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Research and Professional Experience

- **Associate Professor** [Dec 16, 2022 - Till], Department of Chemistry, Hansraj College University Enclave, University of Delhi, Delhi-110007.
- **Assistant Professor** [Dec 15, 2014 – Dec15, 2022], Department of Chemistry, Hansraj College University Enclave, University of Delhi, Delhi-110007.
- **Research Collaborator** [July 2021-] Mayo Clinic Florida USA (Employee ID, 309707; Person ID, 309707).
- **Assistant Professor - Affiliate** [October 1, 2018 – September 30, 2021], Department of Medicine, Stritch School of Medicine, University of Loyola, Chicago, United States of America.
- **Affiliate Professor** [September 1, 2019 – August 30, 2022], Department of Pharmaceutical Chemistry, University of Debrecen, Debrecen, Hungary.
- **Visiting Assistant Professor** [August 1, 2016 - July 31, 2017], Department of Chemistry, Massachusetts Institute of Technology (M.I.T.), 77 Massachusetts Avenue, Cambridge, MA 02139 United States of America (Advisor: Prof. Alexander M Klibanov).
- **Assistant Professor (Ad-hoc)** [Aug 5, 2010-Dec 14, 2014], Department of Chemistry, Sri Venkateswara College, University of Delhi, New Delhi-110021.
- **Principal Investigator** [2011 - 2014], Department of Chemistry, University of Delhi, *Title of the Project*: “Novel functionalized tetrahedral activated small peptidomimetic inhibitors of malarial aspartic proteases, plasmepsin I and plasmepsin II” *Funding Agency*: Department of Science and Technology, Ministry of Science and Technology, Government of India.
- **Ph. D. in Chemistry** [2004 – 2010], Department of Chemistry, University of Delhi, Delhi- 110007 India. Title of the Thesis: “**Synthesis, Conformational Features and Reactivity Studies of Sym N,N',N''-Triarylguanidines**”. Advisor: Prof. Natesan Thirupathi.
- **M. Sc. in organic Chemistry** [2001 - 2003]: Division: First
- **B. Sc.** [1999 - 2001]: Division: First

Patent (International) – Filed/Granted

- Brijesh Rathi, Snigdha Singh, Neha Sharma, Poonam, Agam P Singh, Ravi Durvasula, Prakasha Kempaiah “Hydroxyethylamine-based piperazine compounds, and methods of producing and using the same for treating disease” (US Patent App. 11,485,714 B2; 1 Nov. 2022) **Granted**.
 - Steven Bradfute, Brijesh Rathi, Yash Gupta, Poonam, Ravi Durvasula, Prakasha Kempaiah “Calxinin Compositions and Method for Treating Viral Infections” (PCT/US22/26943; April 29, 2022).
 - Zoltner Martin, Zahedifard Farnaz, Brijesh Rathi, Neha Sharma, Meenakshi Bansal “Phthalimide-based substances with antiprotozoal activity and their use in therapy” (Czech patent application number, PV 2021-408; 03 September 2021).
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Patent (Indian) -Filed

- Brijesh Rathi, Prakasha Kempaiah, Agam P Singh, Snigdha Singh, Yash Gupta, Neha Sharma, Poonam, Ravi Durvasula, “Hydroxyethylamine-based Piperazine Compounds, and Methods of Producing and Using the Same for Treating Disease” Application No. *INDIA Patent No: 202011056923* was filed on Apr 29, 2021.
- Neha Sharma, Brijesh Rathi, Agam P Singh “Novel Antiparasitic Agents Based on Piperazine and Uses thereof” (Patent Filed; Application No. 202011043767; 08 October 2020).

Research Publications (Citation: 2062; h-index: 25)

