

“Metabolomics”- A comprehensive tool for drug discovery and development

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Biology is in the midst of intellectual and experimental sea change. Essentially the discipline is moving from being a largely data poor science to a data rich science. Since recent years the work on biological and metabolic network has been increasing due to the new biological discoveries and essential metabolites. Metabolomics being a burgeoning field, which produces voluminous data that, like other ‘omics’ data, should be seen as a resource that contributes specifically to the former half of an iterative cycle of hypothesis-generating and hypothesis- testing phases. Metabolomics is now one of the major fields of omics which play a key role during drug discovery. Efficient identification of drug targets is one of major challenges for drug discovery and drug development. Traditional approaches to drug target identification include literature search-based target prioritization and *in vitro* binding assays which are both time-consuming and labor intensive. Computational integration of different knowledge sources is a more effective alternative. Wealth of omics data generated from genomics, proteomics and metabolomics techniques changes the way researchers view drug targets and provides unprecedented opportunities for drug target identification. This reviews will provide a clear concept about the current status and future role of “metabolomics ” as a tool in the drug development process to reduce the safety related attrition rates and bridge the gaps between preclinical and clinical, and clinical and market. It was also suggested that the ability to diagnose the early onset of disease, rapidly, non-invasively and unequivocally has multiple benefits. These include the early intervention of therapeutic strategies leading to a reduction in morbidity and mortality, and the releasing of economic resources within overburdened health care systems. Some of the routine clinical tests currently in use are known to be unsuitable or unreliable. In addition, these often rely on single disease markers which are inappropriate when multiple factors are involved. Many diseases are a result of metabolic disorders, therefore it is logical to measure metabolism directly. One of the strategies employed by the emergent science of metabolomics is metabolic -fingerprinting; which involves rapid, high-throughput global analysis to discriminate between samples of different biological status or origin .This reviews also focus on a selective number of recent studies metabolomics gives a best contribution into the novel technologies for monitoring disease development, drug metabolism, and chemical toxicology.

Biography

Mr. Raju Dash is a student of Bachelor of pharmacy (B. Pharm), in the Department of Pharmacy of BGC Trust University Bangladesh, from January 2010 to till the date and will complete B. Pharm at December 2013. Mr. Raju has published more than 5 research and review papers in reputed International and national Journal. He participated in many seminars and conferences in home to present his research activities. His research work based on Phytochemistry, Pharmacology, Molecular biology, Infectious diseases and Bioinformatics. He is a life member of Association of Pharmacy Professionals (APP), India. He is interested in Clinical Research, Nano-technology, Molecular medicine and Pharmaceutical Bioinformatics.

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Smart bodies: Future of bio-medical application

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Smart Bodies are nanodevices that will be used for the purpose of maintaining and protecting the human body against pathogens. Nano is one billionth of one. Nanotechnology is the technology in which the operations are performed on nanometrics. It is the application of different technologies primarily interested in the reduction of size. The credential part of this paper gives the theoretical application of Smart Bodies in the treatment of AIDS. There is no technology for the complete treatment of AIDS. Some of the drugs of specific composition are given to the patients depending on the intensity of the disease. The drugs using nowadays are able to increase the lifetime to a few years only. To make the treatment more specific, we may use the Smart Bodies that have nanosensors to sense the AIDS infected WBC's. In this we are using Smart Bodies to get back the WBC's from the HIV infected WBC's. By doing so, constant levels of WBC's are maintained in the blood stream. Thus the AIDS patient may provided with the immune system so that he can defend himself from diseases. In this paper only a theoretical analysis is given and all the information provided are specifically organized by us .In India more than 50 lakhs of people are infected by this dreaded disease and it constitutes 10% of the total infected. We are doing research on this paper and we hope that this theoretical approach can be made practical in the near future, so that the killer disease AIDS could also be made in control on the hands of Human with the emerging new technology like Smart Bodies which has a Bio-medical Application.

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