

JASWINDER KAUR SAINI

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SUMMARY

Dedicated researcher and enthusiastic educator with knowledge across the domains of Microbiology, Molecular Biology and Bioinformatics. I have worked as a Bioinformatics Instructor for a year during my doctorate in Microbiology. With my research-based teaching and effective communication skills, I bring the real world to the classroom that encourages students' development. I have guided many master's students' research projects as an intermediate. I am seeking a position which will enable me to deliver the courses to the next generation of biologists while developing myself personally and professionally.

SKILLS

- **Microbiology:** Culturing techniques (Bacterial, Fungal, Malarial culture), Design of experiments
- **Molecular Biology:** PCR, SDS-PAGE, Cloning and expression in *E. coli*, Protein purification (Affinity chromatography, Size exclusion chromatography), Protein refolding
- **Biochemistry:** *In vitro* assay development (optimization, validation, compound screening)
- **Botany:** Phytochemical extraction and analysis of extracts through chromatographic techniques-TLC, HPLC, LC-MS-QTOF analysis
- **Bioinformatics:** Basic bioinformatics, Studying molecular interactions, Protein structure prediction
- **Research and analysis tools:** Basic tools, Modern tools-Adobe Illustrator, Design-Expert, GraphPad Prism, Serial Cloner, SnapGene
- **Soft skills:** Effective planning and scheduling, Critical analysis, Solving problems creatively, Communicating effectively, Collaborating, Leading with a positive attitude

EDUCATION

Ph.D. (Microbiology)

Jan. 2022

Department of Microbiology and Biotechnology Centre,
The Maharaja Sayajirao University of Baroda,
Vadodara, Gujarat, India.

Dissertation: Studies on the Antiplasmodial Activity of Medicinal Plants
by Ethnopharmacological Approach
Guide: Prof. Sanjaykumar S. Ingle

M-Tech (Biotechnology Engineering)

Dec. 2012

University Institute of Engineering and Technology,
Kurukshetra University
Kurukshetra, India
Percentage: 87.2%

B-Tech (Biotechnology)

Jun. 2010

Seth Jai Parkash Mukund Lal Institute of Engineering & Technology,
Radaur (affiliated to Kurukshetra University),
Yamunanagar, Haryana, India
Percentage: 77.8%

SCHOLARSHIPS AND GRANTS

EMBO grant

Dec. 2021

The grant was provided to attend the following virtual workshop: "Recent advances in structural biology of membrane proteins", EMBL, Heidelberg, Germany, 29th Nov. – 1st Dec. 2021.

UGC-Research Fellowship in Sciences for Meritorious Students

2015-2020

The fellowship provided financial assistance while pursuing Ph.D.

University Research Scholarship, The Maharaja Sayajirao University of Baroda

Sep. 2014-Jan. 2015

The fellowship provided financial assistance while pursuing Ph.D.

RESEARCH EXPERIENCE

Ph.D. Dissertation

2014-2022

Studies on the Antiplasmodial Activity of Medicinal Plants by Ethnopharmacological Approach

Guide: Prof. Sanjaykumar S. Ingle

- Screening of plant extracts for antiplasmodial activity *in vitro*.
- Cloning and expression of Plasmepsin I (PM I) and Plasmepsin II (PM II), the enzymes from *P. falciparum*.
- Screening of antiplasmodial extracts for PM I and PM II inhibition activity *in vitro*.
- Phytochemical analysis of plant extracts to identify putative PM inhibitors.
- *In silico* studies on interaction between PM I and PM II and the putative inhibitors using AutoDock tool.

M-Tech Dissertation

Aug. 2011-Mar. 2012

Production, partial purification and characterization of Laccase

Guide: Dr. Rajesh Kumar

- Production of Laccase from *Aspergillus flavus* isolated from decaying wood samples.
- Optimization of the enzyme production using Design-Expert 8.0.7.1 tool (DOE tool).

PROFESSIONAL EXPERIENCE

Bioinformatics Instructor

2020-2021

Biotechnology Programme

Department of Microbiology and Biotechnology Centre,

The Maharaja Sayajirao University of Baroda, Gujarat, India

INDUSTRIAL TRAININGS

SHARON BIO-MEDICINE LTD.

Aug. 2009-Oct. 2009

Dehradun, Uttarakhand, India

Training in the Department of Quality Control

CADILA PHARMACEUTICALS LTD.

Jul. 2008-Aug. 2008

Ahmedabad, Gujarat, India

Training in the R & D Biotech Department

PUBLICATIONS

Journal publications

- Munshi, S. J., **Saini, J. K.**, Ingle, S., and Kumar, S. B. (2021). Metal(II) chloride complexes containing a tridentate N-donor Schiff base ligand: syntheses, structures and antimicrobial activity. *Journal of Coordination Chemistry*, 74(12), 2004–2016.
- **Saini, J. K.**, and Ingle, S. (2021). Antiplasmodial activity of extracts and characterization of the most active extract from *Commiphora wightii*: A data deficient medicinal plant. *World Journal of Pharmaceutical Research*, 10(1), 1517–1529.
- Sadhu, M. H., **Saini, J. K.**, Ingle, S. S., and Kumar, S. B. (2018). Mononuclear Copper(II) Halide Complexes with Tetradentate N3S-Coordinate Ligands: Synthesis, Structures and Bioactivities. *ChemistrySelect*, 3(22), 6203–6208.
- Sadhu, M. H., Kumar, S. B., **Saini, J. K.**, Purani, S. S., and Khanna, T. R. (2017). Mononuclear copper(II) and binuclear cobalt(II) complexes with halides and tetradentate nitrogen coordinate ligand: Synthesis, structures and bioactivities. *Inorganica Chimica Acta*, 466, 219–227.
- Kumar, R., **Kaur, J.**, Jain, S., and Kumar, A. (2016). Optimization of laccase production from *Aspergillus flavus* by design of experiment technique: Partial purification and characterization. *Journal of Genetic Engineering and Biotechnology*, 14(1), 125–131.

