




University Faculty Details Page on DU Web-site

Title	Professor	First Name	Ashok Kumar	Last Name	Prasad	Photograph 
Designation	Professor					
Department	Department of Chemistry					
Address (Campus)	North Campus, University of Delhi, Delhi - 110 007					
(Residence)	38/13, Probyn Road, Delhi University, Delhi - 110 007					
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Education						
Subject	Institution	Year	Details			
Ph.D.	University of Delhi	1990	Subject: Chemistry			
M.Phil.	University of Delhi	1987	Subject: Chemistry			
M.Sc.	University of Bihar	1985	Subject: Chemistry			
B.Sc.	University of Bihar	1983	Subject: Chemistry (Hons)			
Career Profile						
Organization / Institution	Designation	Duration	Role			
University of Delhi	Professor	June 2009- todate	Teaching & Research			
University of Delhi	Associate Professor	2001-2009	Teaching & Research			
University of Southern Denmark, Denmark	Visiting Associate Professor	2008-2009	Honorary Position			
Japan Advance Institute of Science Technology	Visiting Professor	2015-16	Honorary Position			
University of Delhi	Scientist 'B'	1996-2001	Research			
University of Southern Denmark, Denmark	DANIDA (Denmark) Fellow	1992-1996	Research			
Department of Chemistry, University of Delhi	Senior Research Associate	1991-1992	Research			
Ranbaxy Research Laboratories, Delhi	Research Associate	1990-1991	Research			
Research Interests / Specialization						
<i>Nucleic Acid Chemistry</i> : Novel Synthesis of modified nucleosides of biological importance; <i>Biocatalysis and Biotransformations</i> : Green Synthetic Methodology Development; <i>Chemistry of Natural Products</i> : Isolation of Bioactive compounds; and Synthesis of Bioactive Heterocyclic Compound.						
Teaching Experience (Subjects/Courses Taught)						
16 Years teaching experience: Organic Chemistry, Bioorganic Chemistry, Photochemistry and Pericyclic Reaction, Organic Reaction Mechanism.						
Honors & Awards						
<ul style="list-style-type: none"> • Visiting Professor at Japan Advance Institute of Science Technology, Nomi Ishikawa, Japan (2015-16) • Excellence in Carbohydrate Research- 2015 by Association of Carbohydrate Chemists & Technologists (India)ISCB Award for Excellence in Chemical Sciences- 2014 • Honorary Diploma for Scientific Achievements and International Scientific Collaboration by Russian International Charitable Foundation "Scientific Partnership", Moscow, Russia (March 2013) • Honorary Visiting Ass. Professor, Department of Physics and Chemistry, University of Southern Denmark, Denmark • INBRE Lecture (June 2008) • DANIDA (Denmark) Fellow: 1992-1996 						

- The CRSI Young Scientist Award- 2007
- Senior Research Fellow (1989): CSIR, New Delhi
- Junior Research Fellow (1986): CSIR, New Delhi
- Junior Research Fellow (1986): UGC-NET, New Delhi
- National Merit scholarship: Government of India, Sessions 1982-83 and 1983-84 during MSc

Publications

Books / Monographs

<u>S. No.</u>	<u>Year of Publication</u>	<u>Title</u>	<u>Book</u>	<u>Co-Author</u>
1.	2005	Biocatalytic Protecting Group Chemistry on Sugars, Nucleosides and their Analogs	Biocatalysis: Chemistry and Biology	Gaurav Shakya

