



RAM LAL ANAND COLLEGE (University of Delhi)
Faculty Details



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|--|--|---------------------|---------------|-----------|--------------|------------|
| Title | DR | First Name | RAKESH | Last Name | GUPTA | Photograph |
| Designation | PRINCIPAL | | | | | |
| Address | C-147 FIRST FLOOR EAST OF KAILASH NEW DELHI - 110021 | | | | | |
| Phone No | Office | 011-24112557 | | | | |
| | Residence | 011-26312330 | | | | |
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| Educational Qualifications | | | | | | |
| Degree | Institution | | | | Year | |
| PhD | NATIONAL DAIRY RESEARCH INSTITUTE (ICAR), KARNAL, HARYANA | | | | 1991 | |
| M.Sc | NATIONAL DAIRY RESEARCH INSTITUTE (ICAR), KARNAL, HARYANA | | | | 1987 | |
| Career Profile | | | | | | |
| <ul style="list-style-type: none">• Lecturer – 1991-2000: Ram Lal Anand College, University of Delhi• Post Doctoral Research Associate – 1999-2002: Center for Environmental Biotechnology and Department of Microbiology, University of Tennessee, Knoxville, TN, USA• Reader – 2000-2006: Ram Lal Anand College, University of Delhi• Associate Professor – 2006-2016: Ram Lal Anand College, University of Delhi• PRINCIPAL – SINCE 2016: RAM LAL ANAND COLLEGE, UNIVERSITY OF DELHI | | | | | | |
| Administrative Assignments (Since 2012) | | | | | | |
| <ul style="list-style-type: none">• Convenor - Career Counseling and Placement Cell (2012-14)• Co-Convenor – Admission Committee (session 2014-15)• Convenor – Admission Grievance Committee (2015-2016)• Member – Infrastructure Committee (Since 2013)• Member Sr Teacher Representative – Governing Body (2014-2015)• Member Curriculum Development Committee for B.Sc (H) Microbiology syllabus for DU students 2003 (Annual), 2010 (Semester), 2013 (FYUP), 2015 (CBCS)• UGC Member of Curriculum Development Committee for B.Sc (H) Microbiology syllabus under CBCS: 2014-15• Teacher in-Charge, Department of Microbiology: 2014-15 | | | | | | |
| Areas of Interest / Specialization | | | | | | |
| Molecular Biology Applied Microbiology | | | | | | |

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| Subjects Taught |
| <ul style="list-style-type: none"> • Molecular Biology • Food and Dairy Microbiology • Industrial Microbiology |
| Research Guidance |
| <ul style="list-style-type: none"> • Undergraduate level |
| Publications Profile (Books/Chapters/Research articles, etc.) (Last 10 publications) |
| <p>Research Publications</p> <ul style="list-style-type: none"> • Deval H, Katoch K, Chauhan DS, Tyagi AK, Gupta RK, Kamal R, Kumar A, Yadav VS, Katoch VM and T. Hussain (2016), TlyA protein of <i>Mycobacterium leprae</i>: a probable bio-marker of active infection, Leprosy Review, Vol. 87 (4) • Kaur J., Kaur S., Dashora V., Chaudhary Y., Nijhawan P., Saini S., Dabas M., Sharma K., Aggarwal R., Gupta V., Singh R., Pande P., Sharma SK., John S., Gupta RK. (2015) Microbiological and Physico-Chemical Quality of Groundwater at a Resettlement Colony, Madanpur Khadar in Delhi, India. DU Journal of Undergraduate Research and Innovation: 1 (3), 26-38. • Puri RV, Singh N, Gupta RK, Tyagi AK (2013) Endonuclease IV Is the Major Apurinic/Apyrimidinic Endonuclease in Mycobacterium tuberculosis and Is Important for Protection against Oxidative Damage. PLoS ONE 8(8): e71535. • Khare G., Gupta V., Nangpal P., Gupta R.K., Sauter N.K. and Tyagi A.K. (2011). Ferritin Structure from <i>Mycobacterium tuberculosis</i>: Comparative Study with Homologues identifies Extended C-terminus involved in Ferroxidase Activity. PLoS One, 4(6):e18570 • Gupta V[#], Gupta R.K[#], Khare G., Salunke D.M., Surolia, A., Tyagi, A.K. (2010) Structural ordering of disorderd ligand binding loops of biotin protein ligase into active confirmation as a consequence of dehydration. PLoS One, 5(2): e9222. # These authors contributed equally to this work • Khare G., Gupta V., Gupta R.K., Gupta R, Bhat R., Tyagi, A.K. (2009) Dissecting the Role of Critical Residues and Substrate Preference of a Fatty Acyl-CoA Synthetase (FadD13) of <i>Mycobacterium tuberculosis</i>. PLoS One, 4(12): e8387. • Gupta V., Gupta R.K., Khare G., Salunke D.M. and Tyagi A.K. (2009). Crystal Structure of Bfr A from <i>Mycobacterium tuberculosis</i>: Incorporation of Selenomethionine Results in Cleavage and Demetallation of Haem. PLoS ONE 4(11): e8028. • Gupta V., Gupta R.K., Khare G., Surolia A., Salunke D.M. and Tyagi A.K. (2008). Crystallization and preliminary X-ray crystallographic analysis of biotin acetyl CoA (BirA) from <i>Mycobacterium tuberculosis</i>. Acta Crystallogr Sect F Struct Biol Cryst Commun. 2008 Jun 1; 64 (Pt 6): 524-7. • Gupta V., Gupta R.K., Khare G., Salunke D.M. and Tyagi A.K. (2008). Cloning, expression, purification, crystallization and preliminary X-ray crystallographic analysis of bacterioferritin A from <i>Mycobacterium tuberculosis</i>. Acta Crystallogr Sect F Struct Biol Cryst Commun. 2008 May 1; 64 (Pt 5): 398-401. • Sanseverino J., Gupta R.K., Layton A.C., Patterson S.S., Ripp S.A., Saidak L., Simpson M.L., Schultz T.W., Saylor G.S. (2005). Use of <i>Saccharomyces cerevisiae</i> BLYES expressing bacterial bioluminescence for rapid, sensitive detection of estrogenic compounds. Appl Environ Microbiol. ; 71(8): 4455-60. |