1. Sharma, H.; Kumar, M.; Sethi, A.; Poonam; Rathi, B.* “Metal-free construction of aminated isoquinoline frameworks from 2-(2-oxo-2-arylethyl) benzonitrile in an aqueous medium” *Green Chem.* **2023**, 25, 167-171 (IF, 11.03; ISSN, 1463-9270).
 2. Souza, R.M.C.; Pimentel, L.M.L.M.; Ferreira, L.K.M.; Hernandez, V.P.; Santos, A.C.D.S.; Dantas, W.M.; Silva, C.J.O.; Brito, R.M.M.; Andrade, J.L.; Andrade-Neto, V.F.; Fujiwara, R.T.; Bueno, L.L.; Junior, V.S.; Pena, L.; Camara, C.A.; Rathi, B.; Oliveira, R.N. “Biological activity of 1, 2, 3-triazole-2-Amino-1, 4-Naphthoquinone derivatives and their evaluation as therapeutic strategy for malaria control” *Eur. J. Med. Chem.* 2023 (IF: 7.088; Elsevier, Netherlands; ISSN, 0223-5234).
 3. Hooda, A.; Singh, D.; Nehra, K.; Dalal, A.; Kumar, S.; Malik, R.S.; Rathi, B.; Kumar, P. “Luminescent Tb (III) complexes with Lewis bases for displays: Synthesis and spectral investigation” *Inorg. Chem. Comm.* **2023**, 151, 110583 (IF, 3.428; Elsevier, Netherlands; ISSN, 1879-0259).
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4. Shaikh, A. S.; Sethi, A.; Makhal, P. N.; Rathi, B.; Kaki, V. R. "Quest for selective MMP9 inhibitors: a computational approach" *J. Biomol. Struct. Dyn.* **2023**, DOI: [10.1080/07391102.2023.2186710](https://doi.org/10.1080/07391102.2023.2186710) (IF, 5.235; Elsevier; ISSN, 1538-0254).
5. Kumar, S.; Yadav, D.; Singh, D.; Shakya, K.; Rathi, B.*; Poonam* "Recent developments on Junin virus, a causative agent for Argentine haemorrhagic fever" *Rev. Med. Virol.*, **2023**, 33, e2419 (IF, 11.043; Wiley; ISSN, 1099-1654).
6. Upadhyay, C., Bhattacharya, S., Kumar, S., Kumar, D., Bhadula, N., Rathi, B., Singh, A. P., & Singh, P. "Novel fluorinated piperazine based-amino acid derivatives as antiplasmodial agents: Synthesis, bioactivity and computational studies. *Chem. Biol. Lett.* **2023**, 10, 543.
7. Jee, B.; Sharma, P. P.; Goel, V. K.; Kumar, S.; Singh, Y.; Rathi, B. "Natural Metabolite Ursolic Acid as an Inhibitor of Dormancy Regulator DosR of Mycobacterium tuberculosis: Evidence from Molecular Docking, Molecular Dynamics Simulation, and Free Energy Analysis" *Curr. Comput. Aided Drug Des.* **2023 In Press** (IF, 1.63; Bentham Science Publishers; ISSN, 1875-6697).
8. Raj, S.; Rathi, B.; Mehra, P.; Asthana, S.; Kumar, D. "Deciphering the role of c-MET in Metabolic reprogramming of Head and Neck squamous cell Carcinoma via In Silico analysis" *Chem. Biol. Lett.* **2023**, 10, 532 (Scopus Indexed; ISSN, 2347-9825).
9. Maurya, S.; Srivastava, R.; Arfin, S.; Hawthorne, S.; Jha, N. K.; Agrawal, K.; Raj, S.; **Rathi, B.**; Kumar, A.; Raj, R.; Agrawal, S.; Paiva-Santos, A. C.; Malik, A. A.; Dua, K.; Rana, R.; Ojha, S.; Jha, S. K.; Sharma, A.; Kumar, D.; El-Zahaby, S. A.; Nagar, A. "Exploring state of the art advances in targeted nanomedicines for managing acute and chronic inflammatory lung diseases" *Nanomedicine* **2023**, 17, 2245 (IF, 6.096; Future Medicine; ISSN, 1748-6963)
10. Sujata Maurya, Sibi Raj, Nihar Ranjan Bhoi, Neel Mani, Brijesh Rathi, Dhruv Kumar "Morphological analysis of metabolically dysregulated spermatozoa using Artificial Intelligence based approach" *J. Integrat. Sci. Technol.* **2023**, 2, 532 (Indian Science Publications; ISSN:).
11. Dalal, A.; Nehra, K.; Hooda, A.; Singh, D.; Kumar, P.; Kumar, S.; Malik, R. S.; Rathi, B. "Luminous lanthanide diketonates: Review on synthesis and optoelectronic characterizations, *Inorg. Chim. Acta* **2023**, doi: <https://doi.org/10.1016/j.ica.2023.121406>
12. Anjani, Kumar, S.; Rathi, B.; Poonam "Recent updates on the biological efficacy of approved drugs and potent synthetic compounds against SARS-CoV-2" *RSC Adv.*, **2023**, 13, 3677-3687 (IF: 4.036; Royal Society of Chemistry, UK; ISSN: 2046-2069).
13. Sharma, N.; Sharma, H.; Kumar, M.; Grishina, M.; Pandit, U.; Poonam and **B. Rathi*** "Solvent-free mechanochemical grinding facilitates clean synthesis of *N*-substituted amines" *Org. Biomol. Chem.*, **2022**, 20, 6673-6679 (IF, 3.89; ISSN, 1477-0539; Royal Society of Chemistry London).
14. Jiang, X.; Sharma, P. P.; **Rathi, B.**; Ji, X.; Hu, L.; Kang, G.D.; Wang, Z.; Xie, M.; Xu, S.; Zhang, X.; Clercq, E. D.; Cocklin, S.; Pannecouque, C.; Dick, A.; Liu, L.; Zhan, P. "Discovery of novel 1,2,4-triazole phenylalanine derivatives targeting an

