

Faculty Portfolio

Dr. Mohammed H. AL Mughram

Assistant Professor

Pharmaceutical Chemistry Department (Medicinal Chemistry)

College of Pharmacy

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Education:

Year of Graduation	Qualifications (Specializations if any)	University/College, Country
2022	Doctor of Philosophy (Medicinal Chemistry)	Virginia Commonwealth University VA, USA
2018	Master of Biological and Medicinal Chemistry	University of Toledo OH, USA
2013	Bachelor of Pharmacy	King Khalid University Abha, Saudi Arabia

Professional experience:

Year	Positions	University/College, Country
March 2023-present	Assistant Professor Pharmaceutical Chemistry Department	College of Pharmacy, King Khalid University, Abha, Saudi Arabia
August 2018-March 2023	Lecturer, Department of Pharmaceutical Chemistry	College of Pharmacy, King Khalid University, Abha, Saudi Arabia
2014 –2018	Teaching Assistant, Department of Pharmaceutical Chemistry	College of Pharmacy, King Khalid University, Abha, Saudi Arabia

Academic/research awards:

Year/Duration of Award	Name of the Award	University/Company, Country
2022	J. Doyle Smith Award Finalist – Department of Medicinal Chemistry, College of Pharmacy, VCU, USA	Virginia Commonwealth University VA, USA
2019	Best Graduate student oral presentation – Department of Medicinal Chemistry, College of Pharmacy, VCU, USA	Virginia Commonwealth University VA, USA
2013	Second-Class Honors – College of Pharmacy, King Khalid University, KSA	College of Pharmacy King Khalid University Saudi Arabia

Research interests:

- Drug Discovery and Development
- Protein-Protein Interactions
- Protein Structure and Function
- Molecular Modeling
- Molecular Docking and Dynamics Simulation
- Computational Chemistry

Teaching experience:

- Working as Assistant Professor in the Department of Pharmaceutical Chemistry, College of Pharmacy, King Khalid University, Abha from 07/03/2023) to till date.
- Worked as a teaching assistant (graduate level) at Virginia Commonwealth University (College of Pharmacy)- Advanced Molecular Modeling (MEDC670) during the academic years 2021 and 2022.

Publications:

- 1- Ghatge M.S., **AL Mughram, M.H.**, Omar A.M., Safo M.K., 2021. Inborn errors in the vitamin B6 salvage enzymes associated with neonatal epileptic encephalopathy and other pathologies. *Biochimie*. 183:18-29.
- 2- **AL Mughram, M.H.**, Catalano, C., Bowry, J.P., Safo, M.K., Scarsdale, J.N., Kellogg, G.E., 2021. 3D interaction homology: Hydrophobic analyses of the “ π -cation” and “ π - π ” interaction motifs in phenylalanine, tyrosine, and tryptophan residues. *J. Chem. Inf. Model*. 61, 2937-2956.
- 3- Catalano, C., **AL Mughram, M.H.**, Guo, Y., Kellogg, G.E., 2021. 3D interaction homology: Hydrophobic interaction environments of serine and cysteine are strikingly different and their roles adapt in membrane proteins. *Curr. Res. Struct. Biol*. 3, 239-256.
- 4- **AL Mughram, M.H.**, Herrington, N.B., Catalano, C., Kellogg, G.E., 2021. Systematized analysis of secondary structure dependence of key structural features of residues in soluble and membrane-bound proteins, *J. Struct. Biol.*: X. 100055.
- 5- **AL Mughram, M.H.**, Catalano, C., Safo, M.K., Kellogg, G.E., 2021. 3D hydrophobic interaction maps as a novel motif for protein structure description: A case study of phenylalanine, tyrosine, and tryptophan residues. *Protein Sci*. 30, 49-49.
- 6- **AL Mughram, M.H.**, Ghatge, M.S., Kellogg, G.E., Safo, M.K., 2023. Elucidating the interaction between pyridoxine 5'-phosphate oxidase and dopa decarboxylase: Activation of B6-dependent enzyme. *Int. J. Mol. Sci*. 24, 642.
- 7- **AL Mughram, M.H.**, Catalano, C., Herrington, N.B., Safo, M.K., Kellogg, G.E., 2023. 3D interaction homology: The hydrophobic residues alanine, isoleucine, leucine, proline and valine play different structural roles in soluble and membrane proteins. *Front. Mol. Biosci.* Front. Mol. Biosci. 10:1116868.
- 8- Donkor A.K., Pagare P.P., **AL Mughram M.H.**, Safo M.K., 2023. X-ray crystallography and sickle cell disease drug discovery—a tribute to Donald Abraham. *Front. Mol. Biosci.* 10:1136970.