

Krittika Zutshi

Email: zutshikrittika08@gmail.com,
krittikazutshi0805@gmail.com

LinkedIn: [KrittikaZutshi](#)

Mobile: +91-8860657999

Place: Kaushambi, Ghaziabad, UP, India

Date of Birth: May 8, 1998

Languages: English, Hindi, French

❖ Summary

An enthusiastic and adaptive person with a broad interest in drug discovery and development. I chiefly enjoy collaborating with scientists from interdisciplinary life sciences to develop new skills and solve new challenges.

❖ Area of Interest

Drug Development, Complex diseases and Theranostics

❖ Research Projects

1. Molecular modelling, design and synthesis of phosphonate ligands targeting hydroxyapatite

▪ Dr. Puja Panwar Hazari, INMAS, DRDO, Delhi (02/2022-07/2022)

- In *silico*, designing of the conjugate Bisphosphonate bound antineoplastic drug. Molecular docking studies of the designed ligand with the targeted receptor proteins. Comparative analysis of the docking score of the novel conjugate with previously synthesised bisphosphonate derivative ligand and the control.
- Organic synthesis of the conjugate ligand bound antineoplastic drug.
- Confirmation of mass obtained of the drugs in each synthesis using High resolution Mass Spectrometry (HRMS).
- Radiolabeling of the conjugate with ^{99m}-Technetium.
- Radiochemical purity analysis of the designed radiolabeled conjugate ligands.
- In *vitro*, Binding of the designed ligand with synthetic hydroxyapatite.
- In *vivo*, SPECT imaging of the conjugated radioligand on an animal model, a New Zealand rabbit.

2. HPLC Analysis of *Withania somnifera* and *Theobroma cacao* at different temperature ranges.

▪ Dr. Selvan Ravindran, SSBS, Pune (11/2021-12/2021)

- Sample preparation, setting up instruments and software parameters

3. Synthesis of phosphonate-based ligands for bone injury and skeletal disorders

▪ Dr. Puja Panwar Hazari, INMAS, DRDO, Delhi (07/2019-01/2020)

- Organic synthesis of bisphosphonate derivative drug
- Radiolabeling of bisphosphonate derivative ligand
- Observing the SPECT imaging of the synthesised bound ligand on an animal model, a New Zealand rabbit.
- Additional: Organic synthesis of SSRI derivatives
- Additional: Neurobehavioral Analysis of rodents on rotarod and Y-Maze

4. Molecular Techniques

▪ Dr. Neeru Saini, CSIR-IGIB, Delhi (03/2019-04/2019)

- DNA and RNA isolation, quantification and visualization
- Western Blotting
- Transfection

5. Processing, Packaging and quality assurance of Beverages

▪ **PI: Ms. Bhawna Saini, Dr. A. Preeti (Co-guide), Moon Beverages, Sahibabad (05/2018-07/2018)**

- Waste-water treatment tests.
- Production of carbonated soft drinks.
- Tests for Incoming packaging quality plan.
- Microbial studies for quality assurance.
- Syrup and Blow moulding preparation.
- Effluent Treatment plant tests

Data analysis and technical writing

6. NTCC Term paper on “Study on Malaria”

▪ **PI: Dr. Namita Bedi, Amity University, Noida (05/2017-07/2017)**

The literature-based study on pathophysiology, geographical distribution, causes and transmission, special groups, diagnosis and treatment was covered for the partial fulfilment of the award of the degree, Bachelors in Biotechnology.