- Patterson S.S., Dionisi H.M., **Gupta R.K.**, Saylor G.S. (2005). Codon optimization of bacterial luciferase (lux) for expression in mammalian cells. *J Ind Microbiol Biotechnol.*; 32(3):115-23.
- **Gupta, R. K.**, S. S. Patterson, S. Ripp, A. C. Layton, and G. S. Saylor. (2004). A yeast reporter strain expressing bacterial bioluminescence for rapid sensitive detection of estrogenic compounds, p. 283-291. In M. S. Reddy and S. Khanna (ed.), **Biotechnological Approaches for Sustainable Development**, Allied Publishers, New Delhi, India.
- Patterson S.S., Dionisi H.M., **Gupta R.K.**, Ripp S.A. and Saylor G.S. (2004). Expression and stabilization of bacterial luciferase in mammalian cells. *Proc. Of The International Society of Optical Imaging (SPIE)*; 5325: 115-121, **Optical Diagnostics and sensing IV**: Gerard L. Cote, Alexander V. Priezhev, (eds.)
- **Gupta, R.K.**, S.S. Patterson, S. Ripp, G.S. Saylor. (2003). Expression of the *Photobacterium luminescens* lux genes (luxA, B, C, D, and E) in *Saccharomyces cerevisiae*. *FEMS Yeast Research*, 4: 305-313.
- Cherian, S., **Gupta R.K.**, Mullin B.C., and Thundat T, (2003). Detection of heavy metal ions using protein-functionalized microcantilever sensors. *Biosensors and Bioelectronics*; 19(5): 411-514.
- **Gupta R.K.**, Dobrista S., Stiles C.A., Essington M.E., Liu Z., Chen C., Serpersu E.H., Mullin B.C. (2002). Metallothioneins: A new class of plant metal binding proteins. *J Protein Chemistry*, 21(8), 529-536.
- Maillet C., **Gupta R.K.**, Schell M.G., Brewton R.G., Murphy C.L., Wall J.S., Mullin B.C. (2001). Enhanced capture of small Histidine-containing polypeptides on membranes in the presence of ZnCl₂. *Biotechniques*: 30 (6) 1224-1230.

