

SANDEEP KUMAR

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AREA OF RESEARCH INTEREST

- Target/structure-based drug design
- Neuroprotective and anticancer drug discovery
- PBVS and LBVS drug discovery
- MD simulation of protein-ligand complex
- Multi-step organic synthesis

EDUCATIONAL QUALIFICATIONS

Type of education	Educational	Organization	Year	CGPA/Percent
Doctorate	PhD (Pharm. Chem.)	IIT (BHU), Varanasi	2019-2024	8.20
Post-Graduation	M. Pharm (Pharm. Chem.)	IIT (BHU), Varanasi	2015-2017	6.92
Under Graduation	B. Pharm	AKTU, Lucknow	2011-2015	75
Senior Secondary	Intermediate	U.P. Board Prayagraj	2010	70
Secondary	Matriculation	U.P. Board Prayagraj	2008	52

WORK EXPERIENCE/POSITION HELD

- **Organization:** Bharat Institute of Technology, Meerut
- **Position:** Assistant Professor
- **Duration:** October 2017 to December 2018

RESEARCH PROJECTS

PhD Thesis Project

July 2019 to October 2024

"Design, Synthesis and Evaluation of Acetamides and Carbohydrazones as Dual Monoamine Oxidase and Acetylcholinesterase Inhibitors" under the supervision of Prof. Senthil Raja A.

M. Pharm Thesis Project

July 2016 to July 2017

"Design, Synthesis and Evaluation of Some Benzimidazole Derived Carbohydrazones as Dual Inhibitors of Acetylcholinesterase & Monoamine Oxidase" under the supervision of Dr. Senthil Raja A.

PUBLICATIONS

1. Kumar, Sandeep, and Senthil Raja Ayyannan. *Journal of Biomolecular Structure and Dynamics* 41, no. 14 (2023): 6789–6810. <https://doi.org/10.1080/07391102.2022.2112082>.
2. Kumar, Sandeep, Mitra, Rangan and Senthil Raja Ayyannan. *Med. Chem. Res.* 33, (2024) 1974–1991. <https://doi.org/10.1007/s00044-024-03304-1>
3. Kumar, Sandeep, Mitra, Rangan and Ayyannan, Senthil Raja. *Mol. Divers.* (2024) (accepted, in press).
4. Kumar, Sandeep, Shivani Jaiswal, Sukesh Kumar Gupta, and Senthil Raja Ayyannan. *Journal of Biomolecular Structure and Dynamics*, (2023), 1–20. <https://doi.org/10.1080/07391102.2023.2224887>.
5. Mitra, Rangan, Sandeep Kumar, and Senthil Raja Ayyannan. *Journal of Biomolecular Structure and Dynamics*, (2023), 1–20. <https://doi.org/10.1080/07391102.2023.2291733>.
6. V. Pavan Kumar, M. S. Vishnu, Sandeep Kumar, Shivani Jaiswal & Senthil Raja Ayyannan. *Molecular Diversity*, Volume 27, (2023). 2465–2489. <https://doi.org/10.1007/s11030-022-10564-9>.
7. M. S. Vishnu, V. Pavankumar, Sandeep Kumar, & Senthil Raja Ayyannan. *ChemMedChem* (2019), 14, 1359-1376. <https://doi.org/10.1002/cmcd.201900277>.
8. Sandeep Kumar, Harish Jagannadhula, Senthil Raja Ayyannan. *Journal of Pharmaceutical Chemistry*, 2022.

SKILLS AND INTERESTS

Technical skills

- **Wet chemistry skills:** Wet chemistry techniques including single and multistep organic synthesis, common reaction workup and column chromatography purification along with reagent handling and general lab safety.
- **Dry chemistry skills:** Molecular docking of small molecule inhibitors using AutoDock 4.2, MOE (Molecular Operating Environment) and Schrodinger. Molecular dynamics simulation of apoprotein and protein-ligand complex using Schrodinger's Desmond and GROMACS software. FTIR, NMR and HRMS interpretation and spectral data analysis.
- **Instrument handling:** Rotary evaporator, multi-reaction synthetic station, solvent trap vacuum pump, UV-Vis spectrophotometer, ATR, FTIR spectrophotometer, multimode microplate reader, inverted microscope, single channel and multichannel micro pipette.

Computer skills

- **Software:** ChemOffice (ChemDraw 2D and Chem 3D), MestReNova, Bruker TopSpin, Biovia Discovery Studio Visualizer, PyMol, AutoDock tools, Schrodinger's Maestro and Desmond, Chemaxon (Marvin sketch), Origin, GraphPad prism, Microsoft Office package (MS word, MS excel, MS power point and MS publisher) and GROMACS.
- **Operating system:** Microsoft Windows, Linux Ubuntu, Linux mint, Linux kali and Android.
- **Scientific data retrieval:** PubMed, Sci-finder, Web of science and google scholar.
- **Web-based servers:** Pharmit and ZINC pharmer server for searching pharmacophore query, PreADMET for prediction of drug likeness and toxicity. Automated topology builder (ATB) for calculation of ligand topology and vulpine science for ligand efficiency calculation.

Language proficiency

- **English:** Read, write and speak
- **Hindi:** Read, write and speak

Place: Varanasi

(Signature)