

Mr. Hardev Singh

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Department of Pharmaceutical Sciences & Technology
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Professional Summary

Dynamic and research-driven Pharmacology professional with an M.S. (Pharm.) in Pharmacology & Toxicology from NIPER–Raebareli (Institute of National Importance) and current role as Assistant Professor of Pharmacology at MRSPTU, Bathinda. Possesses strong expertise in neuropharmacology, neurodegenerative and neuropsychological disorders, alcohol use disorder (AUD), alcoholic liver disease (ALD), and translational research. Highly skilled in preclinical behavioral pharmacology, biochemical and molecular assays (ELISA, Western blot), histology, stereotaxic surgeries, and neuroendocrine evaluations, with proven experience in leading and collaborating on industry-sponsored consultancy projects for preclinical drug development. Published researcher with work accepted in Free Radical Research (Taylor & Francis, 2025), demonstrating commitment to generating impactful scientific knowledge. Adept at integrating cutting-edge research with innovative teaching methodologies, mentoring students, and fostering a research-oriented learning environment. Dedicated to advancing pharmacology through collaborative research, translational approaches, and contribution to novel therapeutic strategies, while preparing the next generation of pharmaceutical scientists.

DEGREE	YEAR	INSTITUTE	UNIVERSITY/BOARD	% CGPA
M.S. (Pharm.) in Pharmacology and Toxicology (Post-Graduation)	2025	National Institute of Pharmaceutical Education and Research (NIPER- Raebareli, UP	National Institute of Pharmaceutical Education and Research (NIPER-Raebareli)	8.94 CGPA
B. Pharmacy (Graduation)	2023	Department of Pharmaceutical Sciences and Technology, Bathinda	Maharaja Ranjit Singh Punjab Technical University, Bathinda	8.60 CGPA.
Diploma (D. Pharmacy)	2019	Guru Teg Bahadur Khalsa College of Pharmacy, Chhapianwali, Malout	Punjab State Board of Technical Education and Industrial Training, Chandigarh	78.33%
XII	2016	Govt. Model Sr. Sec. School Gidderanwali (PB)	Central Board of Secondary Education	48%
X	2014	Govt. Model Sr. Sec. School Gidderanwali (PB)	Central Board of Secondary Education	7.4 CGPA

RESEARCH EXPERIENCE

National Institute of Pharmaceutical Education and Research (NIPER-Raebareli)

Mentor: Prof. (Dr.) Rakesh Kumar Singh, Head of the Department of Pharmacology and Toxicology and Dean of NIPER, Raebareli.

Research Topic: Evaluation of the Effect of Cariprazine in Ethanol-Induced Alcohol Use Disorder (AUD) in Male Wistar Rats.

Designed and executed a 12-week preclinical study to model chronic alcohol exposure, treatment, withdrawal, and relapse using a 2-bottle choice continuous access method with a sucrose-fading paradigm.

- Investigated the neurobehavioral effects of Cariprazine on ethanol-seeking, anxiety-like behavior, and withdrawal symptoms using validated behavioral assays (Spontaneous Locomotor Activity, Light and Dark Box, Rotarod).
- Conducted biochemical assays on liver homogenates (SOD, MDA, ROS, GSH, catalase, nitrite) and plasma biomarkers (AST, ALT, LDH, cortisol) to evaluate hepatic oxidative stress and HPA axis activation.
- Performed histopathological analysis (H&E, Oil Red O staining) for assessing liver architecture and lipid accumulation.
- Demonstrated that Cariprazine significantly attenuates alcohol-induced neurobehavioral and biochemical abnormalities, with effects comparable to Naltrexone.
- The study provides mechanistic insights into Cariprazine's therapeutic potential in AUD by targeting dopaminergic and serotonergic pathways as well as reducing oxidative hepatic damage.
- **Successfully contributed to an industrial consultancy project** involving the preclinical evaluation of 12 test formulations for Alcohol Use Disorder (AUD) and Alcoholic Liver Disease (ALD) in male Wistar rats, with comprehensive behavioral, biochemical, and histological analyses.

