

Curriculum vitae

Dr. Vikas Kumar

Ph.D., M.Phil.

Assistant Professor

Department of Zoology

College of Commerce, Arts & Science, Patna

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Academic Details:

| Degree | Institution | Board/ University | Year of passing | Percentage | Area/Subject |
|--------------------------|---|----------------------------|--------------------|------------|-------------------------------------|
| Ph.D. | Department of Zoology | University of Delhi, Delhi | 2014 | - | In-silico Drug Designing |
| M.Phil. | Department of Zoology | University of Delhi, Delhi | 2008 | 73 | Zoology (Cell Regulatory Mechanism) |
| M.Sc. | Department of Zoology | University of Delhi, Delhi | 2007 | 65.10 | Zoology |
| B.Sc. (Hons.) | Dyal Singh College | University of Delhi, Delhi | 2005 | 70.07 | Applied Zoology |
| 12th | Chinmaya Vidyalaya, Bokaro Steel City (Jharkhand) | C.B.S.E | 2001 | 68.80 | Science (PCM&BE) |
| 10th | Netarhat Residential School, Latehar (Jharkhand) | B.S.E.B | 1999 | 84.80 | General |

Academic Achievements:

- Ph.D. supervision (*Studies on Nutritional Behaviour of Zebra Fish*)
- Qualified B.P.S.C (Bihar Public Service Commission) Examination (Adv. No. 68-2014) for the recruitment of Assistant Professor in Zoology. Rank under Merit: 04
- Travel grant awarded by DST, Govt. Of India for paper presentation in Drug Discovery and Therapy World Congress 2013, hosted by Eureka conference in Boston, MA, USA, from June 3rd to 6th 2013.

- Qualified CSIR-UGC NET for JRF Dec. 2009
- Qualified CSIR-UGC NET for LECTURERSHIP June 2009, Dec.2008 & July 2008
- First Position in M.Phil. Theory exam 2008
- N. Prakash Memorial Gold medal in M.Sc. Zoology
- First Position in M.Sc., Kirori Mal College (2006&2007)

Professional/Teaching Experience:

| Sl.No. | Institution | Post | Nature of appointment | Duration |
|---------------|--|---------------------|------------------------------|--------------------------|
| 1. | College of Commerce, Arts & Science (Patliputra University, Patna) | Assistant Professor | Permanent | 20.06.2024 to Present |
| 2. | S.G.G.S College, Patna City (Patliputra University, Patna) | Assistant Professor | Permanent | 11.11.2019 to 19.06.2024 |
| 3. | KiroriMal College, University of Delhi, Delhi | Assistant Professor | Ad-hoc | 15.07.2015 to 09.11.2019 |
| 4. | Deen Dyal Upadhyaya College, University of Delhi, Delhi | Assistant Professor | Ad-hoc | 01.08.2014 to 09.05.2015 |
| 5. | Shivaji College, University of Delhi, Delhi | Assistant Professor | Ad-hoc | 24.07.2013 to 25.04.2014 |
| 6. | Hans Raj College, University of Delhi, Delhi | Assistant Professor | Ad-hoc | 01.08.2009 to 31.08.2010 |
| 7. | Hans Raj College, University of Delhi, Delhi | Assistant Professor | Ad-hoc | 02.02.2009 to 23.03.2009 |

Ph.D Thesis Title: Designing of novel heterocyclic scaffolds as potential therapeutic agents against neurodegenerative disorders: A computational approach.

Working Area: Bioinformatics & Drug design through QSAR & Molecular modelling Techniques

- Homology Modeling and Molecular Dynamics Simulation on Macromolecules.
- In-silico protein-protein and protein-ligand interaction studies.

- High-Throughput virtual screening using Computational Techniques.
- Design of acyclic and cyclic chelating agent for biomedical application.
- 2D & 3D QSAR studies for Pharmacophore model generation.
- Lead Generation and Optimization.
- 3D Quantum Molecular Modelling & docking studies (Receptor-Ligand binding).

International Publications:

