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Assessment of serum based molecular marker creditworthy for early diagnosed type 2 Diabetes

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The most important purpose in diabetes diagnosis is its initial detection and treatment, in order to forbid the frequency and development of diabetes specific complications. Proteomic technologies play an important role in drug discovery, diagnostics and molecular medicine because of the link between genes, proteins and disease. New generation diagnostic platforms, like commercially available kits have enabled to measure accurate blood glucose level that predict diabetic condition, helping to define diagnosis and the most appropriate therapies. However, hematological evaluation of specimens obtained from blood of the patients is the gold standard of diagnosis. To demonstrate the biomarkers associated with early diagnosed type 2 diabetes, subjects are carefully selected by measuring the blood glucose HbA1C level at fasting period. Samples from the subjects are ultra-centrifuged to winnow out the large abundant protein like Globulin and Albumin. Low abundant serum proteins are then separated through chromatographic fractional analysis with 2D liquid chromatography based on charge and hydrophobicity. Ultimately for the characterization of molecular marker mass spectroscopic analysis are done. This analysis provides for measurement of the peptide fragment masses generated by trypsin digestion of the protein where the mass resolution is a measure of a spectrometer's capability to produce separate signals of ions of similar mass. Finally, having obtained the molecular weight, pI, and peptide fingerprints of the biomarkers of interest, identification are accomplished throughout the peptident tool database.

Biography

Md. Mahmodul Islam has completed his Bachelor in Pharmacy (B.Pharm) from Noakhali Science and Technology University, Bangladesh at the year 2012. Now he is enrolled at the same institute for Masters in Clinical Pharmacy and Pharmacology. He is currently focusing on molecular signatures responsible for early diagnosed type 2 diabetes and phenotypic and genotypic analysis of CYP2D6 in Bangladeshi population. He has 1 book and 1 international conference paper based on phytochemical evaluation of medicinal plants. He is interested in proteomics, bioinformatics and pharmacogenomics.

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