

Research Relevance and Potential Impact

The research presented in this dissertation targets at developing novel techniques for the detection of highly complex mixtures of new designer drugs. This area of research is of importance as it has implications in the forensic field and the pharmaceutical industry. The main research questions being addressed in this dissertation is the development of methods that can detect and quantitate chiral molecules, as these types of drugs, synthetic cathionics, are very challenging to separate by most methods. In fact, most techniques cannot tell apart these isomeric compounds. The proposed research aims at applying new techniques in chromatography and mass spectrometry for the detection of this class of illegal drugs. The methodology implemented in this dissertation used two approaches to achieve this goal, namely, an indirect and direct method, both that were evaluated and compared.

The dissertation does present several “firsts” in terms of being able to analyze up to 20 compounds simultaneously and with chiral resolution. The extent of the data acquired during this work also shows a high technical level and ability from Dr. Huzaim: performing HPLC in a reproducible manner requires dedication, perseverance and attention to many details. In addition, Dr. Huzaim developed and tested these methodologies in real biological samples, which is not easy and often messy and frustrating.

The number of scientific reports published in this area of research is increasing at a constant pace. Developing new analytical methodologies for detection and quantitation of these illicit drugs will facilitate the work forensic scientists and advance the state of knowledge in the field. Dr. Huzaim thesis has resulted in two published research papers in peer-reviewed analytical journals and another two articles are under review.

Relevant Publications

- Alremeithi, Rashed H., Meetani Mohammed A., Mousa Muath K, Saleh Na'il, Graham John, «Determination of p-aminohippuric acid with β -cyclodextrin sensitized fluorescence spectrometry.» RSC Advances 6.115 (2016): 114296114303-.
- Alremeithi, Rashed H., Meetani Mohammed A., and Khalil Saif A., «A validated gas chromatography mass spectrometry method for simultaneous determination of cathinone related drug enantiomers in urine and plasma.» RSC Advances 6.84 (2016): 8057680584-.

Career Aspirations

Good thing to start with is to enhance my professional skills to be professional and advance in my job. My plan is to become an expert in my field which will facilitate presenting my country honorably around the world. One important point should be put on mind is to build a valued knowledge continuously through self-education by reading books and articles, participating in researches, attending conferences and many other things.

Another important target that I want to achieve is to participate in leadership process aiming to couple between knowledge that I got from UAEU and the leadership skills that I learned from Dubai Police.