1. Prospective Atom Based 3D-QSAR Model Prediction, Pharmacophore Generation and Molecular Docking Study of Carbamate Derivatives as Dual Inhibitors of AChE and MAO-B for Alzheimer's Disease. **Vikas Kumar**, Nidhi Chadha, Anjani K. Tiwari, Neeta Sehgal, Anil K. Mishra. **Medicinal Chemistry Research**. Published online 25 Aug 2013. DOI 10.1007/s00044-013-0704-3. ISSN (print): 1054-2523, ISSN (online): 1554-8120. (Impact factor: 2.351)
2. Design and docking studies of [Diethylenetriaminepentaacetic acid-(amino acid)2] with acetylcholine receptor as a molecular imaging agent for single-photon emission computed tomographic application. Anjani K Tiwari, **Vikas Singh Rathore**, Deepa Sinha, Anupama Datta, Neeta Sehgal, Krishna Chuttani, Anil K Mishra. **Molecular Imaging**. 2012 Jun; 11(3), pp 240-250. ISSN No. 15353508 (Impact factor: 3.250)
3. Quantitative Structure activity relationship of tetraaza macrocyclic vehicle DO3A with lanthanide relaxivity and hydrophobicity. Pooja Srivastava, **Vikas Kumar**, Anjani K. Tiwari, Anil K. Mishra. **Medicinal Chemistry Research**. Published online 20 March 2013. DOI: 10.1007/s00044-013-0570-z. ISSN (print): 1054-2523, ISSN (online): 1554-8120. (Impact factor: 2.351)
4. Design, Synthesis and biological evaluation of catecholamine vehicle for studying dopaminergic system. Pooja Singh, **Vikas Kumar**, Swati Aggarwal, Anjani K Tiwari, Krishna Chuttani, Anil K Mishra. **Chemical Biology & Drug Designing (Wiley)**. 2013; 82: 226-232. ISSN (print): 1747-0277, ISSN (online): 1747-0285. (Impact factor: 2.817)
5. Design and development of DTPA-(Asn)₂ radiolabeled with ⁶⁸Ga for PET imaging application. **Vikas Kumar**, Anjani K. Tiwari, Neeta Sehgal, Anil K. Mishra. **World Journal of Nuclear Medicine**. Vol 12 (supplement1), Feb2013.

6. Design of DTPA-(bis amide) as AChE inhibitors for quantifying nerve gas activity. **Vikas S. Rathore**, Anjani K. Tiwari, Neeta Sehgal, Anil K. Mishra. **Indian Journal of Nuclear Medicine**. Vol.26: Abstract Supplement Issue, Dec 2011. (Impact factor: 0.514)
7. Investigation for the interaction of tyramine based anthraquinone analogue with Human Serum Albumin by optical spectroscopic technique. Aggrawal S, Tiwari AK, Srivastava P, Chadha N, **Kumar V**, Singh G, Mishra AK. **Chemical Biology & Drug Designing (Wiley)**. 2013, Vol 81, pp343-348. ISSN (print): 1747-0277, ISSN (online): 1747-0285. (Impact factor: 2.817)
8. Perception into Hypoxia Selectivity and Electronic features of Symmetrically Substituted Bis(hydroxyl semicarbazone) ligands and their Copper Complexes: DFT and QM/MM Docking. Nidhi Chadha, Anjani K. Tiwari, **Vikas Kumar**, Marilyn D. Milton, Anil K. Mishra. **Medical Chemical Communications**. 2013, Vol 4, pp 542-548. (Impact factor: 3.597)
9. Bis (histidine) with N₂ vehicle: An important skeleton for MR/ chelation therapy. Pooja Srivastava, Anjani K. Tiwari, Dipti Kakkar, **Vikas Kumar**, Anil K. Mishra. **Chemical Biology & Drug Designing (Wiley)**. Accepted Article-online, 13 January 2014. DOI: 1111/cbdd.12281. ISSN (print): 1747-0277, ISSN (online): 1747-0285. (Impact factor: 2.817)
10. In Silico Thermodynamics Stability Change Analysis Involved in BH4 Responsive Mutations in Phenylalanine Hydroxylase: QM/MM and MD Simulations Analysis. Nidhi Chadha, Anjani K. Tiwari, **Vikas Kumar**, Marilyn D. Milton, Anil K. Mishra. **Journal of Biomolecular Structure & Dynamics (Taylor & Francis)**. ISSN: 0739-1102 (print), 1538-0254 (online). Published online 17 March 2014, DOI: 10.1080/07391102.2014.897258. (Impact Factor: 3.392)
11. Oxime-dipeptides as anticholinesterase, reactivator of phosphorylated-serine of AChE catalytic triad: probing the mechanistic insight by MM-GBSA, dynamics simulations and DFT analysis. Nidhi Chadha, Anjani K. Tiwari, **Vikas Kumar**, Marilyn D. Milton, Anil K. Mishra. **Journal of Biomolecular Structure & Dynamics (Taylor & Francis)**. ISSN: 0739-1102 (print), 1538-0254 (online). Published online 29 May 2014, DOI: 10.1080/07391102.2014.921793. (Impact Factor: 3.392)
12. Bis(Methylpyridine)-EDTA Derivative as a Potential Ligand for PET Imaging: Synthesis, Complexation and Biological Evaluation. Pooja Singh, Swati Aggarwal, Anjani K. Tiwari, **Vikas Kumar**, Ramendra Pratap, Krishna Chuttani and Anil K. Mishra. **Chemical**

Biology & Drug Designing (Wiley). ISSN (print): 1747-0277, ISSN (online): 1747-0285.

