



Metabolomics Webinar Series
1H-NMR metabolite profiling - Dr Shayne Mason
09 July 2020 at 14:00

The African Centre for Gene Technologies (ACGT) and Metabolomics South Africa (MSA) and North West University (NWU) hosted a Metabolomics workshop in 2019 that included NMR sample preparation and analysis as one of the topics. One of the issues that stood out at this workshop was "how to interpret the spectra to determine metabolites?" This webinar is aimed at answering that question and more.

Overview

The major challenge in metabolomics is to identify the metabolites in a highly complex mixture of compounds that produce a forest of peaks in a NMR spectrum. This metabolite identification process, called metabolite profiling, involves fitting the mixture spectrum to a set of individual pure reference spectra obtained from known pure compounds. If done correctly, the fitting process yields not only the identity of the metabolites, but also the accurate concentration of those metabolites. Therefore, the end result of a successful metabolite profiling study is a table of metabolite names and their absolute or relative concentrations.

This webinar will provide a practical stepwise guide describing how to perform 1H-NMR metabolite profiling on multiple complex biological samples. This protocol is then applied to an example of a typical untargeted 1H-NMR metabolomics study. The example that we will be using is one that was done on 300 cerebrospinal fluid samples, after various statistical analyses had been applied to identify the most important discriminating variables.

Speaker

Dr Shayne Mason is a research leader specializing in TB meningitis and biofluid analysis at the [Laboratory for Infectious Diseases in Human Metabolomics](#) at the NWU Potchefstroom campus. Dr Mason completed not one, but two BSc degrees; one in Biochemistry and Microbiology and the other in Statistics and Applied Mathematics. He completed his PhD in 2016 as a joint degree between NWU and VU in Amsterdam in the field of nuclear magnetic resonance (NMR) metabolomics. Dr Mason has published over 20 publications in the field and assisted and/or supervised numerous postgraduate students.

Audience

This webinar can be attended by all who are interested in the subject and discussion points.

Registration

You are invited to join this webinar on Thursday, 09 July 2020, at 14:00. Please use this [link](#) to register.

Additional information

For more information and suggestions, please contact Mr Molati Nonyane at molati.nonyane@up.ac.za.