Review, Popular Articles and book chapters:

- **Gupta RK.** 2015. Microscopic Techniques to Identify & characterize bacteria -II, Virtual Learning Environment, ILL, University of Delhi
- **Gupta RK.** 2015. Microscopic Techniques to Identify & characterize bacteria -I, Virtual Learning Environment, ILL, University of Delhi
- **Gupta RK.** 2014. Application of Microorganisms in Food and Dairy Industry, Virtual Learning Environment, ILL, University of Delhi
- **Gupta RK.** 2013. Nutritive Value of Foods and Fermentation Technology in Food Science. Chapter in book on 'Science & Life' Foundation Course FYUP published by Delhi University. Publishers - University Press.
- **Gupta RK.** 2007. Food Preservation. E-Book on Food and Industrial Microbiology Published by NISCAIR, New Delhi. <http://hdl.handle.net/123456789/305>.

Conference Organization/ Presentations (in the last three years)

- Sharma S, Akanksha, Joshi M, Chopra U, Sharma A, Barik V, Mehta S, Jyoti N, Rashmi, Sharma SK, Gupta V, Hooda S and **Gupta RK.** Occurrence of carbapenem and multidrug resistant Gram positive bacteria in air of overcrowded subway metro stations in Delhi, India. 57th Annual Conference and International Symposium of Association of Microbiologists of India, Guwahati, Assam, 24-27 November 2016.
- Sharma S, Akanksha, Joshi M, Chopra U, Sharma A, Barik V, Mehta S, Jyoti N, Rashmi, Sharma SK, Gupta V, Hooda S and **Gupta RK.** Dissemination of antimicrobial resistance among aeromicroflora of Delhi environment: a serious public health implication. International Conference on Strategies for Environmental Protection and Management (ICSEPM-2016), JNU, New Delhi, 11-13 December, 2016,

- 56th Annual Conference of Association of Microbiologists of India (AMI-2015) & International Symposium on Emerging Discoveries in Microbiology organized by JNU, New Delhi, December 7-10, 2015.
- Workshop/Orientation program for Foundation Course 'Science & Life' under FYUP of University of Delhi "Nutritive Value of Foods and Fermentation Technology in Food Science" held on 21st June – 22nd June 2013 held at CPDHE Center, University of Delhi.

Research Projects (Major Grants/Research Collaboration)

- DBT sponsored project entitled "Betel Nut Chewing Induced Genotoxic Changes–Evaluation and Awareness Study in Young Population of North Eastern State of India" for the year 2018-19 as Co-PI, Grant received Rs 8.00 Lacs.
- Delhi University Innovation project for Colleges entitled "Dissemination of Antibiotic Resistance among Airborne Bacteria and its Public Health Implications" for the year 2015-16. Grant received Rs 6 Lacs.
- Delhi University Innovation project for Colleges entitled "Potable water in Delhi and NCR – Assessment of quality, resources and remediation" for the year 2013-15. Grant received Rs 5 Lacs.
- Delhi University Innovation project for Colleges entitled "Delineation of Groundwater Potential and Potable Quality in and around South Campus (University of Delhi) Ridge Area" for the year 2012-2013 in association with Geology Department. Grant Received Rs Ten Lacs.

Awards and Distinctions

- United Nations Development Program (UNDP) Fellowship from 1984-1987

Association With Professional Bodies

- Association of Microbiologists of India – Life Member
- Biotechnology Research Society of India – Life Member
- Probiotic Society of India – Life Member

Other Activities

Patents : US Patents Granted

1) Lux Expression in Eukaryotic cell. US Patent Number - 7300792, Date of Issue – 11/27/2007: **Gupta Rakesh K**, Patterson Stacey S, Sayler Gary S, Ripp Steven.

2) Destabilized Bioluminescent Proteins. US Patent Number – 7250284, Date of Issue – 07/31/2007
Allen Michael S, **Rakesh Gupta**, Gary Sayler

US Patents Published Application

Compositions and methods for detecting estrogenic agents in a sample. US Patent Application 20060008837, Date of Publication – 12/07/2006, Sanseverino John, Layton Alice, **Gupta Rakesh**, Sayler Gary, Ripp Steven, Patterson Stacey

International Patent Publications

1) Novel Plant Glycine and Histidine-Rich Metal-Binding protein family and uses thereof. Pub Number – WO/2005/021577, Date of publication – 10/03/2005, Mullin Beth C, **Gupta Rakesh Kumar**, Dobrista Svetlana V.

2) Modified Luciferase Nucleic Acids and Methods of Use, Pub Number – WO/2004/042010, Date of Publication – 21/05/2004, Patterson Stacey, **Gupta Rakesh**, Saylor Gary, Dionisi Hebe.