Accepted article online: 4 June 2014. DOI: 10.1111/cbdd.12366. (Impact Factor: 2.817)

13. In silico and In vivo analysis of binding affinity of estrogens with estrogen receptor alpha in *Chana punctatus* (Bloch). S. Pipil, **V. Kumar**, V.S. Rawat, L. Sharma, N. Sehgal. **Fish Physiology & Biochemistry (Springer publication)**. ISSN (print): 0920-1742, ISSN (online): 1573-5168. Published online: 4 Oct 2014. DOI: 10.1007/s10695-014-0003-z. (Impact Factor: 1.676)
14. Bio-Evaluation of 99mTc Labeled Homodimeric Chalcone Derivative as Amyloid- β -Targeting Probe. Garima Mann, Kanchan Chauhan, **Vikas Kumar**, Shivani Daksh, Nikhil Kumar, M. Thirumal and Anupama Datta. **Frontiers in Medicine**. ISSN: 2296- 858X. Published on 17 June, 2022. DOI: 10.3389/fmed.2022.813465. (Impact factor: 5.091)
15. Women's Contribution in Scientific World: An Ancient Indian Perspective. Dr. Vikas Kumar & Dr. Anantashutosh Dwivedi. Book chapter 7, page no. 79- 86. Women's Identity Narratives and Discourses. Published by Sanant Publication, Patna. ISBN no. 9788195421725.

Professional Training Course/Program:

- **Organized 10 Days Workshop on RESEARCH METHODOLOGY** for research scholars and faculty members held on 20th Sept. To 1st October 2024 in College of Commerce, Arts & Science, Patna.
- **Organized National Conference on RETHINKING COMPLEXITY IN HUMAN EVOLUTIONARY TRENDS THROUGH ARCHEOZOOLOGY**, by Department of Zoology, S.G.G.S College, Patna City in collaboration with Heritage Society, Patna; Sponsored by Bihar Council on Science & Technology, Govt. of Bihar was held on October 4-5, 2023.
- **“Short term course on Professional Development for IQAC Co-ordinators”** conducted by Human Resource Development Centre, Punjabi University, Patiala, Punjab, India held from 16th Sept.2022 to 23rd Sept.2022.
- **Orientation Course** for “Faculty in University/Colleges/Institutes of Higher Education” conducted by Teaching Learning Centre, Ramanujan College, University of Delhi under the aegis of **MINISTRY OF HUMAN RESOURCE DEVELOPMENT PANDIT MADAN**

MOHAN MALVIYA NATIONAL MISSION ON TEACHERS AND TEACHING.

Duration of programme: September 01-September 30, 2020.

- **Refresher Course in Life Sciences** organized by Teaching Learning Centre, Ramanujan College, University of Delhi in collaboration with Miranda House, University of Delhi under the aegis of **MINISTRY OF HUMAN RESOURCE DEVELOPMENT PANDIT MADAN MOHAN MALVIYA NATIONAL MISSION ON TEACHERS AND TEACHING**. Duration of programme: September 01-September 15, 2021.
- National One Week Online **Faculty Training Programme** on “**PEDAGOGICAL TRAINING FOR EFFECTIVE ONLINE TEACHING & LEARNING**” organised by Deen Dayal Upadhyaya College, University of Delhi in association with K.T.H.M. College, Nashik. Duration of programme: August 03- August 10, 2020.
- **Faculty Development Programme** (online) on **LibreOffice Impress** organised by IQAC, College of commerce, Arts and Science, Patna in association with Remote Learning through Spoken Tutorial, IIT Mumbai. Duration of programme: June 15- June 21, 2020.
- **RIO+25 UN Water Action Decade International Short Term Course Program 2020-2021** organized by IARF (Centre of Excellence for United Nations Global Goals) and is based on United Nations International Decade for Action - A/RES/71/222 and UN Decade for Deserts and the Fight against Desertification - A/RES/64/201.

International/ National Presentations & Workshops:

- Research paper presented in International Conference on RECENT TRENDS IN BIOSCIENCES AND HEALTHCARE, organized by Department of Zoology, Patna University, Patna, Bihar on 22nd - 23rd November, 2024. Title of the paper presented “Molecular Docking study of DTPA-(amino acid)2 with Acetylcholine receptor as a potential molecular imaging agent for single photon emission computed tomography application.
- Research paper presented in 3rd Annual Conference of Heritage Society GLOBAL HERITAGE CONCLAVE- 2024 held on 27-28 July 2024 organized by Heritage Society in collaboration with Shyama Prasad Mukherjee University, Ranchi and sponsored by the Indian Council of Historical Research (ICHR) & ICPR, New Delhi. Title of the paper

presented “Sustainable green practices & Biodiversity conservation in Ancient India: A socio- cultural heritage”.

