

**2024-2025 Available MSc Thesis Project from the Brouwer-Tiley Lab
UNC Eshelman School of Pharmacy**

Use of Endogenous Transporter Substrate Coproporphyrin-I to Assess Transporter Drug Interactions (tDIs) in Vitro.

Description: The aim of this study is to optimize and validate the use of endogenous transporter substrate to assess transporter drug interactions (tDI) in vitro. Endogenous transporter substrate levels are needed to circumvent the need to add a non-selective inhibitor to measure tDIs. We previously detected Coproporphyrin-I (i.e., substrate of OATP1B1, OATP1B3, MRP2, and MRP3) by adding 5-aminolevulinic acid (ALA) for 24 hours to cultured Huh-7 cells. We will use this cell model to validate if OATPs and MRP2-mediated drug interactions can be measured by adding known OATP and MRP2 inhibitors.

Methods: The student will learn cell culture methods, transporter studies (e.g., uptake and efflux studies, B-Clear), sample preparation for LC-MS/MS and LC-MS/MS data analysis.

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