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Profile Summary

A highly motivated and detail-oriented M.Pharm graduate with a specialization in Pharmacology and hands-on research experience in neuroscience. Possesses a strong foundation in animal handling, behavioral paradigms, and the investigation of molecular pathways in rodent models as well as zebrafish model.

Education

Master of Pharmacy (Pharmacology)

Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab, India
2023 – 2025

Bachelor of Pharmacy

Government Pharmacy College-Seraj, Mandi, Himachal Pradesh, India, 175035
2019 – 2023
CGPA: 8.38/10

Research Experience

➤ **M.Pharm Research Project**

Title: Pharmacokinetic and *in vivo* efficacy evaluation of IHBT-PGD-1 in experimental animal model of obesity linked Alzheimer's disease.

- **Pharmacokinetic Profiling:** Conducted non-compartmental analysis of IHBT-PGD-1 using LC-MS-PDA.
- **Animal Model Development:** Successfully established a dual-pathology rat model of Alzheimer's disease by combining **intrahippocampal stereotaxic infusion of amyloid- β peptide** with a **high-fat diet regimen** over 2 months to mimic metabolic and neurodegenerative features.
- **Behavioral Phenotyping:** Assessed cognitive deficits and motor coordination using a battery of validated tests including **Morris Water Maze** (spatial learning and memory), **Novel Object Recognition Test (NORT)**, **Y-Maze** (working memory), and **Open Field Test** (locomotor activity and anxiety-like behavior).
- **Scientific Documentation & Analysis:** Maintained meticulous experimental records and performed statistical analysis using **one-way ANOVA** and post hoc comparisons to validate behavioral outcomes.

➤ **Internship**

Project: Pharmacokinetic and *in vivo* efficacy evaluation of IHBT-PGD-1 in experimental animal model of obesity linked Alzheimer's disease

Duration: 6 months

Institute: A Constituent Laboratory of the Council of Scientific and Industrial Research-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur, Himachal Pradesh, India, 176061

Experimental Animal Handling and Behavioural Research

- Proficiently handled and housed **rats, mice, and zebrafish**, ensuring compliance with institutional ethical guidelines and animal welfare standards.
- Conducted **behavioural paradigms** to assess cognitive function, anxiety-like behaviours, and locomotor activity in rodents and zebrafish.
- Skilled in **zebrafish breeding, handling, behavioural analysis**, and dissection for histological and biochemical studies.
- Gained hands-on experience in **surgical procedures**, including **sepsis induction in mice** and **stereotaxic surgery in rats** for targeted brain interventions.
- Performed **dissection of rat, mouse, and zebrafish brain tissue**, followed by sample preparation for downstream analysis.

Molecular and Histological Techniques

- Exposed to a range of laboratory techniques including **NeuN immunostaining**, **Haematoxylin & Eosin (H&E) staining**, and **Oil Red O staining** for lipid accumulation.
- Assisted in the **collection, processing, and analysis of brain tissue** for histological and biochemical evaluation.
- Maintained meticulous scientific documentation of experimental protocols, observations, and results.

Pharmacokinetics and Data Analysis

- Contributed to **pharmacokinetic profiling** using **LC-MS-PDA**, including sample preparation, data acquisition, and interpretation.
- Participated in **data analysis**, visualization, and preparation of findings for internal discussions and scientific reporting.

Technical & Laboratory Skills

Animal Handling

- Rodents: Mice and Rats
- Zebrafish: Larval and adult stages, including acclimatization, maintenance, and experimental handling

Behavioural Testing

- Rodents: Morris Water Maze, Elevated Plus Maze, Open Field Test, Rota Rod, Object Recognition Test, Narrow Beam Walk, Y-Maze Test
- Zebrafish: Novel Tank Diving Test, Light/Dark Preference Test, Social Preference Assay, T-Maze, and Locomotor Activity Tracking

Surgical Techniques

Imaging & Behavioural Assays (Zebrafish)

Workshops & Conferences

- Attended Alzheimer's Association International Conference.
- Completed CME-accredited webinar training (certificate by CME University / Postgraduate Institute for Medicine, 2024–25).
- Participated in E-poster/SKT/Debate Competition, ADR Monitoring Centre, Department of Pharmacology, AIIMS Bathinda (Sep 2024).
- National Workshop on “Navigating Network Pharmacology,” Amar Shaheed Baba Ajit Singh Jujhar Singh Memorial College of Pharmacy.