In Indexed/ Peer Reviewed Journals

<u>S. No.</u>	<u>Year of Publication</u>	<u>Title</u>	<u>Journal</u>
1.	2012	Calreticulin transacetylase mediated activators of human platelet nitric oxide synthase by acetyl group donor compounds.	<i>Nitric Oxide: Biology and Chemistry</i> 26, 9-19.
2.	2012	Aryl alkyl ketones, benzophenones, desoxybenzoin and chalcones inhibit TNF- α induced expression of ICAM-1: Structure-activity analysis	<i>Arch. Pharm. Chem. Life Sci.</i> 345, 368-377.
3.	2012	O-Aryl α,β -d-ribofuranosides: synthesis & highly efficient biocatalytic separation of anomers and evaluation of their Src kinase inhibitory activity	<i>Bioorg. Med. Chem.</i> 20, 6821-30.
4.	2012	Selective biocatalytic acylation studies on 5-O-(4,4'-Dimethoxytrityl)-2,3-secouridine: An efficient synthesis of UNA monomer	<i>Nucleosides, Nucleotides and Nucleic Acids</i> 31, 831-40.
5.	2012	Design, synthesis and biological activity evaluation of regioisomeric spiro-(indoline-isoxazolidines) in the inhibition of TNF- α -induced ICAM-1 expression on human endothelial cells	<i>MedChemComm.</i> 3, 1536-1547.
6.	2012	In vitro platelet antiaggregatory properties of 4-methylcoumarins	<i>Biochimie</i> 94, 2681-2686
7.	2012	DAMTC regulates cytoskeletal reorganization and cell motility in human lung adenocarcinoma cell line: An integrated proteomics and transcriptomics approach	<i>Cell Death and Disease</i> 3, e402
8.	2012	Synthesis and Conformational Analysis of Fluorinated Pipecolic Acids	<i>Synlett</i> 23, 2421-25.
9.	2012	Stereocontrolled oxidative additions upon N-alkyl-1,4-dihydropyridines: Synthesis of hexahydrofuro[2,3-b]pyridine derivatives	<i>Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry</i> 51, 1123-1130
10.	2012	Sugar-PEGylated polymers for drug delivery applications	<i>Trends in Carbohydrate Research</i> 4, 1-9.

11.	2013	Ethyl-3',4',5'-trimethoxythionocinnamate modulates NF- κ B and Nrf2 transcription factors	<i>Eur. J. of Pharm.</i> 700, 32-41.
12.	2013	Stereocontrolled oxidative additions upon 1,4-dihydropyridines: Synthesis of hexahydrofuro[2,3-b]pyridine and hexahydropyrano[2,3-b]pyridine derivatives.	<i>Synth. Comm.</i> 43, 520-536.
13.	2013	A novel cinnamate derivative attenuates asthma features and reduces bronchial epithelial injury in mouse model	<i>International Immunopharmacology</i> 15, 150-159.
14.	2013	Sugar-Modified Mercaptoacetamido-linked Nonionic Nucleoside Dimer.	<i>Trends in Carbohydrate Research</i> 5, 35-42.
15.	2013	Economical route for oxidative cleavage of double bond to synthesize taxol side chain	<i>Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry</i> 52, 379-86
16.	2013	Design and synthesis of LNA-based mercaptoacetamido-linked nucleoside dimers.	<i>Nucleosides, Nucleotides and Nucleic Acids</i> 32, 256-72.
17.	2013	Synthesis and antimicrobial activity of pyrimidine chalcones	<i>Med. Chem. Res.</i> 22(11), 5624-31.
18.	2013	Sugar-modified mercaptoacetamido-linked nonionic nucleoside dimer	<i>Trends in Carbohydrate Research</i> 5 (2), 35-42
19.	2013	Modified oligonucleotides: Strides towards antisense drugs	<i>Trends in Carbohydrate Research</i> 5 (3), 1-7.
20.	2014	Effect of acyl chain length on selective biocatalytic deacylation on O-aryl glycosides and separation of anomers	<i>Bioorg. Chem.</i> 53, 83-91
21.	2014	Nucleic acid therapeutics: Basic concepts and recent developments	<i>RSC Adv.</i> 4 (32), 16618-16631
22.	2014	Synthesis and evaluation of 2,2-dimethylchroman derivatives as inhibitors of ICAM-1 expression on human endothelial cells	<i>J. Het. Chem.</i> Article in Press
23.	2014	Synthesis of triazole linked LNA-based nonionic nucleoside dimers using click reaction	<i>Curr. Org. Synth.</i> 11, 1-10.
24.	2014	Synthesis of potential bioactive novel 7-[2-hydroxy-3-(1,2,3-triazol-1-yl)propyloxy]-3-alkyl-4-methylcoumarins	<i>J. Het. Chem.</i> Article in Press
25.	2014	Cu(I)-catalyzed efficient synthesis of 2'-triazolo-nucleoside conjugates	<i>J. Het. Chem.</i> Article in Press
26.	2014	Chemoenzymatic convergent synthesis of 2'-o,4'-c-methyleneribonucleosides	<i>J. Org. Chem.</i> 79 (13), 6336-6341
27.	2015	Design and Synthesis of Triazole-Linked xylo-	<i>Nucleosides, Nucleotides and Nucleic</i>