- unexplored region within the interprotomer pocket of the HIV capsid protein". *J. Med. Virol.* **2022**, 94, 5975 (IF, 20.693; ISSN, 1096-9071; Wiley Germany).
15. Pant, P.; Sharma, P.P.; **Rathi, B.**; Sharma, S. "Mycobacterium tuberculosis Dormancy Regulon proteins Rv2627c and Rv2628 as Toll Like Receptor agonist and as potential adjuvant" *Int. Immunopharmacol.* **2022**, 112, 109238 (IF, 5.714; Elsevier Netherlands; ISSN, 1567-5769).
 16. Ji, X.; Li, J.; Sharma, P. P.; Jiang, X.; Rathi, B.; Gao, Z.; Hu, L.; Kang, D.; Clercq, E.; Cocklin, S.; Liu, C.; Pannecouque, C.; Dick, A.; Zhan, P.; Liu, X. Design, synthesis and structure-activity relationships of phenylalanine-containing peptidomimetics as novel HIV-1 capsid binders based on Ugi four-component reaction. *Molecules* **2022**, 27, 5995 (IF, 4.411; MDPI Switzerland; ISSN, 1420-3049).
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 19. Nehra, K.; Dalal, A.; Hooda, A.; Bhagwan, S.; Jakhar, K.; Singh, D.; Malik, R. S.; Kumar, S.; **Rathi, B.** "Synthesis, thermal and photoluminescence investigation of Tb (III) β -diketonates with 1, 10-phenanthroline derivatives" *J. Lumin.* **2022**, 251, 1192333 (If, 4.171; Elsevier; ISSN, 1872-7883).
 20. Gupta, Y.; Sharma, N.; Singh, S.; Romero, J.G.; Rajendran, V.; Mogire, R.M.; Kashif, M.; Beach, J.; Jeske, W.; Poonam, Ogutu, B.; Kanzok, S.M.; Akala, H.M.; Legac, J.; Rosenthal, P.J.; Rademacher, D.J.; Durvasula, R.; Singh, A.P.; **Rathi, B.*** and Kempaiah, P. The multistage antimalarial compound Calxinin perturbs P. falciparum Ca^{2+} homeostasis by targeting a unique ion channel. *Pharmaceutics* **2022**, 14, 1371 (IF, 6.525; ISSN, 1999-4923; MDPI Switzerland).
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 22. Arfin, S.; Chauhan, S.; Mani, N.; **Rathi, B.**; Kumar, D. "In Silico analysis of Ceruloplasmin alteration in Oral Squamous Cell Carcinoma" *Chem. Biol. Lett.* **2022**, 9, 342 (Scopus Indexed; ISSN, 2347-9825).
 23. Kumar, K.; Kovalenko, S.; Bhardwaj, S.; Sethi, A.; Gorobets, N.; Desenko, S. M.; Poonam, **Rathi, B.*** "Drug Repurposing against SARS-CoV-2 using Computational Approaches" *Drug Discov. Today* **2022**, 27, 2015-2027 (IF, 8.369; Elsevier Netherlands; ISSN, 1359-6446).
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- regulation(s) of c-MET/HGF Signalling in Head and Neck Cancer” *Mol. Cancer* **2022**, 21, 31 (IF, 41.444; BMC Springer Nature; ISSN, 1476-4598).
25. Gupta, Y.; Goicoechea, S.; Pearce, C.; Mathur, R.; Romero, J.; Kwofie, S.; Weyenberg, M.; Daravath, B.; Sharma, N.; Poonam, Akala, H.; Kanzok, S.; Durvasula, R.; **Rathi, B.**; Kempaiah, P. “The emerging paradigm of calcium homeostasis as a new therapeutic target for Protozoan Parasites” *Med. Res. Rev.* **2022**, 42, 56-82 (IF, 12.994; Wiley-VCH Verlag GmbH & Co. KGaA, Germany; ISSN: 1098-1128).
 26. Sharma, P. P.; Sethi, A.; Diwedi, B.; Grishina, M.; **Rathi, B.**; Singh, G. “Novel Inhibitors of malarial aspartyl proteases, plasmepsin II and IV: In silico design and validation studies” *Chem. Biol. Lett.* **2022**, 9, 315 (Scopus Indexed; ISSN, 2347-9825).
 27. Sharma, N.; Kashif, M.; Singh, V.; Fontinha, D.; Mukherjee, B.; Kumar, D.; Singh, S.; Prudêncio, M.; Singh, A.*; **Rathi, B.*** “Novel antiplasmodial compounds leveraged with multistage potency against Parasite *Plasmodium falciparum*: In vitro, in vivo evaluations and pharmacokinetic studies” *J. Med. Chem.* **2021**, 64, 8666 (IF, 8.04; American Chemical Society; ISSN, 1520-4804).
 28. Mehta, J.; Rolta, R.; Salaria, D.; Awofisayo, O.; Fadare, O.A.; Sharma, P. P.; **Rathi, B.**; Chopra, A.; Kaushik, N.; Choi, E. H.; Kaushik, N. K. “Phytocompounds from North Western Himalayan medicinal plants as potential drug to treat multidrug resistant *Salmonella typhimurium*: an in silico approach” *Biomedicine* **2021**, 9, 1402 (IF, 6.08; MDPI Switzerland; ISSN: 2227-9059).
 29. Li, J.; Jiang, X.; Dick, A.; Sharma, P. P.; Chen, C.-H.; **Rathi, B.**; Kang, D.; Wang, Z.; Ji, X.; Lee, K.-H.; Cocklin, S.; Liu.; Zhan, P.; “Design, Synthesis, and Antiviral Activity of Phenylalanine Derivatives as HIV-1 Capsid Inhibitors” *Bioorg. Med. Chem.* **2021**, 48, 116414 (IF: 3.641; Elsevier; ISSN: 0968-0896).
 30. Gupta, Y.; Kumar, S.; Zak, S.; Jones, K.; Upadhyay, C.; Sharma, N.; Azizi, S.-A.; Kathayat, R.; Poonam; Herbert, A.; Durvasula, R.; Dickinson, B.; Dye, J.; **Rathi, B.***; Kempaiah, P.* “Antiviral Evaluation of Hydroxyethylamine Analogs: Inhibitors of SARS-CoV-2 Main Protease (3CLpro), A Virtual Screening and Simulation Approach” *Bioorg. Med. Chem.* **2021**, 47, 116393 (IF: 3.641; Elsevier; ISSN: 0968-0896).
 31. Sharma, P. P.; Bansal, M.; Sethi, A.; Poonam, Pena, L.; Grishina, M.; Chaturvedi, S.; Kumar, D.; **Rathi, B.*** “Computational methods directed towards drug repurposing for COVID-19: advantages and limitations” *RSC Adv.* **11**, 36181 (IF: 4.036; Royal Society of Chemistry, UK; ISSN: 2046-2069).
 32. Kumar, S.; Gupta, Y.; Zak, S.; Jones, K.; Upadhyay, C.; Sharma, N.; Herberty, A.; Durvasula, R.; Potemkin, V.; Dye, J.; Poonam; Kempaiah, P.*; **Rathi, B.***; “A novel compound active against SARS-CoV-2 targeting Uridylate-specific endoribonuclease (NendoU/NSP15): *In silico* and *in vitro* investigations” *RSC Med. Chem.* **2021**, 12, 1757-1764 (IF, 3.47; Royal Society of Chemistry UK; ISSN, 2632-8682).
 33. Dantas, W. M.; Oliveira, V. N.; Santos, D. A. L.; Seabra, G.; Sharma, P. P.; **Rathi, B.**; Pena, L.; Oliveira, R. “Searching Anti-Zika Virus Activity in 1H-1,2,3-

