Dr. D.Y. Patil Vidyapeeth's
Dr. D. Y. Patil Biotechnology and Bioinformatics Institute
Mumbai-Bangalore Express High way, Tathawade, Pune 411033
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Dr. Sahil Jain

Designation: **Assistant Professor**

Email ID: sahil.jain@dpu.edu.in

Qualification: PhD

Specialization: Bioinformatics

Research Interest: Peptide vaccine; Virology; Drug discovery; Neurological diseases

Educational Qualifications

PhD (Computational Immunology, Biotechnology), Thapar Institute of Engineering and Technology (TIET), Patiala, India – 2015-20.

Work Experience

1. Assistant Professor, Dr. D. Y. Patil Biotechnology & Bioinformatics Institute (DYPBBI), Pune, Maharashtra, India from Sep 2024-Present.
2. Postdoctoral fellow, Department of Biochemistry and Molecular Biology, George S. Wise Faculty of Life Sciences, Tel Aviv University, Israel from Oct 2021 – Sep 2024.
3. Assistant Professor, University Institute of Biotechnology, Chandigarh University, Mohali, India from Dec 2020 – Sep 2021.
4. Biotechnology faculty at Edutap, Panchkula, India from May 2020 – Dec 2020.
5. Teaching Associate at TIET, Patiala, India from Jul 2016 – Jun 2019.
6. Product Manager at Santrix Pharma, New Delhi, India from Jan 2013 – Jan 2015.
7. Test Engineer at Infosys Limited, Pune, India from Jun 2011 – Dec 2012.

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Awards

1. Co-PI in two best poster awards received in "International Conference on Advances in Biotechnology and Bioinformatics (ICABB 2024)".
2. Qualified Pearson PTE Academic English Test, 2024 (90/90 in all categories).
3. Won the "Editor's choice" for 2023 in the prestigious pathogens journal.
4. George S. Wise postdoctoral fellowship, 2021-2022.

Bioinformatics and Biotechnology skills

1. **Computational –** Drug designing, molecular docking, molecular dynamics, protein structural/functional analysis, protein-protein interaction analysis, epitope prediction, and phylogenetic analysis.
2. **Wet lab –** Molecular cloning, western blotting, ELISA, mammalian cell culture, confocal imaging, transduction, PCR, FACS, cell organelle isolation, seahorse, and calcium imaging.

Reviewer

1. Nature: Scientific Reports
2. Phytotherapy Research
3. Frontiers in Microbiology, Frontiers in Immunology
4. International Journal of Imaging Systems and Technology

Scientific Committee member

1. BIOinformatics CLUb for Experimenting Scientists (Bioclues)
2. Indian Immunology Society (IIS), New Delhi

Publications

1. **Jain S.***, Paz E. and Azem A (2024). Hotspots for Disease-Causing Mutations in the Mitochondrial TIM23 Import Complex; Genes; 15(12):1534. https://doi.org/10.3390/genes15121534 ISSN: 2073-4425 (SCI, IF = 2.8)
2. Sharkia R., Vuillaume M.-L., **Jain S.**, Mahajnah M., Stoeva R., Guichet A., Colin E., Champ J., Derive N., Chefdor A. and Zalan A (2024). An update of phenotypic–genotypic IMNEPD cases and a bioinformatics analysis of the new PTRH2 gene variants; Genes; 15(12):1508. https://doi.org/10.3390/genes15121508 ISSN: 2073-4425 (SCI, IF = 2.8)
3. Paz E.†, **Jain S.**†, Gottfried I., Bagchi P., Seyfried N.T., Ashery U. and Azem A (2024). Biochemical and neurophysiological effects of deficiency of the mitochondrial import protein TIMM50; eLife; 13:RP99914. https://doi.org/10.7554/eLife.99914.1 ISSN: 2050-084X (SCI, IF = 7.7)