		Nucleoside Dimers	<i>Acids</i> 34, 388-399.
28.	2015	Synthesis of potential bioactive novel 7-[2-hydroxy-3-(1,2,3-triazol-1-yl)propyloxy]-3-alkyl-4-methylcoumarins.	<i>J. Heterocyclic Chem.</i> 52, 1-14.
29.	2015	Mild and Efficient Palladium / BrettPhos-catalyzed Methoxylation and deuteriomethoxylation of Activated Aryl Bromides.	<i>Tetrahedron Letts.</i> 56, 2234-2237.
30.	2015	Structure-activity Relationship Studies of 4-Methylcoumarin Derivatives as Anticancer Agents	<i>Pharma. Biol.</i> 2015 , DOI: 10.3109/13880209.2015.1016183.
31.	2015	Self-assembly, Photoresponsive Behaviour and Transport Potential of Azobenzene Grafted Dendronized Polymeric Amphiphiles	<i>RSC Adv.</i> 5, 48301-48310
32.	2015	Highly Selective Biocatalytic Transesterification Reactions on Aryl 3-hydroxy-2-(hydroxymethyl)-2-methylpropanoates	<i>Catalysis Letters</i> 145, 919.
33.	2015	Facile Access to 5'-S-(4,4'-Dimethoxytrityl)-2',5'-dideoxyribonucleosides via Stable Disulfide Intermediates	<i>Current Protocols in Nucleic Acid Chemistry</i> DOI: 10.1002/0471142700.nc0134s62.
34.	2015	Anti-inflammatory and Antioxidant Properties of Piper Species: A Perspective from Screening to Molecular Mechanisms	<i>Current Topics Med. Chem.</i>
35.	2015	Inhibition of Alzheimer's BACE-1 by 2,6-Dialkyl-4-chromon-3-yl-1,4-dihydropyridin-3,5-dicarboxylates.	<i>Med. Chem. Res.</i> 2015 , 24, 3230-3241.
36.	2015	Nucleic Acid Based Therapeutics: Harnessing the Specificity	<i>Research Journal of Contemporary Concerns.</i> 9(B), 3-8.
37.	2015	Facile Access to 5'-S-(4,4'-Dimethoxytrityl)-2',5'-Dideoxyribo-nucleosides via Stable Disulfide Intermediates	<i>Current protocols in Nucleic Acid Chemistry</i> , 2015 , 62, 1-9.
38.	2015	Synthesis of potential bioactive novel 7-[2-hydroxy-3-(1,2,3-triazol-1-yl)propyloxy]-3-alkyl-4-methylcoumarins	<i>J. Het. Chem.</i> 2015 , 52, 1-14.
39.	2015	Design and Synthesis of Triazole-Linked xylo-Nucleoside Dimers	<i>Nucleosides, Nucleotides and Nucleic Acids</i> 2015 , 34, 388-399.
40.	2015	Cu(I)-Catalyzed Efficient Synthesis of 2'-Triazolo-nucleoside Conjugates	<i>J. Het. Chem</i> 2015 , 52, 701-710.
41.	2015	Biocatalytic route to C-3'-azido/-hydroxy-C-4'-spiro-oxetanoribo-nucleosides Biocatalytic route to C-3'-azido/-hydroxy-C-4'-spiro-oxetanoribo-nucleosides	<i>Carbohydrate Research</i> 2015 , 417, 19-26.
42.	2015	Gapmer Oligonucleotides: Sugar-modified Wings to Antisense Therapeutics	<i>Trends Carbo. Res.</i> 2015 , 7, 28-43.