- triazole based compounds" *Molecules* **2021**, *26*, 5869 (IF, 4.411; MDPI Switzerland; ISSN, 1420-3049).
34. Bansal, M.; Upadhyaya, C.; Poona; Kumar, S.; **Rathi, B.*** 'Phthalimide Analogs for Antimalarial Drug Discovery' *RSC Med. Chem.* **2021**, *12*, 1854 (IF, 3.47; Royal Society of Chemistry UK; ISSN, 2632-8682).
35. Oliveira, V.N.; Moura, C.; Peixoto, A.; Ferreira, VPS.; Araújo, H.M.; Pimentel, L.M.L.; Pessoa, C.; Nicolete, R.; Anjos, J.; Sharma, P. P.; **Rathi, B.**; Pena, L.; Rollin, P.; Tatibouët, A.; Oliveira, R. "Synthesis of alkynylated 1,2,4-oxadiazole/1,2,3-1H-triazole glycoconjugates: discovering new drug candidates for use in chemotherapy against lung carcinoma and *Mycobacterium tuberculosis*" *Eur J. Med. Chem.* **2021**, *220*, 113472 (IF: 7.088; Elsevier, Netherlands; ISSN, 0223-5234).
36. Rolta, R.; Salaria, D.; Sharma, P. P.; Sharma, B.; Kumar, V.; **Rathi, B.**; Verma, M.; Sourirajan, A.; Baumler, D. A.; Dev, K. "Phytocompounds of *Rheum emodi*, *Thymus serpyllum*, and *Artemisia annua* Inhibit Spike Protein of SARS-CoV-2 Binding to ACE2 Receptor: In Silico Approach" *Curr. Pharmacol. Rep.* **2021**, *7*, 135 (IF, 1.52; Springer International Publishing Switzerland; ISSN, 2198641X).
37. Chandel, V.; Kumar, A.; Kumar, A.; **Rathi, B.**; Kumar, D. Role of Monocarboxylate Transporters in Head and Neck Squamous Cell Carcinoma. *Life Sci.* **2021**, *279*, 119709 (IF, 5.037; Elsevier; ISSN, 0024-3205).
38. Chandel, V.; Tripathi, G.; Nayar, S. A.; **Rathi, B.**; Kumar, A.; Kumar, D. "In silico identification and validation of triarylchromones as potential inhibitor against main protease of severe acute respiratory syndrome coronavirus 2" *J. Biomol. Struct. Dyn.* **2021** Accepted <https://doi.org/10.1080/07391102.2021.1918255> (IF, 5.235; Elsevier; ISSN, 1538-0254).
39. Feng, D.; Wei, F.; Sun, Y.; Sharma, P.; Zhang, T.; Lin, H.; **Rathi, B.**; Clercq, E.; Pannecouque, C.; Kang, D.; Zhan, P.; Liu, X. "Boronic acid-containing diarylpyrimidine derivatives as novel HIV-1 NNRTIs: design, synthesis, and biological evaluation" *Chin. Chem. Lett.* **2021**, *32*, 4053 (IF, 6.779; Elsevier; ISSN 1001-8417).
40. Raj, S.; Mathur, A.; **Rathi, B.**; Kumar, N.; Jha, S. K.; Kumar, D. "Mutational Heterogeneity in Spike Glycoproteins of Severe Acute Respiratory Syndrome Coronavirus 2" *3 Biotech* **2021**, *11*, 236 (IF, 1.798; Springer; ISSN, 2190-5738).
41. Arfin, S.; Jha, N. K.; Jha, S. K.; Kesari, K.; Ruokolianen, J.; Roychoudhury, S.; **Rathi, B.**; Kumar, D. "Oxidative Stress in Cancer Cell Metabolism" *Antioxidants* **2021**, *10*, 642 (IF, 6.312; MDPI Switzerland; ISSN: 2076-3921).
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43. Kumar, S.; Upadhyaya, C.; Kempaiah, P.; **Rathi, B.**; Poonam "Multi-targeting approach for nsp3, nsp9, nsp12 and nsp15 proteins of SARS-CoV-2 by Diosmin as illustrated by Molecular Docking and Molecular Dynamics simulation