❖ Research Interests

- Neuropharmacology & Translational Research
- Alcohol Use Disorder and Alcoholic Liver Disease
- Neurodegenerative Disorders (Alzheimer's, Parkinson's)
- Neuropsychiatric Disorders (Anxiety, Depression)
- Molecular and Biochemical Mechanisms of Addiction
- Drug Discovery & Preclinical Evaluation of Novel Therapeutics

- **Research Publication:**

Betulinic acid protects SH-SY5Y cells exposed to lipopolysaccharide and ferrous sulphate through p38MAPK/NF-κB/GPX4/Nrf2/Keap-1/HO-1 signaling axis, accepted for publication in **Free Radical Research (Taylor & Francis, 2025)**.

SKILLS & TOOLS EXPERTISE

- **Instruments Handled:** Spectrophotometer (Microplate reader), Optovarimex, PACS system, Centrifuge, Tissue Homogenizer, Microscope, Micropipette, Microtome, Cryotome, etc.
 - **In-Vivo studies** - Animal handling of both rats and mice, dosing of animals, **Stereotaxy**.
 - Execution of terminal procedures in in vivo studies, including blood collection via retro-orbital route and organ isolation (brain, liver, etc.).
 - Expertise in behavioral pharmacology and neuropharmacological assessments.
 - Designing and executing preclinical models and Experimental planning for drug screening studies, including dose optimization and treatment evaluation.
 - Data interpretation and documentation.
 - **Histology** of the brain and Liver.
 - **Computer and Software Skills:** GraphPad prism, Any maze, MS office (Word, Excel, PPT), Image J, and Endnote etc.
 - **Clinical Skills:** Proficient in essential clinical skills including bandaging, suturing, administration of injections (IM, IV, SC, intradermal), IV infusions, ECG testing, surgical dressing, prescription interpretation, and blood sample collection.
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TRAININGS, CONFERENCES, AND WORKSHOPS

❖ Professional Training

- **Hospital Training** – Completed clinical pharmacy training from 08/07/2019 to 22/10/2019 at Civil Hospital, Abohar (Punjab).
- **Industrial Training** – Completed 1-month pharmaceutical industry training at Ramom Healthcare Pvt. Ltd., Parwanoo, District Solan (Himachal Pradesh).
- **Summer Research Training** – Participated in Summer Training on Advanced Laboratory Techniques from 6th June to 3rd July 2024 at NIPER-Raebareli, Department of Pharmacology & Toxicology.

❖ **Examinations & Certifications**

- **GPAT 2022** – Qualified
- **NIPER-JEE 2023** – Qualified and secured admission to M.S. (Pharm.) in Pharmacology & Toxicology at NIPER-Raebareli.

❖ **Conferences & Academic Events**

- Participated in the **National Conference on Pharmacovigilance and Clinical Research** (2022) held at Chandigarh College of Pharmacy, Landran (Mohali) in collaboration with APTI, Punjab State Branch (9th–10th May 2022).
- Attended **World Pharmacist Day 2021** celebration at MRSPTU, Bathinda, and secured **3rd Position in the Pharma Quiz Competition** on 21st September 2021.
- Participated in the event organized on **International Day of Immunology by the Department of Biochemistry, AIIMS Bathinda** as a registered delegate.
- Participated in **Workshop-cum-conference on “Pharmacovigilance & medicine safety organized by ADR Monitoring Centre (AMC)” Department of Pharmacology, AIIMS Bathinda, Punjab**, on 18th February 2022.
- **Faculty Development Programme: “Digital Empowerment for Modern Educators”** Santhiram College of Pharmacy, Nandyal (05 Sept 2025)
- **Online Workshop: “Docking, Homology Modeling and Active Site Prediction”** Discovery Boulevard (12–13 July 2025)

LANGUAGES

Punjabi: Native language

Hindi: Native language

English: Good listener and speaker

PERSONAL DETAILS

Date of Birth: 16-10-1998

Father's Name: S. Gurdeep Singh

Gender: Male

Permanent Address: V.P.O Gidderanwali, Tehsil Abohar, Distt. Fazilka, Punjab. Pin code: 152132

Hobbies: Spiritual readings, Singing, Traveling,

DECLARATION

I hereby solemnly affirm that all the details provided above are true to the best of my knowledge.

Date: 15-09-2025

Place: Bathinda

Hardev Singh