Mikell Paige, PhD

Associate Professor, Department of Chemistry and Biochemistry

Education

PhD, Chemistry, University of Virginia

Key Interests

Drug Discovery | Pulmonary Inflammation | Fibrosis | Traumatic Brain Injury | Medicinal Chemistry | Organic Synthesis | Enzymology | Protein Chemistry

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SELECT PUBLICATIONS

- M. Paige *et al.*, Role of leukotriene A4 hydrolase aminopeptidase in the pathogenesis of emphysema. *J Immunol.* 192, 5059-5068 (2014).
- H.R. Fernandez *et al.*, The mitochondrial citrate carrier, SLC25A1, drives stemness and therapy resistance in non-small cell lung cancer. *Cell Death Diff.* 25, 1239-1258 (2018).
- N. Farhan *et al.*, Ultrapressure liquid chromatography-tandem mass spectrometry assay using atmospheric pressure photoionization (UPLC-APPI-MS/MS) for quantification of 4-methoxydiphenylmethane in pharmacokinetic evaluation. *J Pharm Biomed Anal.* 128, 46-52 (2016).

Research Focus

The focus of our lab is drug discovery. We utilize medicinal chemistry strategies for the design and synthesis of small molecule modulators of dysfunctional enzymes. We utilize structural biology and computational chemistry in conjunction with kinetic assays to determine enzyme mechanisms. Our capabilities also include the design, synthesis, and characterization of peptidomimetic inhibitors of protein-protein interactions.

Targets we are currently pursuing in our lab are mainly focused on diseases of the lung to include chronic obstructive pulmonary disease (COPD) and idiopathic pulmonary fibrosis (IPF). We are also developing projects targeting viral infections, gram-negative bacterial infections, and traumatic brain injury (TBI).

Current Projects

- Design and synthesis of small molecule modulators of the leukotriene A4 hydrolase enzyme for pulmonary inflammation
- Inhibiting protein-protein interactions with modified natural product macrocycles as a strategy for targeting idiopathic pulmonary fibrosis
- Determining the kinetic mechanisms for small molecule activators of enzymes
- Iterative approaches to the synthesis of new peptidomimetic scaffolds