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 46. Sharma, P.; Kumar, S.; Kumar K.; Singh, A.; Singh, I.; Grishina, M.; Pandey, K.; Singh, P.; Potemkin, V.; Poonam, Singh, G.; **Rathi, B.*** "In silico Validation of Novel Inhibitors of Malarial Aspartyl Protease, Plasmepsin V and Antimalarial Efficacy Prediction" *J. Biomol. Struct. Dyn.* **2022**, 40, 8352 (IF, 5.235; Taylor & Francis; ISSN, 1538-0254).
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 81. Meet Our Editorial Board Member, *Curr. Topics Med. Chem.*, **2016**, 16, 895-896 (IF: 2.9; ISSN: 1568-0266).
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104. Renuka, N.; Vijayan, N.; **Rathi, B.**; Nagarajan, K.; Ramesh Babu, R.; Bhagavannarayana, G. "Synthesis, Growth and Optical Properties of Semi Organic Non-linear Optical Single Crystal: L-Arginine Acetate" *OPTIK* **2012**, 123, 189-192. (IF: 2.44; Elsevier; ISSN: 0030- 4026).
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*Corresponding Author

Book Chapter(s)

- Saniya Arfin, Kirti Agrawal, Ashok Kumar, Arun Kumar, Brijesh Rathi, Dhruv Kumar, Chapter 1 - Metabolic dysregulation in cancer progression, Editor(s): Dhruv Kumar, Shailendra Asthana, Autophagy and Metabolism, Academic Press, 2022, Pages 1-39, ISBN 9780323998796, <https://doi.org/10.1016/B978-0-323-99879-6.00008-0>.
- Tejveer Singh, Arun Sidram Kharat, Brijesh Rathi, Dhruv Kumar, Chapter 11 - Designing metabolic target-specific inhibitors for cancer therapy, Editor(s): Dhruv Kumar, Shailendra Asthana, Autophagy and Metabolism, Academic Press, 2022, Pages 239-280, ISBN 9780323998796, <https://doi.org/10.1016/B978-0-323-99879-6.00011-0>
- Sujata Maurya, Kavindra Kumar Kesari, Shubhadeep Roychoudhury, Jayaramulu Kolleboyina, Niraj Kumar Jha, Saurabh Kumar Jha, Ankur Sharma, Arun Kumar, Brijesh Rathi & Dhruv Kumar (2022). Metabolic Dysregulation and Sperm Motility in Male Infertility. In: Kesari, K.K., Roychoudhury, S. (eds) Oxidative Stress and Toxicity in Reproductive Biology and Medicine. Advances in Experimental Medicine and Biology, vol 1358. Springer, Cham. https://doi.org/10.1007/978-3-030-89340-8_12
- Maurya, S., Mishra, M.K., Rathi, B., Kumar, D. (2022). Lipid Nanocarriers: Applications in Biomedical Research and in Drug Delivery. In: Gopi, S., Balakrishnan, P., Mubarak, N.M. (eds) Nanotechnology for Biomedical Applications. Materials Horizons: From Nature to Nanomaterials. Springer, Singapore. https://doi.org/10.1007/978-981-16-7483-9_2.
- Raj, S.; Mishra, M.K.; Harihar, S.; Kumar, A.; Roychoudhury, S.; Kumar, A.; **Rathi, B.**; Kumar, D. (2022) The Author(s), under exclusive license to

Springer Nature Switzerland AG 2021 43 K. K. Kesari, N. K. Jha (eds.), Free Radical Biology and Environmental Toxicity, Molecular and Integrative Toxicology, <https://doi.org/10.1007/978-3-030-83446-3> Regulation of Glucose Transporters in Cancer Progression. Springer P. 191-208 (ISBN, 978-3-030-83446-3 (eBook).

- Kumar S., Kumari P., Rathee G., Rathi B. (2021) Nanomaterials for Early Cancer Diagnostics. In: Malik A., Afaq S., Tarique M. (eds) Nanomedicine for Cancer Diagnosis and Therapy. Springer, Singapore. p.p. 97-114. https://doi.org/10.1007/978-981-15-7564-8_5 (ISBN, 978-981-15-7564-8)
- **Brijesh Rathi** and Poonam (2018) "Chemical Therapeutics for the treatment of alcoholism" ALCOHOLISM: Causes, Symptoms Effects and Treatment. Page: 237-248 Manakin Press, New Delhi India (ISBN: 9789-38667-7488).
- Renuka, N.; Babu, R.; Vijayan, N.; **Rathi, B.**; Thukral, K. "Effect of Oxygen Ion Irradiation on the Structural and Optical Properties of L-Arginine Acetate Single Crystals" *Recent Trends in Material Science and Application* **2017**, 511-519 (Springer, ISBN: 978-3-319- 44890-9).