4. Kaur G., **Jain S.,** Bhushan S., Das N., Sharma M. and Sharma D (2024). Role of microRNAs and their putative mechanism in regulating potato (*Solanum tuberosum* L.) life cycle and response to various environmental stresses; Plant Physiology and Biochemistry; 207:108334. https://doi.org/10.1016/j.plaphy.2024.108334 ISSN: 0981-9428 (SCI, IF = 6.5)
5. Devi A., **Jain S.,** Singhal D., Kumar V., Ghosh A., Dwibedi V., George N. and Khan Z.A (2023). Multiple Ligand Simultaneous Docking Analysis of Epigallocatechin-o-gallate (Green Tea) and Withaferin A (Ashwagandha) Effects on Skin-aging Related Enzymes; Indian Journal of Pharmaceutical Sciences; 85(4):1045-1067. https://doi.org/10.36468/pharmaceutical-sciences.1171 ISSN: 0250-474X (SCI, IF = 0.97)
6. Kumari S., Kessel A., Singhal D., Kaur G., Bern D., Lemay-St-Denis C., Singh J. and **Jain S** (2023)**.** Computational identification of a multi-peptide vaccine candidate in E2 glycoprotein against diverse Hepatitis C virus genotypes; Journal of Biomolecular Structure and Dynamics; 41(20):11044-11061. https://doi.org/10.1080/07391102.2023.2212777 ISSN: 0739-1102 (SCI, IF = 5.23)
7. Sharkia R., **Jain S.,** Mahajnah M., Habib C., Azem A., Al-Shareef W. and Zalan A (2023). PTRH2 Gene Variants: Recent Review of the Phenotypic Features and Their Bioinformatics Analysis; Genes; 14(5):1031. https://doi.org/10.3390/genes14051031 ISSN: 2073-4425 (SCI, IF = 4.141)
8. **Jain S.,** Khaiboullina S., Morzunov S. and Baranwal M (2023). Epidemiology of ebolaviruses from an etiological perspective; Pathogens; 12(2):248. https://doi.org/10.3390/pathogens12020248 ISSN: 2076-0817 (SCI, IF = 4.531)
9. Dwibedi V., Rath S.K., **Jain S.,** Prakash R., Saxena S. and Solis L.R (2023). Key insights into secondary metabolites from various *Chaetomium* species; Applied Microbiology and Biotechnology; 107(4):1077-1093. https://doi.org/10.1007/s00253-023-12365-y ISSN: 0175-7598 (SCI, IF = 5.56)
10. Liu R., Du S., Zhao L., Li S., **Jain S.,** Sahay K., Rizvanov A., Lezhnyova V., Khaibullin T., Martynova E., Khaiboullina S. and Baranwal M (2022). Autoreactive lymphocytes in multiple sclerosis: Pathogenesis and treatment target; Frontiers in Immunology; 13:99646. https://doi.org/10.3389/fimmu.2022.996469 ISSN: 1664-3224 (SCI, IF = 8.78)
11. Kaushal N., **Jain S.** and Baranwal M (2022). Computational design of immunogenic peptide constructs comprising multiple HLA restricted Dengue virus envelope epitopes; Journal of Molecular Recognition; 35(9):e2961. https://doi.org/10.1002/jmr.2961 ISSN: 0952-3499 (SCI, IF = 2.891)
12. Dwibedi V., **Jain S.,** Singhal D., Mittal A., Rath S.K. and Saxena S (2022). Inhibitory activity of grape bioactive compounds against enzymes linked with human disease; Applied Microbiology and Biotechnology; 106(4):1399-1417. https://doi.org/10.1007/s00253-022-11801-9 ISSN: 0175-7598 (SCI, IF = 5.56)
13. **Jain S.,** Martynova E., Rizvanov A., Khaiboullina S. and Baranwal M (2021). Structural and functional aspects of Ebola virus proteins; Pathogens; 10(10):1330. https://doi.org/10.3390/pathogens10101330 ISSN: 2076-0817 (SCI, IF = 4.531)
14. Garg A., Parashar A., Barman D., **Jain S**., Singhal D., Masud M. and Abouhawwash M (2021). Autism Spectrum Disorder Prediction by an Explainable Deep Learning Approach; CMC-Computers, Materials & Continua; 71(1):1459-1471. https://doi.org/10.32604/cmc.2022.022170 ISSN:1546-2218 (SCI, IF = 3.86)

15. **Jain S.** and Baranwal M (2021). Conserved immunogenic peptides of Ebola glycoprotein elicit immune response in human peripheral blood mononuclear cells; Microbiology and Immunology; 65(11):505-511. https://doi.org/10.1111/1348-0421.12935 ISSN:0385-5600 (SCI, IF = 2.962)
16. Johri S., Goyal M., **Jain S.,** Baranwal M., Kumar V. and Upadhyay R (2021). A novel machine learning based analytical framework for automatic detection of COVID-19 using chest x-ray images; International Journal of Imaging Systems and Technology; 31(3):1105-1119. https://doi.org/10.1002/ima.22613 ISSN:0899-9457 (SCI, IF = 2.177)
17. **Jain S.,** Khaiboullina S. and Baranwal M (2020). Immunological perspective for Ebola virus infection and various treatment measures taken to fight the disease; Pathogens; 9(10):850. https://doi.org/10.3390/pathogens9100850 ISSN: 2076-0817 (SCI, IF = 4.531)
18. **Jain S.** and Baranwal M (2019); Conserved peptide vaccine candidates containing multiple Ebola nucleoprotein epitopes display interactions with diverse HLA molecules; Medical Microbiology and Immunology; 208(2):227-238. https://doi.org/10.1007/s00430-019-00584-y ISSN: 0300-8584 (SCI, IF = 3.402)
19. **Jain S.** and Baranwal M (2019); Computational analysis in designing T cell epitopes enriched peptides of Ebola glycoprotein exhibiting strong binding interaction with HLA molecules; Journal of Theoretical Biology; 465:34-44. https://doi.org/10.1016/j.jtbi.2019.01.016 ISSN: 0022-5193 (SCI, IF = 2.405)
20. Dhiman G., Lohia N., **Jain S.** and Baranwal M (2016); Metadherin peptides containing $CD4^+$ and $CD8^+$ T cell epitopes as vaccine candidate against cancer; Microbiology and Immunology; 60(9):646-52. https://doi.org/10.1111/1348-0421.12436 ISSN:0385-5600 (SCI, IF = 2.962)

