

### **Dr. Sahil Jain**



**Designation:** Assistant Professor

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

**Qualification:** PhD

**Area of 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.

#### **ACADEMIC AND RESEARCH EXPERIENCE:**

1. Assistant Professor, Dr. D. Y. Patil Biotechnology & Bioinformatics Institute, 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.

#### **AWARDS AND ACHIEVEMENTS:**

1. Qualified Pearson PTE Academic English Test, 2024 (90/90 in all categories)
2. Won the “Editor’s choice” for 2023 review article in the prestigious Pathogens journal.
3. George S. Wise postdoctoral fellowship, 2021-2022

### REVIEWER:

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

### INTERNATIONAL ADVISORY COMMITTEE MEMBER:

### SCIENTIFIC COMMITTEE MEMBER:

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

### PUBLICATIONS:

1. 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)
2. 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)
3. 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)
4. 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)

5. 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)
6. **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)
7. 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)
8. 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)
9. 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)
10. 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)
11. **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)
12. 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)
13. **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)
14. 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)
15. **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)

16. **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)

17. **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)

18. 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. Dwivedi 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.

### **CONFERENCE PROCEEDINGS:**

### **CERTIFICATIONS:**

E-certificate in “Understanding Research: An Overview for Health Professionals” authorized by University of California, San Francisco, 2014

### **EPIGEUM (Research Skill Courses):**

### **CONFERENCES (Abstracts/Oral/Poster):**

### **Oral presentations**

1. "Analyzing the effects of Timm50 mutation on the human mitochondrial proteome" in "4<sup>th</sup> mito-symposium on the mitochondrial functions" held on 26<sup>th</sup> 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.

### **WORKSHOPS:**

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.

### **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.