



Ajeenkya D Y Patil University

D Y Patil Knowledge City, Charholi Bk. Via Lohegaon, Pune – 412 105 (MH) INDIA

FACULTY PROFILE



NAME: Dr. Muthu Sankar Aathi

DESIGNATION: Assistant Professor

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QUALIFICATION: PhD

BIOGRAPHY:

Dr Muthu Sankar Aathi has received M.Sc., M.Phil followed by Ph.D in the field of Bio informatics, Bharathiar University, Coimbatore. He has received prestigious national awards from various funding agencies: i) ICMR Centenary -Post Doctoral Fellowship (2018-2020) at ICMR-National Institute for Research in Reproductive Health (NIRRH), Mumbai ii) DST-SERB-National Post Doctoral Fellowship (2016-2018) at International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi. He has 12 years of research experience in the field of Bio-informatics along with 3 years and 10 months of teaching experience. He has presented his research work at various national and international conferences and has also participated in many workshops. He has published more than 24 research papers out of that 21 research papers in Scopus peer-reviewed journals.

Students Project Guided: B.Tech and M.Tech

CORE COMPETENCY AREAS: Bioinformatics, Human healthcare, Computational Genomics, Drug discovery

PUBLICATIONS:

1. M Sangeetha, **Muthusankar Aathi**, J Anitha (2024). Design and synthesis of linear acetamides as cholesterol lowering agents. Russian Journal of Bioorganic Chemistry. 50(5); 1882-1895.

2. Christy RN, Rajadas SE, Mahizhaveni B, Sucharitha KM, **Muthusankar Aathi**, Saravanan M, Naresh Babu C, Kannan T, Ajith Kumar P, Ramalingam P, Azger D (2023). Myoinositol and Methyl Stearate increases Rifampicin Susceptibility among Drug-Resistant Mycobacterium tuberculosis expressing Rv1819c. Chem Biol Drug Des. 101(4); 883-895.

3. Prabha Kolaindavel, Satheeshkumar Rajendran, **Muthusankar Aathi**, Chinnarasu Chandrasekar, T. A. Sukantha, B. Mythili Gnanamangai, Roberto Acevedo, Koray Sayin, K. J. Rajendra Prasad (2023). Eaton's reagent is an alternative of PPA: Solvent free synthesis, Molecular docking and ADME studies of new angular and linear carbazole based naphtho naphthyridines. Tetrahedron. 135; 1-11.

4 Jaganathan Anitha, **Aathi Muthusankar**, Sundram Viswanathan, Planivel Murugesan, Nallani Chakravarthula Gayathri, Rajendran Selvakumar, Thathan Premkumar (2023). Molecular targeting of prodigiosin against anti-inflammatory genes cyclooxygenase-1 and -2. Process Biochemistry. 126; 260-271.

