



CURRENT TRENDS AND INNOVATIONS IN BIO-ANALYTICAL TECHNIQUES OF METABOLOMICS

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ABSTRACT: The advancement of Omics technology has vigorously promoted the development of life science; during which metabolomics emerges as a powerful tool that has a promising future in scientific research and clinical practice. As terminal products of complex biochemical network, endogenous low molecular weight metabolites contain rich information about the physiological status of an individual or group of people. Also it has more practical significance that we know “what happened” instead of “what might happen” to some degree. Rapid and accurate screening of large scale of metabolites is beyond imagine in the past; however, benefits from high throughput technical means, the overall disturbance of metabolites induced by environmental stimulus or treatments can be well analyzed. After appropriate bioinformatics analysis, clinically relevant biomarkers of a disease can be found and an accurate and dynamic picture of metabolic disturbance that contribute to a phenotype of a certain organism can be constructed. Biomarkers can also reveal the general metabolic condition by pathways that correlate with disease progression, or even with the risk of certain diseases. Thus, as an indispensable part in the framework of system biology, metabolomics has been widely used but not limited to the following fields like medical science, pharmacy, botany and microbiology. Here in this article, we focus on metabolomics` mainstream research content and technical innovations such as determination methods for biologically active compounds; and pay more attention on the future trends and various possibilities for metabolomics study.

KEY WORDS: Omics Technology, Bio-analytical Techniques, Biomarkers.

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