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| 43. | 2015 | A general, mild and efficient palladium-catalyzed 2,2,2-trifluoroethoxylation of activated aryl bromides and bromo-chalcones: bromo-chalcones a new coupling partner in cross-coupling reaction | <i>Tetrahedron</i> 2015 , <i>71</i> , 8307-8314. |
| 44. | 2015 | Synthesis of β -C-Glycopyranosyl Aldehydes and 2,6-Anhydro-heptitols | <i>J. Org. Chem.</i> 2015 , <i>80</i> , 11169-11174. |
| 45. | 2016 | Structure-activity relationship studies of 4-methylcoumarin derivatives as anticancer agents | <i>Pharmaceutical Biology</i> , 2016 , <i>54</i> , 105-110. |
| 46. | 2016 | Synthesis of 3'-azido/-amino-xylobicyclonucleosides | <i>RSC advances</i> 2016 , <i>6</i> , 17713-17719. |
| 47. | 2016 | Sugar-based novel chiral macrocycles for inclusion applications and chiral recognition | <i>Carbohydrate Res.</i> 2016 , <i>421</i> , 25-32. |

Patents

1. Regioselective Acylation of Nucleosides **Ashok K Prasad**, Virinder S Parmar, Rajendra K Saxena and Gaurav Shakya, PCT: **WO2011 / 030353 (International PCT Application No. PCT/IN2010/000594)**.
2. Regioselective Acylation of Nucleosides **Ashok K Prasad**, Virinder S Parmar, Rajendra K Saxena and Gaurav Shakya, *Indian Patent Application No. 1885/DEL/2009*.
3. Dihydropyrimidinone compounds for the treatment of cardiovascular diseases and process for preparing the same VS Parmar, HG Raj and **Ashok K Prasad** *International Patent Application No. PCT/IN2009/000344*.
4. Coumarin Compounds for the treatment of Cardiovascular diseases and a process for preparing the same VS Parmar, HG Raj, SC Jain and **Ashok K Prasad** *International Patent Application No. PCT/IN2009/000359*.
5. Dihydropyrimidinone compounds for the treatment of cardiovascular diseases and process for preparing the same VS Parmar, HG Raj and **Ashok K Prasad** *Indian Patent Application 1414/DEL/2008*.
6. Coumarin Compounds for the treatment of Cardiovascular diseases and a process for preparing the same VS Parmar, HG Raj, SC Jain and **Ashok K Prasad** *Indian Patent Application 1495/DEL/2008*.
7. Coumarin Compounds for the Treatment of Mycobacterial Infections. Virinder S Parmar, Ashok K Prasad, Sunil K Sharma, HG Raj, Rashmi Tandon and Mridula Bose *International PCT Application No. PCT/IN2012/000242*.

Conference Presentations

1. Novel Anti-inflammatory Molecules from *Piper* Species at "Perspective and Challenges in Chemical and Biological Sciences" organized by IASST(Guwahati) and ISCBC(Lucknow), Guwahati, 28-30th Jan. 2012.
2. Glucose to Modified Nucleosides and pH sensitive Polymer for Drug Delivery Applications at "Frontiers in Pharmaceutical Sciences: Global Perspectives" organized by University of Rhode Island, USA, 28-30th Sept. 2012.
3. Glucose to pH sensitive Sugar-PEG Based Polymer and LNA Monomers: A Biocatalytic Approach at Department of Chemistry, Punjab University, 13-14th Feb. 2012.
4. Novel Nucleic Acid Architecture: Towards Antisense Drug Development at "Medicinal Chemistry and Pharmaceutical Sciences" organized by NIPER(RBL)-CDRI, Lucknow, 23-25th Feb. 2012.
5. Glucose to LNA and PEGylated Polymers for Targeted Drug Delivery Applications: Biocatalytic Approach at "National Seminar on Recent trends in Chemistry" organized by department of Chemistry, Sri Venkateshwara College, University of Delhi, 20-22 March 2012.
6. Biocatalysis: Synthesis of LNA and Sugar-PEG Based Co-Polymer for Drug Delivery Applications. Lucknow Univ. March 2012.