5. Akanksha Tomar, Sibasis Sahoo, **Muthusankar Aathi**, Shobhan Kuila, Mohd Azeem Khan, Guru Raj Rao Ravi, Jeyakanthan Jeyaraman, Jawahar L Mehta, Kottayil I Varughese, Arockiasamy Arulanadu (2022). Exploring the druggability of oxidized low-density lipoprotein (ox-LDL) receptor, LOX-1, a proatherogenic drug target involved in atherosclerosis. *Biochemical and Biophysical Research Communications*. 623; 59-65.
6. **Muthu Sankar Aathi**, Chandan Kumar, Kaushiki S. Prabhudesai, Dhivya Shanmugarajan, Susan Idicula-Thomas (2022). Mapping of FSHR agonists and antagonists binding sites to identify potential peptidomimetic modulators. *Biochimica et Biophysica Acta – Biomembranes*. 1864: 1-10.
7. G Sathya Priyadarshini, **Aathi Muthusankar**, Ramesh subramani, Selvi Gopal, (2021). Evaluation of the synthesized novel Iridium (III) complexes against HeLa cell lines through in-silico, in-vitro and DNA nicking. *Asian Pacific Journal of Cancer Prevention*. 22(2), pp.447-455.
8. Kaushiki S Prabhudesai, **Muthu Sankar Aathi**, Vikas Dighe, Susan Idicula-Thomas (2021). A 5-mer peptide derived from hinge region of hFSHR exhibits partial agonist activity in vivo. *Biochimica et Biophysica Acta – Biomembranes*. 1863(1): 1-11.
9. Arockiasamy Arulanadu, Akanksha Tomar, Azeem Khan, Sibasis Sahoo, **Muthu Sankar Aathi**, Anmol Chande, Jawahar L Mehta, Kottayil I Varughese (2021). Structure guided inhibitor discovery targeting a membrane receptor involved atherosclerosis. *Acta Crystallographica Section A: Foundations and Advances*. 77, C3
10. Ramachandran Srinivasan, Amballa Chaitanyakumar, Parthiban Subramanian, Anbazhagan Mageswari, Ajitha Gomathi, Velmurugan Aswini, **Aathi Muthu Sankar**, Mohandass Ramya, Kodiveri Muthukaliannan Gothandam (2020). Recombinant engineered phage-derived enzymatic in *Pichia pastoris* X-33 as whole cell biocatalyst for effective biocontrol of *Vibrio parahaemolyticus* in aquaculture. *International Journal of Biological Macromolecules* 154: 1576-1585.
11. **Muthusankar Aathi** and Shanmughavel Piramanayagam (2019). From EST to structure models for functional inference of APP, BACE1, PSEN1, PSEN2 genes. *Bioinformatics*. 15(10): 760-771.
12. Rajendran Satheeshkumar, Lincy Edatt, **Aathi Muthusankar**, V. B. Sameer Kumar and Karnam Jayarampillai Rajendra Prasad (2019). Synthesis of novel quin[1,2-b]acridines: *In vitro* cytotoxicity and molecular docking studies. *Polycyclic Aromatic Compounds*. 41; 1-15.
13. Rajendran Satheeshkumar, **Aathi Muthusankar**, Lincy Edatt, V. B. Sameer Kumar, Hazel A. Sparkes and Karnam Jayarampillai Rajendra Prasad (2018). Synthesis of heteroannulated cyclopent[b]indoles: Exploration of *in vitro* cytotoxicity and molecular docking studies. *Synthetic Communications*. 48: 447-461.
14. Radhika Ramachandran, **Muthusankar Aathi**, Durairaj D Ruban, Shanmughavel Piramanyagam (2017). Computational Screening of CCR5 Inhibitors as Potential Entry Inhibitor Microbicides Using 3D-QSAR Studies. Docking and Molecular Dynamics Simulation. *Current HIV Research*. 15; 234-244.
15. Pushparaj Karthika, Chithravel Vadivalagan, **Aathi Muthusankar**, Kadarkarai Murugan, Natraj Krishnaveni, Paola Del Serrone, Marcello Nicoletti, Giovanni Benelli (2017). Methyl linolenate as a feeding stimulant for the 28-spotted potato ladybird, *Henosepilachna vigintioctopunctata*? A molecular docking approach. *Physiological and Molecular Plant Pathology*. 101: 75-84.

16. Palanivelu Nithya, Sannasi Helena, Jim Simpson, Malaichamy Ilanchelian, **Aathi Muthusankar**, Subbiah Govindarajan (2016). New cobalt(II) and nickel(II) complexes of benzyl carbazate Schiff bases: Syntheses, crystal structures, in vitro DNA and HSA binding studies. *Journal of Photochemistry & Photobiology, B: Biology*. 165; 220-231.

17. Rajendran Selvakumar, Steven J. Geib, **Aathi Muthu Sankar**, Thathan Premkumar, Subbaiah Govindarajan (2015). The chemistry of aminoguanidine derivatives-preparation, crystal structure, thermal properties and molecular docking studies of aminoguanidinium salts of several carboxylic acids. *Journal of Physical and Chemistry of Solids*. 86; 49-56.

18. R. Satheeshkumar, C. Kavitha, **A. Muthusankar**, P. Shanmughavel and K.J. Rajendra Prasad (2015). Quinoline alkaloids – Synthesis, molecular docking studies of atanine, 2-isopropylfuro [2,3-b] quinolines and 3,4-dihydro-2,2-dimethyl-2H-pyrano [2,3-b]quinolines. *Indian Journal of Chemistry-B*. 54B; 988-998.

19. K Satyavani, S Gurudeeban, T Ramanathan and **A Muthusankar** (2015). Influence of *Rhizophora apiculata* Flavonoids on chemical and thermal induced nociceptive models. *British Journal of Pharmaceutical Research*. v7(2):p102-109.