Journal publications in Review

- **Saini, J. K.**, and Ingle, S., “A simpler method for the expression of Plasmepsin I and Plasmepsin II from *Plasmodium falciparum*”, Submitted to: Open Life Sciences.
- **Saini, J. K.**, and Ingle, S., “Potent inhibitors of *Plasmodium falciparum* specific Plasmepsin I and Plasmepsin II from Plants: *In silico* studies”, Submitted to: Biomedical and Biotechnology Research Journal.

POSTER AND ORAL PRESENTATIONS

- **Jaswinder Kaur Saini** and Sanjaykumar S. Ingle. Overcoming the challenges in expression of malarial aspartic protease plasmepsin I, **Poster presented** at EMBO virtual workshop on “Recent advances in structural biology of membrane proteins”, EMBL, Heidelberg, Germany, 29th Nov.-1st Dec. 2021.

- **Jaswinder Kaur Saini**, Gauri Belwalkar and Sanjay S. Ingle. Investigation of antimalarial potential of *Swertia chirayita*, **Poster presented** at “**One day international Conference on Vaccine development and Infectious diseases and 3rd Prof. V. V. Modi Lecture**”, Department of Microbiology and Biotechnology Centre, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, India, 7th Jan. 2019.
- **Jaswinder Kaur Saini**, Avnish Raval, Kedar Gokhale and Sanjay S. Ingle. Screening of phytochemicals to target *Plasmodium falciparum* Plasmeprin-1, **Poster presented** at International workshop on “**Malaria Parasite Biology: Strategies for Drug and Vaccine development**”, ICGEB, New Delhi, India, 29th Nov. - 1st Dec. 2017.
- **Jaswinder Kaur Saini** and Sanjay S. Ingle. Various approaches to fight against Malaria, **Oral presentation** given at “**Science Conclave 2017**”, Faculty of Science, The Maharaja Sayajirao University of Baroda, Gujarat, India, 28th Feb. 2017.
- **Jaswinder Kaur Saini** and Sanjay S. Ingle. Investigation of indigenous plants for antimalarial properties, **Poster presented** at National Conference on “**Malaria Parasite Biology: Drug Designing and Vaccine Development**”, Institute of Science, Nirma University, Ahmedabad, Gujarat, India, 9th -10th Sep. 2016.
- Kanupriya Miglani, **Jaswinder Kaur** and Rajesh Kumar. Optimization of production parameters for alkaline protease production from *Bacillus spp.*, **Poster presented** at National Symposium on “**Emerging trends in Biotechnology**”, Department of Biotechnology, Multani Mal Modi College, Patiala, Punjab, India, 24th Feb. 2012.

WORKSHOPS ATTENDED

- EMBO virtual workshop on “**Recent advances in structural biology of membrane proteins**”, EMBL, Heidelberg, Germany, 29th Nov. – 1st Dec. 2021.
- International workshop on “**Malaria Parasite Biology: Strategies for Drug and Vaccine development**”, (Practical workshop on new techniques in malaria research), ICGEB, New Delhi, 29th Nov. - 1st Dec. 2017.
- **Science Communication Workshop**, Department of Microbiology and Biotechnology Centre, The Maharaja Sayajirao University of Baroda, Gujarat, India, 11th Mar. 2017.

LANGUAGES

Hindi: Distinguished
English: Advanced
Punjabi: Advanced
Gujarati: Intermediate

ACHIEVEMENTS

- Qualified GATE Biotechnology with 92.55 percentile (2012).
- Bagged first prize in National level drama competition held at Kurukshetra University (2011).
- Topped in the final semester of B-Tech (2010).
- Received third prize in PowerPoint presentation in the inter-college technical fest "PRAGYAAM" (2009).
- Stood first in PowerPoint presentation during the technical fest "MILANCHE" in college (2008).
- Stood first in Quiz competition during the technical fest "MILANCHE" in college (2008).

HOBBIES/RECREATIONAL INTERESTS

- Nature-hunting
- Creative writing
- Dancing
- Doing DIY repairs
- Doing Art and Craft work

REFERENCES

1. Prof. Sanjaykumar S. Ingle

Professor, Department of Microbiology and Biotechnology Centre, The Maharaja Sayajirao University of Baroda, Gujarat, India.

Relationship with the applicant: Ph.D. Supervisor

Email: ingle05@yahoo.co.in

Phone: 9978811838(M)

2. Prof. G. Archana

Head, Department of Microbiology and Biotechnology Centre, The Maharaja Sayajirao University of Baroda, Gujarat, India.

Relationship with the applicant: Academic advisor

Email: archanagayatri@yahoo.com

Phone: 0265-2794396(O), 9898722768(M), 265-6581935(R)

3. Prof. Devarshi Gajjar

Coordinator Biotechnology Program, Department of Microbiology and Biotechnology Centre, The Maharaja Sayajirao University of Baroda, Gujarat, India.

Relationship with the applicant: Academic advisor

Email: devarshimistry@yahoo.com

Phone: 0265-2794396(O), 9898933299 (M)

PERSONAL DETAILS

Permanent Address: R-102, Sector-4, Suncity, S.P. Ring-Road, South Bopal, Ahmedabad, Gujarat-380058

Date of Birth: 4th Mar. 1989

Gender: Female

Marital Status: Single

Nationality: Indian

Father's Name: Mr. Balbir Singh Saini

Mother's Name: Mrs. Urmila Devi

DECLARATION

I hereby declare that the information provided above is true to the best of my knowledge.



Signature