22 (2), 75-92.

31. Singh, R P, Kapur Nidhi and Singhal, V. (2005) Engineering of xylanolytic organisms and enzymes for pulp and paper industries. *In* **Biotechnological Applications of Microbes**, (A Varma and G K Podila eds.) I K Intl Publ, New Delhi, p 221-237.

32. Singh, O.V, Kapur Nidhi and **Singh, R.P.** (2005). Evaluation of agro- food byproducts for gluconic acid production by *Aspergillus niger* ORS-4.410. **World J Microbiol Biotechnol.** 21, 519-524.

33. Goswami, M, Shivaraman, N and **Singh, R.P.** (2005). Microbial metabolism of 2-chlorophenol, phenol and ρ-cresol by Rhodococcus erythropolis M1 in co-culture with *Pseudomonas fluorescens* P1. **Microbiol Res.** 160 (2), 101-109.

34. Khan, N.S., Mishra, I.M., **Singh, R.P** and Prasad, B. (2005). Modeling the growth

of *Corynebacterium glutamicum* under product inhibition in L-glutamic acid fermentation. **Biochem Eng J.,** 25, 173-178.

35. Singh, R.P., Dwivedi , P., Vivekanand and Kapur. N. (2006). Xylanases : structure, molecular cloning and regulation of expression, ***In*** **Lignocellulose Biotechnology : Future Prospects,** (Kuhad, R C.,ed) I K Intl Publ, New Delhi, pp 332-344.

36. Singh, O.V and **Singh, R.P.** (2006). Bioconversion of Grape must into modulated gluconic acid production by *Aspergillus niger* ORS- 4.410. **J Appl Microbiol.** 100 (5), 1114-1122.

37. Kapur N., Dutt,D., **Singh, R.P.,** Tyagi, C.H. and Vivekanand (2006). Effect of xylynases from *Aspergillus niger* NKUC3-0.2 mutant strain on prebleaching of wheat straw and mixed hardwood pulps. **Cellulose Chem Technol.** 40 (8), 635-641.

38. Ganguly, R., Dwivedi, P and **Singh, R.P.** (2007). Production of lactic acid with loofa sponge immobilized *Rhizopus oryzae* RBU2-10. **Bioresource Technol**. 98 (6),1246-1251.

39. Mayani, M., Mohanty, B. and **Singh, R.P.** (2007). A multi-kinetic approach to predict gluconic acid production in an airlift bioreactor. **Biotechnology J.** 2 , 1-9.

40. Singh, R.P., Vivekanand and Dwivedi, P. (2007). Laccase regulation and laccase dependent bioremediation. ***In*** **Biotechnology of Industrial Microorganisms : A Techno-Commercial Approach** (Maheshawari, D K and Dubey, R C., eds) I K Intl Publ, New Delhi. (accepted)

41. Sharma, A., Vivekanand, V. and **Singh R.P**.(2007). Solid-state fermentation for gluconic acid production form sugarcane molasses by *Aspergillus niger* ARNU-4 employing tea waste as the novel solid support. **Bioresource Technol**. 99 (9), 3444-3450.

42. Vivekanand V., Dwivedi P., Sharma A., Sabharwal N., **Singh R. P.** (2008). Enhanced delignification of mixed wood pulp by *Aspergillus fumigatus* laccase mediator system. **World J Microbiol Biotechnol** . 24 , 2799-2804.

43. Dwivedi P., Vivekanand V., Ganguly, R., **Singh R. P.** (2009). *Parthenium sp*. as a plant biomass for the production of alkalitolerant xylanase from mutant *Penicillium oxalicum* SAUE-3.510 in submerged fermentation. **Biomass and Bioenergy,** 33, 581-588.

44. Dwivedi, P., Vivekanand V., Pareek N., Sharma A, **Singh R. P.** (2010). Bleach enhancement of mixed wood pulp by xylanase-laccase concoction derived

through co-culture strategy. **Appl Biochem Biotechnol,** 160, 255-268**.**

45. Dwivedi, P., Vivekanand V., Pareek N., Sharma A, **Singh R. P.** (2010). Co-Cultivation of mutant *Penicillium oxalicum* SAUE-3.510 and *Pleurotus ostreatus* for simultaneous synthesis of xylanase and laccase under solid-state fermentation. (Communicated)

US PATENT

Mehta, K D. and **Singh, R. P.** (2003). P^{38} Inhibitor and Uses thereof**,** *US Patent No. 6,602,896 B1*.

RESEARCH PAPERS IN CONFERENCES

1. **Singh, R.P.**, Kaul, S.M. and Shukla, O.P. (1980). Metabolism of nicotinic , Isonicotinic and a-picolinic acids by bacilli. **48th Ann.Conf. Soc. Biol. Chem.** India

2. **Singh, R.P.**, Kaul, S.M. and Shikla, O.P. (1981). Characterization of a soil isolated Isonicotinic acid degrading *Bacillus sp.* **22nd Ann. Conf. Assoc. Microbiol.,** India

3. **Singh, R.P.**, and Shukla, O.P. (1981). Microbial oxidation of isonicotinic acid and And other pyridine compunds. **50th Ann. Conf. Soc. Biol. Chem., Bangalore,** India

4. **Singh, R.P**. (1982).Enzymatic mechanisms in INA degradation by *B.brevis* (INA) **51st Ann. Conf. Soc. Biol. Chem.,** India.

5. Swain, P.K., Sarkar,N.K., Goel, S., Sharma, M., **Singh, R.P.**, and Singh, Y. (1993). Translocation mechanisms of Anthrax lethal toxin. **62nd Ann. Conf. Soc. Biol. Chem.** India.

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