Gene expression microarray data

Gene expression microarray data refers to a set of information obtained from microarray experiments designed to measure the expression levels of thousands of genes simultaneously. In these experiments, RNA molecules extracted from cells or tissues are hybridized to microarrays containing probes that are complementary to specific genes. The intensity of fluorescence emitted by each probe is then measured, reflecting the expression level of the corresponding gene.

Typically, microarray data is represented as a matrix, where rows correspond to genes and columns correspond to samples (e.g., different experimental conditions, time points, or biological replicates). Each entry in the matrix represents the expression level of a particular gene in a specific sample.

Gene expression microarray data can be used for various analyses, including identifying differentially expressed genes between conditions, clustering samples based on expression patterns, identifying co-expressed gene modules, and inferring regulatory networks. This data is valuable for understanding gene function, characterizing biological processes, and identifying potential biomarkers or therapeutic targets in various diseases.