Metabolic phenotyping technologies and an overview of their applications



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NMR spectroscopy and chromatography-MS analyses of biofluids and tissues for metabolic profiling or phenoyping (sometimes also called metabolomics or metabonomics) has been applied to further the understanding of physiological effects, for assessing drug toxicity, and for disease diagnosis and prognosis of future treatment and outcome, including investigation of interactions between the host and its symbiotic gut microbial system.

This talk will provide a brief explanation of the main metabolic phenotyping technologies, including the use of multivariate statistics (chemometrics) for sample classification and for biomarker identification. Some recent examples of clinical metabonomics will be shown. New developments in the development of phenotyping centers will also be covered. These have the aims of allowing evaluation of metabolic phenotyping of hospital patients to achieve stratified or more personalised treatment and also investigation of large population epidemiological sample cohorts for disease risk assessment.