Book Chapters

1. Kumari S., Singhal P., Bhushan A., Jain R. and **Jain S** (2024); Going Nano for Neuro: Nanoparticle-Based Treatment of Central Nervous System Diseases; Nanomaterials for Drug Delivery and Neurological Diseases Management; Springer Nature; ISBN: 9789819703074. (*Accepted*)
2. Kumari S. and **Jain S** (2024)**.** Medicinal plants and herbs in viral hepatitis; Promising Antiviral Herbal and Medicinal Plants; CRC Press; ISBN: 9781032358802.
3. Singhal P., Bansal H., Kumari S. and **Jain S** (2023); Deep learning piloted drug design: An advantageous alliance; Bioinformatics and Computational Biology: Technological Advancements, Applications and Opportunities; Chapman and Hall/CRC; 98-111. eISBN: 9781003331247.
4. Dwibedi V., **Jain S**., Mittal A., Devi A., Walia H.K., Rath S.K. and Cuevas P.A.D (2023); Chromenes and Nutraceuticals; The Role of Chromenes in Drug Discovery and Development; Bentham Sciences; 129-150. ISBN: ISBN: 9789815124347.
5. Lugani Y., **Jain S**., Agnihotri C., Kaur N., Agnihotri S. and Singh B.P (2023); Antimicrobial active packaging materials for shelf life extension of fruits and vegetables: recent trend and future perspectives; Postharvest Management of Fresh Produce: Recent Advances; Academic Press; 265-293. ISBN: 9780323911320.
6. **Jain S.** and Baranwal M (2021); Immunoinformatics aided design of peptide-based vaccines against ebolaviruses; Vitamins and Hormones; Academic Press; 117:157-187. ISSN: 0083-6729.

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Conferences/Workshops organized

1. A core member of the organizing committee of international conference on "International Conference on Advances in Biotechnology and Bioinformatics (ICABB 2024)" held from 26-29 Nov, 2024 at DYPBBI, Pune, India.
2. A workshop on "Computational Genome and Proteome analysis: An Introduction" held from 29-30 June, 2021 at Chandigarh University, Mohali, India.
3. A core member of the organizing committee of international conference on "Food Security: Challenges and Opportunities" held from 7-8 Dec, 2018 at TIET, Patiala, India.
4. A core member of the organizing committee of international conference on "Drug Discovery: Biotechnology & Pharma at CrossRoads" held from 15-17 Feb, 2018 at TIET, Patiala, India.

Oral presentations

1. "Analyzing the effects of Timm50 mutation on the human mitochondrial proteome" in "4th mito-symposium on the mitochondrial functions" held on 26th June, 2023 at Weizmann Institute of Science, Israel.
2. "*In silico* identified immunogenic Ebola nucleoprotein peptides elicit immune response" in "International Conference on Bioinformatics and Systems Biology" held from 20-21 Mar, 2019 at Singapore.

Poster presentations

1. "Computational analysis in designing T cell epitope enriched peptides of Ebola glycoprotein" in IMMUNOCON 2018 held from 1-3 Nov, 2018 at THSTI, Faridabad, India.
2. "Peptides containing multiple T cell epitopes in Carcinoembryogenic antigen" in the Punjab IMA conference (PIMACON) held on 21 Jan, 2018 at Amritsar, India.
3. "*In silico* prediction of immunogenic metadherin peptides containing overlapping T-cell epitopes" in FIMSA Advanced Immunology Course held from 17-19 March, 2016 at PGI, Chandigarh, India.

Trainings/Workshops completed

1. A 3-day workshop "Mitochondria: Past and Present" hosted by Israel Science Foundation (ISF) from 13-16 November, 2022 at Ein Gedi Kibbutz Hotel, Dead Sea, Israel.
2. Speaker in workshop "Computational Genome and Proteome analysis: An Introduction" held from 29-30 June, 2021 at Chandigarh University, Mohali, India.

3. A 12-day virtual workshop on "ENSEMBL Genome Browser" hosted by Decode Life and EMBL-EBI from 18-29 June, 2021.
4. A 21-day e-training on "Skill Development on Advanced Bioinformatics in Genome Analysis of Livestock and Pets" sponsored by DBT held from 5-25 Mar, 2021 at Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India.
5. A 3-day workshop "Computational Drug Design and Molecular Docking" sponsored by Schrodinger held from 27-29 Apr, 2018 at TIET, Patiala, India.
6. E-certificate in "Understanding Research: An Overview for Health Professionals" authorized by University of California, San Francisco, 2014.