7. Greener Methodologies for Synthesis of LNA and Sugar-PEG Based Co-Polymer for Drug Delivery Applications. Professional Development Course, BHU, Varanasi, March 2012.
8. Natural Products and Their Analogs as Anti-inflammatory and Anti-TB Agents, BHU, Varanasi, March 2012.
9. Glucose to LNA, Nonionic Nucleoside Dimers and Sugar-PEG Based Co-Polymer for Drug Delivery Applications, Department of Chemistry, BITS, Pilani, May 2012.
10. Glucose to Modified Nucleosides and pH Sensitive Polymers for Drug Delivery Applications in National Conference CARBO XXVII on Prospects and Perspectives of Glycoscience and Allied Technology held at CFTRI, Mysore on 11 - 14 December 2012.
11. Chemoenzymatic Synthesis of Nucleosides and pH sensitive Sugar-PEG Co-Polymer of Importance at DRDE, Gwalior, Feb. 2013.
12. Glucose to Nucleosides and pH sensitive Sugar-PEG Based Co-Polymer of Importance: A Biocatalytic Approach at "Catalysis applied to biomass-towards sustainable processes and chemicals" organized by Universite De Technologie De Compiegne, France, 12-13th March 2013.
13. at "21st ISCB International Conference (ISCBC- 2015) organized by CDRI Lucknow, 25-28 February 2015.
14. Biocatalytic route to therapeutically important sugar modified nucleosides at "Catalysis applied to biomass-towards sustainable processes and chemicals" II organized by Universite De Technologie De Compiegne, France, 27-28th March 2014.
15. Glucose to Novel Nucleosides and Macrocyclic Architectures, MS University Baroda, Badodara, 17 July 2015.
16. Glucose to Novel Nucleosides and Macromolecules of Importance, Gorakh University, 13 July 2015.
17. Sugar Based Chiral [2]Pseudorotaxane and Amphiphiles for Drug Delivery Applications. ICMR Laboratory, Bhubaneswar, April 2015.
18. Sugar Modification for the Synthesis of Novel Nucleosides, Amphiphiles and Macromolecules of Importance. Indi-Japan International Symposium at JAIST, Japan, 2-3 March 2015.

Total Publication Profile

Books: 1

In Indexed/ Peer Reviewed Journals 40

Patent 7

Conference Presentations 18

Professional Societies Memberships

- Membership of "International Society for Nucleosides, Nucleotides and Nucleic Acids", France
- Life membership of "Indian Science Congress Association", Calcutta
- Life member of "Chemical Research Society of India (CRSI)", Bangalore
- Life member of "Association of Carbohydrate Chemists and Technologists (India)"

- Life member of “Indian Society of Chemists and Biologists”, Lucknow
- Life Member of “Biotechnology Research Society of India”

Projects (Major Grants / Collaborations)

Principal Investigator, DU-DST Purse Grant Research Project entitled “Enzyme-mediated transformations of potential applications in environment and pharmaceutical sectors” (2010-2013).

Principal Investigator, DBT Research Project entitled “Biocatalytic synthesis and development of PEG-sugar based polymeric architectures for applications in drug delivery” (2009-2013).

Principal Investigator, NMPB Research Project entitled “Development of natural products/natural-product based cardiovascular agents” (2010-2013).

Co-Principal Investigator, IGSTC Research Project entitled “Chemoenzymatic synthesis and development of biodegradable, structurally persistent core-shell nano-architectures for drug delivery applications” (2012-15).

Principal Investigator, DRDO Research Project entitled “Chemical Synthesis and Characterization of 7,8-Diacetoxy-4-Methylthiocoumrins for Evaluation of its in vitro efficacy in Radiprotection and Mitigation” (2012-13).

Principal Investigator, DRDO Research Project entitled “Synthesis and Studies on Fire Extinguishing Capabilities of Some Fluorophosphonodiester and Fluorophosphotriesters” (2013-15).

Principal Investigator, DRDO Research Project entitled “Synthesis Characterization, Cytotoxicity and Cellular Uptake Study of Sugar-PEG Based Amphiphiles as Potential Delivery Agents” (2015-16).

Principal Investigator, Rasayan research project entitled “Synthesis of nucleoside- based bioactive compounds and their precursors” (2015-16).

Other Details