20. **Aathi Muthusankar** and Shanmughavel Piramanyagam (2013). *In silico* validation of Human NDRG2 protein against Alzheimer's disease using molecular modeling, docking and dynamics studies. *Drug Invention Today*. 5; 22-27.

Book Chapter:

1. Rohan Malhotra and **Muthusankar Aathi** (2025). Nanodrugs: Recent development and therapeutic application. *NanoMind: Exploring Synergies in Nanotechnology and Machine Learning* (Springer Nature), ISBN 978-3-031-77296-2, V 27, pp 95–112.

2. Poulami Bhattacharya, Vidhi Athwani, Timiksha Vijay, **Muthusankar Aathi** (2025). The Role of Diet and Nutrition in Alzheimer's Disease: Exploring the Gut-Cognitive Health Connection (Elsevier) (Accepted)

3. Sanika Bhosale, Namrata Chauhan, **Muthusankar Aathi** (2024). A thorough review on pathways, treatment and diagnosis of lynch syndrome. *Contemporary Research in Science and Technology* (ISBN: 9798893220964, Notion Press)

ACHIEVEMENTS/AWARDS/RECOGNITIONS:

- Served as the **Session Chair** at the **International Conference on Recent Trends in Artificial Intelligence and Data Science Engineering (ICRTAIDS - 2025)**, organized by the Department of Artificial Intelligence and Data Science on 4th April 2025 at Ajeenkya DY Patil School of Engineering, Pune.
- Subject Expert in “**Designing the syllabus for M.Tech Bioengineering programs, specializing in Bioinformatics**” (2025), (Fundamentals of Perl and BioPerl, Data Mining in Bioinformatics, Next Generation Sequencing, Machine Learning for Biological System) at Erba Global MedTech University, AMTZ Campus, Visakhapatnam, Andhra Pradesh, India.
- Appointed an examiner to assess performance in the **Ph.D course work subjects** titled “**Recent trends in the topic of research**” (2024) at MGM University, Aurangabad, Maharashtra.
- **Delivered a guest lecture** on the topic “**Report Writing, Ethics in Research Publication, Importance of Plagiarism**” during the Workshop on Research held on 15th March 2024, organized by the School of Management, Ajeenkya DY Patil University, Pune.
- **Special Appreciation Award** for outstanding service and contribution during the academic year 2022-23, Ajeenkya DY Patil University, Pune.
- **Certificate of Appreciation** for participating as a **Faculty Coordinator** for the “**MANAV Scientific Reading and Comprehension Self-Assessment Module (for students)**”, conducted by Project MANAV– The Human Atlas Initiative in September to October 2021.

SEMINARS / WORKSHOPS / CONFERENCES ATTENDED:

- Participated one-week online faculty development program on “**Chemical Process Safety**” from 16th to 20th December 2024 by Sinhgad College of Engineering, Pune.
- Participated International symposium on “**Niche areas of sustainable development**” ISNASD’24 from 2nd to 6th September 2024 by PVG’s COET & GKPIOM, Pune.
- Participated one-week International faculty development program on “**AI for Sustainable Development**” from 5th to 9th August 2024 by VIIT, Pune.
- Participated one-week faculty development program on “**Recent trends in healthcare**” from 18th to 22nd December 2023 by Vishwakarma Institute of Information Technology, Pune.
- Participated International faculty development program on “**Advances in Machine Learning, Image processing and Natural Language processing**” from 16th to 21st August 2023 by Nagaland University, Nagaland.
- Successfully completed the UGC-Approved short-term professional development program (**Obtained ‘A’ Grade**) “**Implementation of NEP-2020 for University and College Teachers**” from 8th- 16th May 2023.

- Participated FDP on “**Research Methodology and IPR**” from 22nd-24th August 2022 by KJ College of Engineering and Management Research, Pune.
- Attended E-workshop “**Structure based and ligand based drug design**” (2020) by JSS college of Pharmacy, Mysuru.
- Hands-on training webinar workshop “**Faculty development program on Python**” (2020) by Indian Institute of Technology, Mumbai.
- Workshop on “**Fundamental of Molecular Simulation 2019**” (2019) by Indian Institute of Technology, Kanpur.
- Hands-on training workshop on “**Protein crystallization in lipid bilayer**” (2018) conducted by ICGEB, New Delhi.