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Dr. Abdelbasset Farahat is an Assistant Professor of Pharmaceutical and Medicinal Chemistry in the Department of Pharmaceutical and Biomedical Sciences, Master of Pharmaceutical Sciences at California Northstate University. In 2002, Dr. Farahat received a Bachelor of Pharmacy from Mansoura University Egypt, and then in 2006, he received a Master of Pharmaceutical Sciences from Mansoura University Egypt. In 2010 Dr. Farahat received his Ph.D. in Medicinal Chemistry after doing research at Georgia State University, Atlanta, GA, USA. His Ph.D. research focused on the design and synthesis of dicationic compounds to be used as antimalarial and antitrypanosomal agents. In 2011, Dr. Farahat joined the Faculty of Pharmacy, Mansoura University as Assistant Professor. In 2012 Dr. Farahat joined Boykin's laboratory at Georgia State University, Atlanta, GA. As a Postdoctoral researcher, then research scientist and team leader. In 2018 Dr. Farahat joined Kennesaw State University as Assistant Professor of Medicinal Chemistry. In 2018 Dr. Farahat was awarded The Encouragement State Prize in Medical Sciences from the Academy of Scientific Research and Technology, Egypt. Dr. Farahat has published **67** publications in high impact peer-viewed journals and is an inventor of **three** Patents. (https://scholar.google.com/citations?hl=en&user=GYCTlNUAAAAJ&view_op=list_works&sortby=pubdate)

Research Interests: Dr. Farahat's research focuses on medicinal chemistry and synthetic organic chemistry projects. My focus is being primarily on targeting the DNA minor-groove as an approach for antiparasitic drug discovery. This work is being mostly directed towards the discovery of antimalarial, antitrypanosomal, antileishmanial, antinaeglerial and antiacanthamoebal drugs. More recently, my research has focused on developing heterocyclic dications for DNA minor groove binding which induce topological effects, bind into either the major or minor grooves, in specific parasitic sequences to generate a new mode of therapeutic activity. This work has led to new investigations that focus on the development of modular base pair recognition units for a variety of mixed DNA sequences. My previous work has yielded several cationic modules that recognize AT sequences quite well and are well known to enter cells and thus can potentially be developed for drugs against many diseases. My recent work has identified two G-recognition modules and we are working on expanding the number of readily accessible G- recognition units such that modules may be combined to recognize a broad array of DNA mixed base pair sequences.

A long-term goal of this proposed research is to develop an entirely new class of anticancer drugs that can target DNA-protein complexes, such as transcription factors that have previously been considered "undruggable" targets. Recently I was working on the design and synthesis of new dicationic molecules to target Naegleria Fowleri which is a pathogenic free-living amoeba that causes the acute fatal disease known as primary amoebic meningoencephalitis (PAM). The anti-PAM effort began with lead compounds with IC50 values between 1 and 2 micromolar and through optimization efforts have produced several compounds with IC50 values less than 30 nM. Six of these highly active compounds have been made in gram quantities and are currently being evaluated in an in vivo animal model for PAM.

Publications. (most recent 20 out of 67)

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