

AN HPLC-MS METABONOMICS APPROACH TO THE STUDY OF RAT URINE AFTER DOSING WITH HYDRAZINE

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Metabonomics is a rapidly growing area of scientific research primarily utilising proton NMR spectroscopy as the analytical method of choice. It involves the study of time-related metabolic profile changes that can be the result of exposure to a toxin or drug, to environmental effects or the onset of disease. The metabonomics approach is now being widely investigated by large pharmaceutical companies in the area of drug discovery and development where an early indication of toxicity is of paramount importance.

Hydrazine is a commonly used model hepatotoxin in animal studies and here we will present data from the analysis of rat urine predose and daily over a 7day period after oral hydrazine administration. The exact mass spectra were acquired on a Micromass Q-ToF micro mass spectrometer in electrospray ionisation mode coupled to liquid chromatography. Principal component analysis (PCA) of the data showed clear separation between the control and dosed samples and it was possible to determine which components were responsible for the separation.

We will show that this technique is a viable alternative to NMR spectroscopy for toxicology studies in drug discovery and development.