Doctoral/master thesis supervision

- **Neha Sharma**, Date of Submission: 21 March 2023); University of Delhi; Role: Supervisor
- **Dr. Prem P Sharma** (Reg No. 18001907001; Date of Award: 20.07.2022); DCRUST, Murthal; Role: Co-supervisor.
- **Dr. Pramila Gupta** (MUR1403063; Date: 20.02.2021; Mewar University Rajasthan); Role: Co-supervisor.
- **Shivani Jaiswal** (Enrolments No.: A14587820006; Amity University) 'In-silico Screening of Phytochemicals Against ERK2 Using Structure Based Drug Designing Approach'

Administrative Committees

Coordinator DST PAC, 16-17 December 2022.

Coordinator DST PAC, 15 December 2022.

Coordinator DST PAC, 29-30, December 2022.

Convener, Research Committee, 2018-2021.

Convenor, Research Committee, Hansraj College, University of Delhi, 2018-2021.

Co-convenor, Research Committee, Hansraj College, University of Delhi, 2021 onwards.

Convenor, Institutional Innovation Cell (IIC), A Unit of MHRD-Innovation Cell, Hansraj College, University of Delhi, 2018 onwards.

Coordinator, Centre for Global Health Study Site, a unit of Global Health Center Loyola University Chicago, USA (2018-2019).

Coordinator, Laboratory For Translational Chemistry and Drug Discovery, Hansraj College, University of Delhi (2017 onwards).

Member of Hostel Committee, 2015-16

Editorial Member, Brochure Committee of University of Delhi 2022.

Research Interest

Medicinal Chemistry and Drug Discovery

Research Projects

-
1. Title of the project: "Molecular theranostic probes based on optically active amines for targeting SARS-CoV-2"
Funding Agency: DRDO, Government of India
Duration: Three Years (2021-2024)
Project Cost: 49.04 Lakh
Role: PI
 2. Title of the project: "Repurposing of Drugs and Validation of Lead Compounds Against Main Protease and RNA Dependent RNA Polymerase of SARS-CoV-2"
Funding Agency: BRICS - DST, Government of India
Duration: Three Years (2021-2023)
Project Cost: 42.87 Lakh
Role: Co-PI
 3. Title of the project: "Design and Synthesis of Novel Bioactive DOTA Conjugates"
Funding Agency: INMAS-DRDO, Government of India
Duration: Three Years (2021-2022)
Project Cost: 8.90 Lakh
Role: PI
 4. Title of the Project: "Lead Optimization of Potent Multistage Antimalarials"
Funding Agency: SERB, Government of India
Duration: Three Years (2020-2023)
Project Cost: 46.41 Lakh
Role: PI
 5. Title of the Project: "Development of Nanoantenna Sensor for Infrared Detection"
Funding Agency: DST, Government of India
Duration: 2019-2021
Cost: 63.08 Lakh
Role: PI
 6. Title of the Project: "Design and Catalytic Large-Scale Synthesis of New Functionalized Perfluorinated Ketones/Ethers as Potential Fire Extinguishants"
-

Funding Agency: DRDO, Government of India
Project Cost: 48.2 Lakh
Duration: 2017-2020
Role: PI

7. Title of the Project: "A New Class of Anti-malarials: Constituting New Avenues for Anti- malarial Therapy"
Funding Agency: SERB, Government of India
Duration: 2016-2019
Cost: 32.89 Lakh
Role: PI
8. Title of the Project: "Novel functionalized tetrahedral activated small peptidomimetic inhibitors of malarial aspartic proteases, plasmepsin I and II"
Funding Agency: DST, Government of India
Project Cost: 10 Lakh
Duration: 2011-2014
Role: PI
9. Title of the project: "Contributions to bioinformatics and nanomedicine: computational, biochemical and biophysical evaluation of new small peptide and fatty acid derivatives as well as their self-assembled nano structures as molecular weapons against infectious diseases" (INT/BLR/P-4/2014).
Funding Agency: DST, Government of India
Project cost: 5 Lakh
Duration: 2014-2016
Role: Co-PI
10. Title of the project: "Functionalized Nano-antimalarials: Design, Synthesis and Structural Aspects of Novel Metal Complexes as Inhibitors of Plasmepsin I and Plasmepsin II" (INT/PORTUGAL/P-17/2013)
Funding Agency: DST, Government of India
Project cost: 5 Lakh
Duration: 2014-2017
Role: Co-PI
11. Title of the Project: "Thio-click approach for the synthesis of stable glycomimetics and chiral oxathiacrown ethers"
Funding Agency: Department of Science and Technology, Ministry of Science and Technology, Government of India
Project Cost: 38 Lakh
Duration: 2017-2020
Role: Co-PI In collaboration with IIT Delhi
12. Title of the Project: "Conjugates and Analogues of Antiviral Compound AUY11 (INT/RUS/RFBR/P-194/2015)"
Funding Agency: Department of Science and Technology, Ministry of Science and Technology, Government of India

Project Cost: 24.28 Lakh
Duration: 2015-2017
Role: Co-PI In collaboration with IIT Delhi

13. Title of the Project: "Survey of Tree Species in Delhi Region and Screening of Selected Medicinal Plants for Anti-Cancer Activity" (SVC-101)
Funding: University of Delhi
Project Cost: 10 Lakh
Duration: One Year (2012-2013).
14. Title of the Project: "Engineered Biocompatible Organic Nanoarchitectures: A New Paradigm for Disinfections" (HRC-308)
Funding Agency: University of Delhi
Project Cost: 6 Lakh
Duration: One Year (2015-2016).

