

Dr. Vinod Kumar Yata

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Research Interests

AI in Healthcare, Animal Biotechnology, Cancer Biology, Nanobiotechnology, Computational biology, Proteomics, Microfluidics, Developmental biology and Microbiome.

Professional experience

1. **Assistant professor (Visiting Faculty):** Department of Molecular Biology, Central University of Andhrapradesh, Ananthapuramu - 515002 (August 2024-January 2025)
2. **Research Scientist,** Center of Excellence for Aging and Brain Repair, University of South Florida (USF), Tampa,Florida, USA
3. **DBT-Research Associate:** Animal Biotechnology Centre, National Dairy Research Institute (NDRI) Karnal-132001, Haryana, India
4. **Research Associate:** Animal Biotechnology Centre, National Dairy Research Institute (NDRI) Karnal-132001, Haryana, India
5. **Assistant professor,** Department of Biotechnology, Dr B R Ambedkar National Institute of Technology (NIT) Jalandhar-144011, Punjab INDIA

Educational qualifications

- **Ph.D. (Bio-technology)** - Indian Institute of Technology Guwahati (IITG) Guwahati - 781039, Assam, India.
- **M.TECH (Bio-technology)** - West Bengal University of Technology (WBUT) Kolkata 700064, West Bengal, India.
- **Bachelor in Pharmacy,** S.V. College of Pharmacy (Osmania University), Hyderabad- 500081, Telangana, India.

Grants, Awards and fellowships

1. Received a grant of ₹9.9 lakhs from the **Department of Health Research (DHR) – Indian Council of Medical Research (ICMR)** for organizing a **National Workshop on “NextGen AI in Healthcare: From Prediction to Precision Therapy”** at **Malla Reddy University, Hyderabad (2025)**.
2. **Title of the Research project:** Development of a microfluidics device for semen sexing in cattle
 - a. Grant agency: Department of Biotechnology, Government of India
 - b. PI: Dr.Vinod Kumar Yata, NDRI, India
 - c. Mentor:Dr.Ashok Kumar Mohanty, NDRI, India
 - d. Duration:2020-2022.
 - e. Amount: Rs. 13 Lakhs

3. Department of Bio-Technology (DBT), Government of India, awarded **international travel grant** to attend the 5th International Conference on Bioengineering and Nanotechnology (ICBN-2010), 1-4 August, 2010, at Biopolis, **Singapore**.

Patents

1. Ashok Kumar Mohanty, **Vinod Kumar Yata**, Bhanu Prakash, Vibhav Katoch, Neeraj Yadav, Dharmendra Kumar Gangwar, Sudarshan Kumar, Tushar Kumar Mohanty (2024) , Microfluidic method for enrichment of live and motile spermatozoa of cattle(**Indian patent number: 436709**)

Books Authored

1. Microfluidics for assisted reproduction in animals', (2021) **Vinod Kumar Yata** (Springer Nature) ISBN 978-981-334-876-9
2. Sperm Sexing and its Role in Livestock Production (2022) **Vinod Kumar Yata** (Springer Nature) ISBN 978-981-19-1789-9

Books edited

1. Feed Additives and Supplements for Ruminants (2024), **Mahesh M.S , Vinod Kumar Yata**, (Springer Nature), ISBN-9819707935
2. Sustainable Agriculture Reviews 54: Animal Biotechnology for Livestock Production 1 (2021) **Vinod Kumar Yata**, Ashok Kumar Mohanty, Eric Lichtfouse (Springer Nature) (ISBN 978-3-030-76528-6)
3. Sustainable Agriculture Reviews 57: Animal Biotechnology for Livestock Production 2 (2022) **Vinod Kumar Yata**, Ashok Kumar Mohanty, Eric Lichtfouse (Springer Nature) (ISBN: 978-3-031-07495-0)
4. Sustainable Agriculture Reviews 59: Animal Biotechnology for Livestock Production 3 (2022) **Vinod Kumar Yata**, Ashok Kumar Mohanty, Eric Lichtfouse (Springer Nature) ISBN: 978-3-031-21629-9
5. Sustainable Agriculture Reviews: Animal Biotechnology for Livestock Production 4 (2024) **Vinod Kumar Yata**, Ashok Kumar Mohanty, Eric Lichtfouse (Springer Nature) 978-3-031-54371-5
6. Nanopharmaceuticals: Principles and Applications vol.1, (2021) **Vinod Kumar Yata**, Shivendu Ranjan, Nandita Dasgupta and Eric Lichtfouse, Editors (Springer Nature) (ISBN 978-3-030-44924-7)
7. Nanopharmaceuticals: Principles and Applications Vol.2, (2021) **Vinod Kumar Yata**, Shivendu Ranjan, Nandita Dasgupta and Eric Lichtfouse, Editors (Springer Nature) (ISBN 978-3-030-44921-6)
8. Nanopharmaceuticals: Principles and Applications Vol.3, (2020) **Vinod Kumar Yata**, Shivendu Ranjan, Nandita Dasgupta and Eric Lichtfouse, Editors (Springer Nature) (ISBN 978-3-030-47120-0)