- Research paper presented as a plenary speaker in National Seminar on TRENDS IN GREEN CHEMISTRY AND SUSTAINABLE DEVELOPMENT (TGCSD-2024), organized by Department of Chemistry, Magadh Mahila College & Indian Science Congress Association, Patna Chapter held on February 20-21, 2024. Title of presentation “Computer Assisted Drug Designing: An in-silico approach of drug development.
- Research paper presented in National Seminar organized by The Indian Science Congress Association, Patna Chapter "SCIENCE AND TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT WITH WOMEN EMPOWERMENT" organized by P.G. Department of Chemistry, L.S. College, Muzaffarpur, Bihar on 03- 04 December, 2021. Research paper entitled “Multireceptor affinity of natural bioactive components of Glycyrrhiza glabra: Understanding Neurocognitive functions by Molecular docking approach”.
- Participated in Training workshop in Animal Behaviour, organized for faculty members by Department of Zoology, University of Delhi held at 19th - 25th August. 2015.
- Participated in Workshop on "Biochemistry of Metabolic Processes" organized by Department of Zoology, KiroriMal College held on 2nd February, 2015.
- Participated as organizing member in the "DST-INSPIRE SCIENCE CAMP-2015" organized by Kirori Mal College, University of Delhi, held from December 21st to 25th, 2015.
- Drug Discovery and Therapy World Congress 2013, hosted by Eureka conference in Boston, MA, USA, from June 3rd to 6th 2013. Poster presented entitled “Prospective Atom Based 3D-QSAR Model Prediction, Pharmacophore Generation and Molecular Docking Study of Carbamate Derivatives as Dual Inhibitors of Ache and MAO-B for Alzheimer’s Disease”. Vikas Kumar, Anjani K. Tiwari, Neeta Sehgal and Anil K. Mishra.
- 2nd World Congress on Ga-68 (Generators and Novel Radiopharmaceuticals), Molecular Imaging (PET/CT), Targeted Radionuclide Therapy and dosimetry (SWC-2013) on the way to personalized medicine. Feb28-March2, 2013, PGIMER Chandigarh, India. Poster presented entitled “Design and development of DTPA-(Asn)₂ radiolabelled with ⁶⁸Ga for PET imaging application. Vikas Kumar, Anjani K. Tiwari, Neeta Sehgal and Anil K. Mishra.

- Bioinformatics workshop on Genomics, Proteomics and Drug design conducted by Supercomputing Facility for Bioinformatics & Computational Biology, IIT Delhi. From August 1-7, 2012.
- Paper presented entitled, “Design of DTPA-(bis amide) as AChE inhibitors for quantifying Nerve gases activity” in International congress of Society of Nuclear Medicine of India (SNMI), held on December 8th-12th, 2012 at Chennai, India.
- 3rd workshop on Bioinformatics and Molecular Modeling in drug design. Feb 24-26, 2011 Organized by Bioinformatics Infrastructure Facility (DBT Sponsored) Dr. B.R. Ambedkar Centre for Biomedical Research, University of Delhi, Delhi-110007.
- International Conference on Novel Updates in Reproductive Biology and Comparative Endocrinology & the 27th Annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology (SRBCE-XXVII). January 19-21, 2009, University of Hyderabad, India.
- International Symposium on microbial Biotechnology: Diversity, genomics and metagenomics & 49th annual Conference Association of Microbiologists of India, 18-20th Nov. 2008, Department of Zoology, University of Delhi, Delhi.
- Paper presented at International conference on “Molecular and Clinical aspects of Gonadal and Nongonadal actions of Gonadotropins”, AIIMS 7-9th Feb. 2008. Entitled “Polycystic Ovary Syndrome and associated Insulin resistance in North Indian population: A Retrospective Study”. Vikas Kumar, M.Gauri Devi and Rita Singh.

Membership of Professional Academic/Research Society:

- Life Membership of "THE INDIAN SCIENCE CONGRESS ASSOCIATION"

Other Academic/Administrative Responsibilities:

- Joint Co-ordinator of Incubation centre; College of Commerce, Arts & Science, Patna
- IQAC & NAAC Co-ordinator; S.G.G.S College, Patna City (Patliputra University, Patna)
- Course Co-ordinator of Vocational Course B.B.M, S.G.G.S College, Patna City (Patliputra University, Patna)
- Nodal Officer, S.G.G.S College, Patna City (Patliputra University, Patna)
- IT In-charge, S.G.G.S College, Patna City (Patliputra University, Patna)
- Member, College Development Committee, S.G.G.S College, Patna City (Patliputra University, Patna)