Research Collaboration

- **Dr. Agam P Singh**, Scientist, National Institute of Immunology (NII), New Delhi.
- **Prof. Conor R Caffrey**, University of California, San Diego, USA.
- **Dr. Prakasha Kempaiah**, Infectious Disease Division, Mayo Clinic, Florida, USA.
- **Dr. Martin Zoltner**, BioCev, Charles University of Prague, Czech Republic.
- **Dr. Lindomar Pena**, Department of Virology, Aggeu Magalhaes, Institute (IAM), Oswaldo Cruz Foundation (Fiocruz), Recife 50670-420, Pernambuco, Brazil.

Conferences/Seminar/workshop Organized

- "1st International conference on Integrative Chemistry, Biology and Translational Medicine (ICBTM-2019)" Feb 25-26, 2019, Jointly organised by Centre for Global Health, Hansraj College University of Delhi, Delhi, India & Loyola University Stritch School of Medicine Maywood, Chicago USA. **Role: Convener**
- Indo-US Colloquium on Recent developments in interdisciplinary research, July 2, 2018, Jointly organised by IQAC, Department of Chemistry, Hansraj College University of Delhi, Delhi, India & Loyola University Stritch School of Medicine Maywood, IL USA. **Role: Convener**
- "Indo-Portuguese workshop on Nanotechnology in Chemistry and Biology (INCB- 2016)" jointly organized by Department of Chemistry, Hansraj College and CQM, University of Madeira, Portugal (February 12-13, 2016). **Role: National Coordinator.**

- India International Science Festival (IISF-2015) organized by Ministry of Science & Technology, Govt. of India during December 4-8, 2015 (**Role: Coordinator**).
- MHRD funded “National Workshop on Role of Technical Terminology in Higher Education” (23-24 July, **2015**) in Hansraj College, University of Delhi (**Role: Coordinator**).
- “1st International conference on emerging trends of nanotechnology in drug discovery” was organized (May 26-27, **2014**) by Sri Venkateswara College & Department of Biochemistry, University of Delhi South Campus in association with Centro de Química da Madeira, Universidade da Madeira, Portugal (**Role: National coordinator and organizing secretary**).
- “A National Symposium on Recent Trends in Innovative Research at Under-graduation: Science and Society” was organized (28th Feb-2nd March **2013**) by Sri Venkateswara College, University of Delhi (**Role: Organizing secretary**).
- A national seminar on Recent Trends in Chemistry” was organized (March 20-22, **2012**) by Department of Chemistry, Sri Venkateswara College, University of Delhi (**Role: Treasurer**).
- A national conference on “Convergence of Science and Spirituality” was organized (5- 6th Nov **2011**) by Sri Venkateswara College in association with Institute for Science and Spirituality, A Study Wing of ISKCON Delhi (**Role: Coordinator**).

Invited Lectures

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- Invited Lecture on “Medicinal Chemistry: Scope & Future Aspects” J. C. Bose University of Science and Technology, YMCA Faridabad; 29th March 2023.
 - “Identification and optimization of novel *N*-substituted amines as therapeutic agents for the management of various diseases” during International Conference on Interdisciplinary Research in Cancer Biology (IC-IRCB-2022), 22-23 September 2022 organized by School of Health Sciences & Technology, UPES University, Dehradun, Uttarakhand, India.
 - “Hydroxyethylamine pharmacophore based novel multistage antimalarials” during Interdisciplinary Research in Biomedical Sciences" CONIAPS XXVII organized by Amity University Uttar Pradesh (AUUP), Noida in association with International Academy of physical Sciences (AIPS), Prayagraj; from 26 to 28 October 2021.
 - “Computer Aided Drug Design”, National Workshop on Bioinformatics: Resources, Tools, and its applications (19-27 July 2021), Zakir Husain Delhi College, University of Delhi, New Delhi.
 - “Discovery of next-generation antimalarials” Amity University Noida, Friday, 11 June 2021.
 - “Understanding the therapeutic developments for novel coronavirus COVID-19 management” DiSTAP (Singapore-MIT Alliance for Research and Technology (SMART) Centre) Biweekly seminar, Thursday, 23rd April 2020.
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- “Design of multistage inhibitors of malaria parasite; malarial aspartic proteases as crucial drug targets to achieve multistage activity” VI Forum PPGDITM (UFRPE-UFPB-UFRN-UFC), Recife, capital of Pernambuco State, in the campus of the Federal Rural University of Pernambuco, Brazil, 28th November's 2019.
- “Multistage Antimalarials Targeting Malarial Proteases” during International Workshop on Chemistry and Chemical Biology of Carbohydrates, Nucleic Acids and Antibiotics (22- 24, May **2019**) organized by University of Debrecen, Hungary.
- “New Antimalarials: Multistage Inhibitors of Malaria Parasite as Emerging Hope for the Malaria Eradication” Department of Pharmaceutical Chemistry, University of Debrecen, Hungary (June 12, **2018**).
- Invited Speaker for the workshop “How to get published research paper in the right journals” organized by Grace India Educational Charitable Trust, Delhi at Hansraj College, University of Delhi (October 27, **2018**).
- "Discovery of Multistage Antimalarials: Synergistic Fusion of Privileged Bioactive Scaffolds Triggers Growth Inhibition of Malaria Parasite Plasmodium Falciparum" Drug Discovery & Therapy World Congress (DDTWC-2017) July 10-13, **2017**, Boston, MA United States of America.
- "Functionalized Small Molecules As Potential Antimalarial Agents" National conference on Frontiers in Research & Development on Agriculture, Bio-medicinal, Chemical and Pharmaceutical sciences (4th March, **2016**), Mewar University, Rajasthan.

