KAUSTUBH JOSHI

kaustubhjoshi@umaryland.edu | 443-618-3302 | LinkedIn

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), Upper Providence, PA **June 2024 - Present**
Scientific Student Researcher (Discovery DMPK In-Vitro)
- Developing a novel transporter-mediated hepatic uptake assay using suspension and plateable hepatocytes to accurately predict in vivo behavior from in vitro data
- Supporting GSK's efforts in screening investigational compounds using bidirectional 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 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, Baltimore, MD **Oct 2023 - June 2024**
Research Intern (Jace Jones Lab)
- Assisted and executed multi-step solid phase extraction (SPE) for lipid isolation and oligonucleotide preparation
- Observed and compared Hydrophilic Interaction Liquid Chromatography (HILIC) in negative and positive ionization modes with RPLC to assess optimal resolution in lipid analysis
- Characterized diastereomeric separation of phosphorothioated oligonucleotides utilizing Ion Pair Reverse Phase (IPRP), Metal Ion Complexation Chromatography (MICC), and Reverse Phase Strong Anion Exchange (RP-SAX)
- Analyzed purified products using Matrix-Assisted Laser Desorption/Ionization Time-of-Flight (MALDI-TOF) MS

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 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-1β, NOS2/iNOS, COX-2, NF-κB, 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**