PROTEOMICS FOR ELUCIDATING PROTEIN FUNCTION, REGULATORY NETWORKS AND IMPROVING HUMAN HEALTH

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Although the sequencing of entire genomes has provided significant information, major challenges ahead are the identification of functions of the gene products and the use of this information to improve human health. We have been using protein microarrays to probe the biochemical activities of proteins and their regulation as well as understand human disease. Yeast proteome chip have been developed for identification of binding activities of proteins, small molecules and nucleic acids. They have also been used to probe protein phosphorylation and glycosylation. Human and coronavirus protein chips have been used to interogate human and viral diseases. These studies have been new insights in protein function, regulatory networks and human disease.