Awards/Fellowships/Recognitions Availed

2022 (June) – Institute of Eminence Fellow Award by University of Delhi.

2021 (October) – Best Paper Presentation Award by International Conference of International Academy of Physical Sciences and Amity University, Noida.

2021 (July) - [Scientists join hands targeting to synthesize compounds to inhibit maturation & propagation of COVID 19 virus](#) – a story about our research published on DST, Govt. of India website.

2019 – CAPES-Print Fellowship from Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, Ministry of Education, Brazil.

The prestigious “Excellence Awards for In Service Teachers” (2018) by University of Delhi. This award is given to highly deserving individuals for their contribution to academic activities.

“Best Young Teacher award” by Grace India Award-2018 Function on the occasion of 87th Birth Anniversary of Bharat Ratna Dr. APJ Abdul Kalam at Hansraj College University of Delhi.

UGC-Raman International Fellowship (2016-2017) by UGC, Ministry of Human Recourses and Development, Govt. of India.

Early Career Research Award (2016-2019) by Science & Engineering Research Board (SERB), Ministry of Science of Technology, Govt. of India.

Young Scientist Fellowship (2011-2014) by DST, Ministry of Science of Technology, Govt. of India.
International Reviewer for Russian Science Foundation (RSF) – on recommendations of Russian International Affairs Council (RIAC), Russia (2017).
Ambassador for Bentham Science Publishers (2018).

Short Course(s)/ Resource person.

- ❖ Four Credit Course on “Antimalarial Drug Discovery Towards Malaria Eradication” Federal Rural University of Pernambuco, Recife, Brazil, 27 November 2019.
- ❖ Antimalarial drugs: Preclinical and Clinical Aspects (14 credit PhD elective course and undergraduate elective course) 7-16 October 2019, University of Debrecen, Hungary.

International Visits

- ❖ Visiting Fellow [June 11-18, 2018], Department of Pharmaceutical Chemistry, University of Debrecen, Hungary.
- ❖ Visiting Fellow [June 6-16, 2016], Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia.
- ❖ Visiting Fellow [June 30 –July 7, 2016], Belarussian State University, Minsk, Belarus.
- ❖ Visiting Fellow [Oct. 2014], Centro de Química da Madeira, Universidade da Madeira, Campus da Penteada, 9020-105 Funchal, Portugal.

Honorary Positions (Editing/Review/Membership of Scientific Bodies)

- **Life Member**, Chemical Research Society of India (CRSI) - LM 3495.
- **Advisory Board Member**, Avishkaran, The BIONEST of NIPER Hyderabad
- **Section Editor**, Current Topics in Medicinal Chemistry (IF: 3.37).
- **Associate Editor**, Chemical Biology Letters, Indian Science Publishers
- **Life Member** (L32926), The Indian Science Congress Association, Kolkata
- **Editorial Review Board Member**, ARKIVOC, Arkat USA.
- **Jury Member**, DST Inspire 2015.
- **Reviewer**, Journal of Medicinal Chemistry (ACS); Chemical Science (RSC); Annals of Medicine; RSC Interface; Biochemistry; Plos ONE, RSC Advances; Computational and Structural Biotechnology Journal; Toxicology Research; Physical Chemistry Chemical Physics; Microbial Pathogenesis; Journal of Chemical Physics; Journal of Heterocyclic

Chemistry; Bioorganic Medicinal Chemistry; ARKIVOC; Journal of Molecular Liquids; Frontiers Molecular Biosciences.

Certificate Courses Pursued at Massachusetts Institute of Technology (M. I. T.)

- ❖ EHS Representative Orientation, MIT Training course from Massachusetts Institute of Technology (M. I. T.), Cambridge, United State of America.
- ❖ Chemist Chem Hygiene & Safety, MIT Training course from Massachusetts Institute of Technology (M. I. T.), Cambridge, United State of America.
- ❖ Chemist Lab Spec Chem Hygiene, MIT Training course from Massachusetts Institute of Technology (M. I. T.), Cambridge, United State of America.
- ❖ Managing Hazardous Waste, MIT Training course from Massachusetts Institute of Technology (M. I. T.), Cambridge, United State of America.
- ❖ Managing Your Time , from Massachusetts Institute of Technology (M. I. T.), Cambridge, United State of America.

Personal Details

Father's Name: Sh. Mangey Ram

Date of Birth: June 5, 1981

Sex: M

Languages Known: English, Hindi

Nationality: Indian