

iTRAQ, a New Prospect of Toxicogenomics

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ABSTRACT Toxicogenomics is a high throughput molecular profiling technologies, it is the study of the structure and function of the genome as it responds to adverse xenobiotic exposure. Toxicoproteomics is a very young branch of toxicogenomics and it contains several advanced techniques which open a new way of toxicology research. iTRAQ or Isobaric Tag for Relative and Absolute Quantitation is an quantitative and advantageous method of toxicogenomics. iTRAQ contains a set of eight isobaric reagents namely iTRAQ 114- iTRAQ 121 and this reagents contains three group such as reporter group, balance group and peptide group. iTRAQ analysis rapidly used in different types of cancer therapy and also measured global protein content from malignant and non-malignant tissues. In this technique 8 labels helps for multiplexing experiments and post-translational modifications can also be analyzed. iTRAQ contains very few disadvantages but the major goal of iTRAQ is to identify new biomarkers and signatures of toxicity for classifying toxicants for health risk and for observing toxicity.