

# Differential expression analysis

“Differentially expressed” refers to [genes](#) or [proteins](#) that exhibit changes in their [expression](#) levels between two or more conditions, such as different biological states or experimental treatments. In [molecular biology](#) and [genomics](#), [gene expression](#) refers to the process by which information from a gene is used to synthesize a functional gene product, typically a [protein](#) or [RNA molecule](#).

When researchers compare the gene expression profiles of two groups (e.g., diseased vs. healthy tissues, treated vs. untreated cells), they may identify genes that are differentially expressed. These genes are considered to be potentially important in understanding the underlying biological processes associated with the studied conditions.

Techniques such as microarray analysis and RNA sequencing (RNA-Seq) are commonly used to assess gene expression on a genome-wide scale. The results of these analyses provide a list of genes with their respective expression levels, and researchers can then identify which genes show significant changes between the conditions being compared.

Differential expression analysis plays a crucial role in molecular biology and biomedical research, as it helps identify potential biomarkers, therapeutic targets, and pathways associated with specific diseases or experimental intervention

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