Job description

The Organic chemistry group within the Department of Chemistry (University of the Free State, South Africa) is looking for a post-doctoral candidate interested in organic synthesis and natural product chemistry.

Our research is mainly based on natural phytomedicines and development of phytomedicines. We have collaborations with the University of Vienna and Basel on the development of anti-psychotic phytomedicines. We are also involved in the investigation of the sulfitation reactions of procyanidin dimers, trimers and tetramers based on catechin, epicatechin, gallocatechin and epigallocatechin flavan-3-ols.

We will soon be implementing HPLC-based profiling using a larval zebrafish seizure model induced by pentylenetetrazol (PTZ), a pro-convulsant $GABA_A$ receptor antagonist. The assay was validated with the aid of compounds with known GABAergic activity (diazepam, valerenic acid, magnolol and piperine, and additional $GABA_A$ receptor agonistic compounds that were previously identified with the aid of the *Xenopus* oocyte assay). We would like to establish a toxicity and activity testing centre for South African botanicals based on traditional knowledge which show the potential to be developed into possible lead compounds against diseases of the central nervous system (CNS) such as epilepsy, mood disorder, anxiety and insomnia.

Desired skills and experience

We are looking for a highly motivated and enthusiastic candidate with a background in organic chemistry, natural product chemistry or related fields with an interest in isolation and structure elucidation of natural/chemical compounds. Previous experience in synthetic chemistry, natural products and phytochemistry is desired. The candidate must be highly skilled in NMR, HPLC/MS/LCMS techniques with ample experience and a recognizable supervision track record with good communication in English (spoken and written). The candidate will be in charge of the HPLC equipment and should be available to provide training and support to post-graduate students regarding HPLC method development.

About the employer

The Organic chemistry group at the University of the Free State is well equipped with the following NMR equipment: 300 MHz NMR with a 5 mm broad-band probe, 300 MHz NMR with a 5 mm ^{1}H and ^{13}C dual probe, 400 MHz NMR with a 5 mm broad-band probe, 10 mm broad-band probe and a 4 mm solid-state probe, 600 MHz NMR with a 5 mm ^{1}H & ^{13}C dual probe, a 5 mm broad-band probe and a 1.7 mm nano probe. Our laboratory has highly specialized

equipment ranging from HPLC, MS, LCMS, countercurrent chromatography, GCMS etc. The research group is housed in the Department of Chemistry and offers close working relationships with other research groups in Physics, Microbiology, Biochemistry and Genetics.

How do you want candidates to apply?

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Which disciplines does your ideal candidate come from?

Chemistry – organic synthesis, natural product chemistry, phytochemistry, green chemistry