List of Publications in international journals

1. Majumdar S, Prajapati SK, Dande A, **Yata VK**, Choudhary K, Peraman R, Kumar N, Krishnamurthy S. Integrative Proteomics Reveal Neuroimmune and Dopaminergic Alterations Across the Nociceptive Neuraxis in Neuropathic Pain. *Cells*. 2026; 15(3):290. <https://doi.org/10.3390/cells15030290>.
2. **Vinod Kumar Yata**, Das, Om Pritam, B. V. S. Lakshmi, M. Vaishnavi, Mohd Arif Uddin, Aparna Srikantam, , and Sarad Pawar Naik Bukke. "Development of a Machine Learning-Based Interface for Insulin Dependency Prediction Using Clinical Data." (2025). *Scientific reports* 15, 38720.
3. **Yata VK**, Das OP, Dansana J, Gadtya A, Meher BR, Bukke SPN and Kolliputi N (2025) Designing novel peptides with amyloid- β binding and clearance potential using BiLSTM and molecular dynamics. *Front. Artif. Intell.* 8:1709505. doi: 10.3389/frai.2025.1709505.
4. Enuganti, Dhruv, Navya Bandharam, Bhavishya Narra, Vinod Kumar Yata, and Narasaiah Kolliputi. "Manipulating the PANoptosome: baseless hype or a newfound hope for human immunity?." *Apoptosis* (2025): 1-11.
5. Chettupalli, Ananda Kumar, Sarad Pawar Naik Bukke, Jai Vardhan, Shika Yadhav, Bharath Kumar Mamilla Mugaiahgari, Patibandla Jahnvi, Vinod Kumar Yata, and Bayapa Reddy Narapureddy. "Polyherbal formulations and phytosome-based delivery in diabetic wound healing: an integrative review." *Journal of Biomaterials Science, Polymer Edition* (2025): 1-28.
6. Navuluri, N., **Yata, V.K.**, Dachani, S.R. Kolliputi N. Heme Unleashed: NLRP12 Orchestrates PANoptosis in a Symphony of Cell Fate. *Cell Biochem Biophys* (2025). <https://doi.org/10.1007/s12013-025-01712-7>
7. **Yata, V.K.**, From Bioreactors to Organoids: Tools for Culturing and Understanding Microbiota, *Indian journal of microbiology (Springer)* (2025) //10.1007/s12088-025-01460-5
8. Dachani, Sudharshan Reddy, Rishikesh Shukla, Bharath Kumar Kakkireni, Balla Sai Mrudula, and Vinod Kumar Yata. "Stable Mutant Identification in Bacteriophage T4 Lysozyme Using Message-Passing Neural Network." *Letters in Applied NanoBioScience* (2025): 14 (3)-184
9. Dachani S R, Shukla R , Kakkireni B K , Sadineni S , Mrudula B S , Malothu R & **Yata V K** (2025) Neural network based prediction of site-specific stable mutants in wild type CFTR protein *Indian Journal of Biochemistry & Biophysics*, 62:511-517 DOI: 10.56042/ijbb.v62i5.14275.
10. Shivaprasad Chitta, Supriya Chandu, Krishna Chaitanya Katha, Syam Sundar Junapudi, **Vinod Kumar Yata**, Sunil Junapudi. (2025) Clinical and demographic predictors of heart failure outcomes: A machine learning perspective *Eurasian Journal of Medicine and Oncology* 6583
11. **Yata V.K.** Ex vivo and miniaturized in vitro *models* to study microbiota-gut-brain axis. *3 Biotech* **14**, 280 (2024)
12. Diptaraj Chaudhari, Shalini Jain, **Vinod Kumar Yata**, Sidharth Mishra, Ambuj Kumar Amoy Fraser Judyta Kocielek Mariana Dangiolo Amanda Smith Adam Golden Michal. Masternak, Peter Holland Marc Agronin Cynthia Williams Arikawa, Andrea Labyak,, Hariom Yadav (2023), Unique trans-kingdom microbiome structural and functional signatures predict cognitive decline in older adults, *GeroScience*, 45, pages 2819–2834
13. **Yata VK**, Gangwar DK, Sharma V, Dubey SK, Shiv Kumar Yadav SK, Choudhary S, Kumar S, Mohanty TK and Mohanty AK (2020) Semen analysis and sperm characteristics of Karan Fries cattle, *Animal Reproduction Science*, 212, p.106250. [Elsevier Publisher]
14. **Yata VK** (2019) Engineered nanostructured materials: benefits and risks, *Environmental Chemistry Letters*, 17 (4) pp 1523–1527 [Springer Publisher]
15. **Yata VK**, Tiwari P, Ahmad I (2018) Nanoscience in food and agriculture: research, industries and patents, *Environmental Chemistry Letters*, 16(1):79–84 [Springer Publisher]

