

Proteomics in alcohol research

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The proteome is the complete set of proteins in an organism. It is considerably larger and more complex than the genome - the collection of genes that encodes these proteins. Proteomics deals with the qualitative and quantitative study of the proteome under physiological and pathological conditions (e.g., after exposure to alcohol, which causes major changes in numerous proteins of different cell types). To map large proteomes such as the human proteome, proteins from discrete tissues, cells, cell components, or biological fluids are first separated by high-resolution two-dimensional electrophoresis and multidimensional liquid chromatography. Then, individual proteins are identified by mass spectrometry. The huge amount of data acquired using these techniques is analyzed and assembled by fast computers and bioinformatics tools. Using these methods, as well as other technological advances, alcohol researchers can gain a better understanding of how alcohol globally influences protein str