

KAUSTUBH JOSHI

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EDUCATION

University of Maryland, Baltimore

Aug 2023 - Dec 2024

Master of Science in Pharmaceutical Sciences

Relevant Coursework: Bioanalytical and Pharmacological Methods, Principles of Drug Discovery, Principles of Drug Development, Technical Writing, Experimental Success, Spectrometric Methods, Process Analytical Technologies

D Y Patil University, Pune, India

July 2019 - June 2023

Bachelor of Pharmacy

Relevant Coursework: Medicinal Chemistry, Pharmaceutics, Pharmacology, Molecular Biology, Instrumental Analysis, Pathophysiology, Novel Drug Delivery Systems, Pharmaceutical Biotechnology, Organic Chemistry

TECHNICAL SKILLS

Lab: Mammalian Cell Culture, Automated Liquid Handlers (Tecan), IHC, LC-MS/MS (QQQ and QTOF), SPE, GC-MS, UV-Vis, FTIR, ELISA, Western Blot, DNA Isolation, BCA, ADME Assays, Nanoparticle (LNP) Synthesis, Nanodrop, MALDI-TOF, SEM, TEM, Assay Development, Confocal Microscopy, In-Vitro and Ex-Vivo Studies

Software: Tracefinder, Xcalibur, Chromeleon, ChemDraw, PyMOL, SciFinder, BioRender, GraphPad Prism, TIBCO Spotfire, Minitab, ADMET Predictor, Tecan Fluent Control

WORK EXPERIENCE

GlaxoSmithKline (GSK)

June 2024 - Present

Scientific Student Researcher (Discovery DMPK In-Vitro)

- Developing a novel transporter-mediated hepatic uptake assay using the oil spin method to accurately predict in vivo behavior from in vitro data
- Supporting GSK's efforts in screening investigational compounds using bidirectional Caco-2, MDCK-MDR1 and BCRP assays to assess membrane permeability and efflux
- Performing metabolic stability assays for determining the intrinsic clearance of test compounds in cryopreserved suspension and plateable dog, rat, mouse, monkey, minipig, and human hepatocytes
- Culturing MDCK-MDR1 and BCRP-MDCK cells to predict CNS penetration, preparing buffers and media for determining apical and basolateral uptake for evaluating the role of P-gp and other transporters in NCEs
- Contributing to Tier-1 and Standard in-vitro early drug discovery studies using automated liquid handlers (Tecan), including hepatocyte clearance and uptake, microsomal clearance and binding and MDCK permeability
- Designing and tailoring scripts on Fluent Control as per the number of studies and plates, maintaining electronic lab notebooks (ELNs) and delivering in-vitro results with a focus on high quality and rapid turnaround
- Characterizing the non-specific binding (unbound fraction) of GSK test compounds in human and rat microsomes using a rapid equilibrium dialysis method and analyzing them using TIBCO Spotfire

University of Maryland School of Pharmacy

Oct 2023 - June 2024

Research Intern (Jace Jones Lab, Mass Spectrometry Center)

- Optimized methods for analyzing oligonucleotides using buffer exchange, MALDI-TOF, LC-MS, and nanodrop
- Characterized lipid composition of kidney samples using solid phase extraction and LC-MS
- Performed lipid extraction from human plasma utilizing solid phase extraction techniques which involves centrifugation, thermomixer for incubation, and using continuous nitrogen gas stream for organic layer drying
- Processed lipidomic analysis data from MS and UPLC systems using Tracefinder, Xcalibur and Excel

Defence Research and Development Organisation, Ministry of Defence, New Delhi

Aug 2022 - Oct 2022

Research Assistant Intern (DIPAS, Department of Occupational Health and Safety)

- Conducted research on the effects of radio-wave exposure on molecular markers pertaining to inflammation, heat shock proteins, metabolism, and cell survival and apoptosis in Sprague Dawley rats
- Euthanized rats, performed perfusions, to collect blood, brain, and skin for ex vivo studies
- Prepared tissue homogenates using ultrasonication and homogenization for estimation of biochemical markers, resolved and detected the extracted protein using SDS-PAGE and Western Blotting
- Estimated endogenous total ROS, LPO, AOPP, SOD, and catalase levels using Lowry's method. Quantified metabolic regulatory enzymes like HK, LDH, CS, G6PD
- Employed different ELISAs for the quantification of TNF- α , IL-1 β , NOS2/iNOS, COX-2, NF- κ B, 4-HNE adduct

RELEVANT PROJECTS

- Simultaneous evaluation of metabolic and transporter driven clearances in hepatocytes **June 2024**
- Performance assessment to ensure precise liquid delivery during high-throughput screening **June 2024**
- High-resolution analysis of oligonucleotide therapeutics, analysis of lipids **Nov 2023**
- Effects of radiofrequency radiation (S-Band) on experimental animals **Aug 2022**
- Screening of neonatal diseases by HPLC and GC-MS **Feb 2022**