16. **Yata, V. K.**, Singh, S. K., Kumar, S., Mohanty, T. K., & Mohanty, A. K. (2022). Use of sexed semen for genetic improvement of indigenous dairy cattle and buffaloes productivity. *The Indian Journal of Animal Sciences*, 92(7), 797–805.
17. **Yata, V. K.**, Yadav, N., Katoch, V., Gangwar, D. K., Kumar, S., Mohanty, T. K., Prakash, B., & Mohanty, A. K. (2022). Enrichment of motile spermatozoa from cattle semen samples by microfluidics method. *The Indian Journal of Animal Sciences*, 92(6), 711–716.
18. **Yata VK**, Thapa A, Kumar MVS (2015) Structural insight into the binding interactions of modeled structure of Arabidopsis thaliana urease with urea: an in silico study, *Journal of Bio molecular Structure and Dynamics* 33(4), 845–851, [Taylor & Francis]
19. **Yata VK** and Ghosh SS (2012) Investigating structure and fluorescence properties of green fluorescent protein released from chitosan nanoparticles.,*Materials Letters* 73:209-211 [Elsevier Publisher]
20. **Yata VK**, Gopinath P and Ghosh SS (2012) Emerging implications of non-mammalian cytosine deaminases on cancer therapeutics, *Applied Biochemistry And Biotechnology*167:2103–2116 [Springer Publisher]
21. **Yata VK** and Ghosh SS (2011) Synthesis and characterization of a novel chitosan based *E. coli* cytosine deaminasenano composite for potential application in prodrug enzyme therapy, *Biotechnology Letters* 33(1):153-7[Springer Publisher]
22. **Yata VK**, Sen K, Kumar MVS and Ghosh SS (2012) Interaction studies of *E. coli* uracil phosphoribosyltransferase with 5-fluorouracil for potent anti cancer activity, *Medicinal Chemistry Research* 21 (7): 1149-1155 [Springer Publisher]
23. **Yata VK**, Banerjee S and Ghosh SS (2014) Folic acid conjugated-bio polymeric nanocarriers: Synthesis, characterization and functional delivery of prodrug converting enzyme, *Advanced Science, Engineering and Medicine* 6(4):388- 392 [American Scientific Publishers]
24. Pandey, D., Daverey, A., Dutta, K., **Yata, V.K.** and Arunachalam, K., (2022) Valorization of waste pine needle biomass into biosorbents for the removal of methylene blue dye from water: Kinetics, equilibrium and thermodynamics study. *Environmental Technology & Innovation*, 102200, IF: **7.758**
25. Boro, M., Verma, A. K., Chettri, D., Yata, V. K., & Verma, A. K. (2022). Strategies involved in biofuel production from agro-based lignocellulose biomass. *Environmental Technology & Innovation*, 102679. IF: **7.758**
26. **Yata VK**, Mahajan A, Thapa A, Ahmed S, Biswas AD, A Sanjeev A and , Kumar MVS (2016) In silico methods reconfirm CDK2 as a potential molecular target of 5- fluorouracil , *Indian Journal of Biochemistry and Biophysics* 53:199-205 (CSIR- NISCAIR) IF: **1.47**
27. **Yata V K**, Biswas AD , Deb A, Sanjeev A, Mattaparthi VSK (2021) Identification of Cucumis Sativus Urease as a Potential Urea Binding Enzyme by Computational Methods *Biointerface Research in Applied Chemistry*, 11 (2) 9184 – 9200
28. **Yata VK**, Dutta N, Das D, Mattaparthi VSK (2021) An In Silico Study for the identification of Novel Putative Compounds Against the Wild and Mutant Type Penicillin Binding Protein 2 of Neisseria Gonorrhoeae, *Biointerface Research in Applied Chemistry* 11(2) 8996 – 9006
29. **Yata VK**, Das D, Deb A, Das N, Mahanta G, Arora B, Mattaparthi VSK (2021) An In- Silico Study of Stable and Environment-Friendly Oryza sativa Urease, *Biointerface Research in Applied Chemistry* 11(3) 10238 – 10247
30. Chettupalli, A. K., Ananthula, M., Amarachinta, P. R., Bakshi, V., & **Yata, V. K.** (2021). Design, Formulation, In-Vitro and Ex-Vivo Evaluation of Atazanavir Loaded Cubosomal Gel, *Biointerface Research in Applied Chemistry* Volume 11(4) 12037 – 12054
31. Chettupalli AK , Amara RR, Amarachinta PR, Manda RM, Garige BSR, &

Yata, V. K. (2022) Formulation and Evaluation of Poly Herbal Liqui-Solid Compact for its Anti-Inflammatory Effect , *Biointerface Research in Applied Chemistry*, Volume 12, Issue 3,3883 – 3899

32. Dandamudi, S.P., Chettupalli, A.K., Dargakrishna, S.P., Nerella, M., Amara, R.R. and **Yata, V.K** (2022) Response Surface Method for the Simultaneous Estimation of Atorvastatin and Olmesartan, *Trends in Sciences*, 19(18)5799-5799.