❖ Educational Qualification

- **Masters of Science in Biotechnology:** Symbiosis School of Biological Sciences, Symbiosis International University (SIU), Pune-412115, Maharashtra (2020-2022) (**CGPA 9.04/10**)
- **Bachelors of Science Hons. in Biotechnology:** Amity Institute of Biotechnology, Amity University, Noida-201303, Uttar Pradesh (2016-2019) (**CGPA 6.68/10**)
- **Class 12th, PCB (Science):** Ahlcon Public School, Mayur Vihar Phase-1, Delhi-91 (2016) (**86.5%**)
- **Class 10th, General:** Ahlcon Public School, Mayur Vihar Phase-1, Delhi-91 (2014) (**CGPA 8.2/10**)

❖ Technical Proficiency

- **Microbiology and Virology:** Media preparation, Adhesion and Invasion Assays, Bacterial staining, Plating methods (streak, pour, spread), Growth curve assay, MIC MBC assay, Lyophilization
- **Molecular Biology:** DNA and RNA isolation, quantification and visualization, Agarose and polyacrylamide gel electrophoresis, Preparation of competent cells and assessing their efficiency, Restriction digestion and de-phosphorylation of vector, Preparation of insert, Ligation reaction, Transformation and Blue-white screening, Colony PCR and restriction digestion, Thin Layer Chromatography (TLC), HPLC (PDA)
- **Animal Tissue Culture/ Virology/ Immunology:** Single and Double diffusion Tests, Immunoelectrophoresis, DOT ELISA, Sandwich ELISA, Identification of leucocytes by Giemsa staining, Blood grouping typing, Separation of mononuclear cells, Inoculation of virus from different routes in chicken eggs and cell culture, Hemagglutination assay and Hemagglutination Inhibition test, Cell revival and subculture of cells, MTT Assay, Western Blotting

❖ Co-Curricular and Extracurricular Participations

- **Honour:** Merit scholarship in semester III, for securing highest in M.Sc. Biotechnology Batch 2020-2022 CGPA 9.68/10
- **Certification:**
 - CPR/AED/First Aid, American Heart Association, issued on July 2021, Credential ID: 215694240009
 - Covid-19 Contact Tracing, The John Hopkins University, Issued on May 2021, Credential ID: 6FLXVBYFLKHP

- Completed certified courses in Communication skills, Behavioural Science and Foreign business language (French) from Amity University, Noida
- **Publications:** Quantification of SERT transporter and serotonergic (5-HT1A) receptor binding with (11C)-N-BMPP in CMS rat brain, Indian Journal of Nuclear Medicine; ISSN 0972-3919; Worldcat; v. 34(5,suppl.1); p. 87-88 · Dec 15, 2019 [Abstract](#)
- **Position of Responsibility:**
- **Student Council Representative, SSBS, Symbiosis International University:** Sports representative of M.Sc. Biotechnology Batch 2020-2022, helped the sports council committee of SIU in planning and organizing the sports events and encouraging the students and the faculty members to participate.
- **Coordinator at the Student Body, AIB, Amity University:** Student record Committee coordinator for Amity Institute of Biotechnology (2018-2019)
- **Sports In charge, AIB, Amity University:** Represented as a captain of Amity Institute of Biotechnology football teams (girls) for the intra-institute sports event, Sangathan 2018.
- **Seminars and Conferences**
- One-day virtual event on “CRISPR: New techniques and Complex models” organized by The CRI30, 2021nal, June 30, 2021
- Two days’ workshop on “SPARC-INDO-US immunology workshop, jointly organized by Indian Institute of Technology [IIT] Ropar, India and The George Washington University, USA, June 12 and 13, 2020

❖ References

Dr. Selvan Ravindran

Associate Professor, Symbiosis
School of Biological Sciences, Pune
Symbiosis International (Deemed
University)
Ph: 020-39116314
Email:
selvan.ravindran@ssbs.edu.in

Dr. Puja Panwar Hazari

Scientist F,
Joint Director, Division of Cyclotron
and Radiopharmaceutical Sciences,
INMAS, DRDO, Delhi,
Ph: 011-23905244
Email: puja.hazari@gmail.com

Dr. Neeru Saini

Sr. Principal Scientist,
CSIR-Institute of Genomics and
Integrative Biology, Delhi
Ph: 91-11-27666156/Ext 136
Email: nsaini@igib.res.in