

# Connect the omes, multiply your insights



## What is multiomics?

Multiomics integrates insights across two or more "omics" to resolve biological complexity with a multidimensional lens.



### PROTEOMICS

Assesses protein expression and properties to understand cellular function and disease biology.

Methods include: multiplex immunoassays, mass spectrometry, and next-generation sequencing (NGS)-based affinity proteomics



### TRANSCRIPTOMICS

Measures RNA transcripts to assess gene expression and transcriptome composition.

Methods include: mRNA sequencing, total RNA sequencing, single-cell RNA analysis, and spatial transcriptomics



### EPIGENOMICS

Examines DNA and chromatin modifications that regulate gene activity, including DNA methylation.

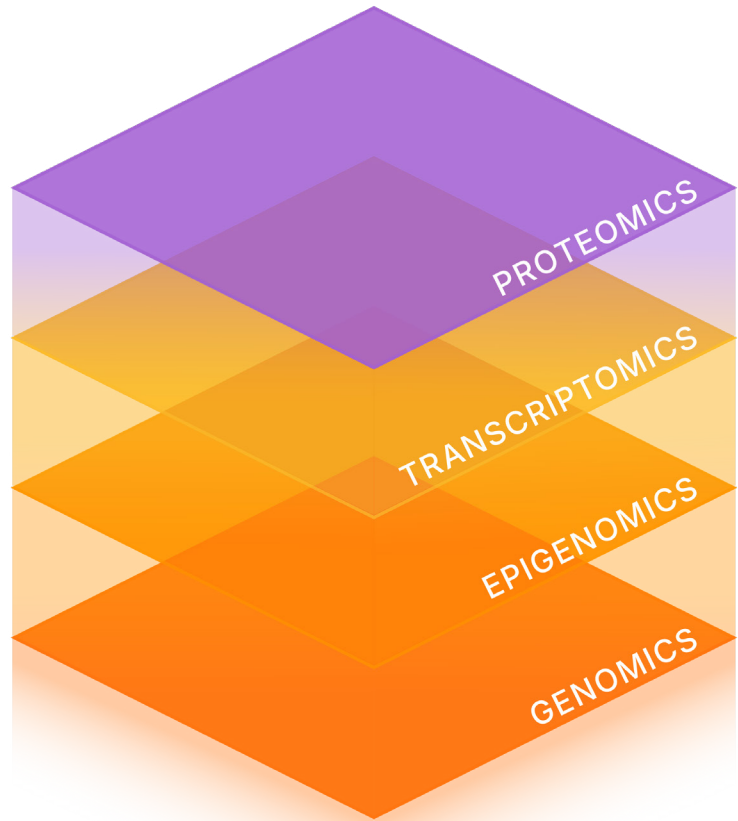
Methods include: whole-genome bisulfite sequencing, methylation arrays, and Illumina 5-base solution



### GENOMICS

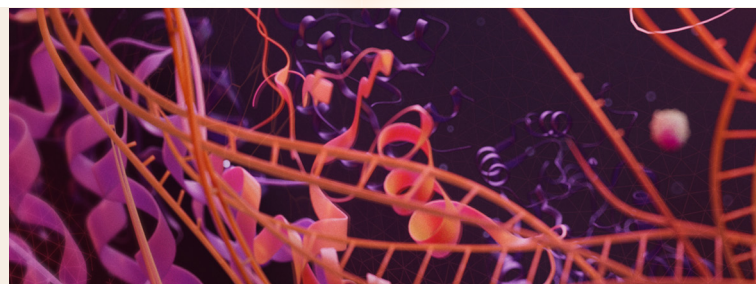
Studies DNA sequence variation and genome structure using NGS- and array-based methods.

Methods include: whole-genome sequencing, genotyping arrays, and whole-exome sequencing



# 75%

of life science research  
incorporates multiomics<sup>1</sup>



# What are the benefits of multiomics?

Multiomics enhances the power of discovery, while advanced sequencing and array technologies expand the types of discoveries possible.

Multiomics publications have increased more than

# 60x

over the last decade<sup>2</sup>

Multiomics grant funding has grown

# 10x

in 10 years<sup>2</sup>

## How can multiomics be applied?

By providing insights into how biological systems function under different conditions, multiomics unlocks insights that can help scientists optimize their time and advance research across multiple fields.



### Cellular and molecular biology

At the single-cell level, multiomics enables detailed profiling of cellular states and regulatory networks, helping researchers understand how cells function and respond to different conditions.



### Cancer research

By characterizing tumor biology across molecular layers, multiomics supports the identification of novel drug targets, mechanisms of therapy response or resistance, and biomarkers that guide precision oncology.



### Genetic diseases research

Multiomics adds biological context to disease-associated variants, helping to uncover key pathways and molecular mechanisms that may inform diagnostics or treatment strategies.<sup>3</sup>

## Discover more...



Population studies



Drug discovery



Host-pathogen interactions



Discover more by  
downloading our  
multiomics eBook →



"My advice is to dive right in. Multiomic workflows have become quite standard and just about anybody can do this type of work. The field is moving so quickly, if you wait for a time when it seems like it's mature, it will already have moved on to the next great thing."



**Ben Humphreys, MD, PhD**  
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1. Percepta Associates, Inc. Internal proprietary report. Published 2025. Accessed November 14, 2025.
2. Digital Science. Dimensions [Database]. [app.dimensions.ai](https://app.dimensions.ai). 2015–2025. Accessed December 4, 2025, under license agreement.
3. Crowther, LM, Poms, M, Plecko, B. [Multiomics tools for the diagnosis and treatment of rare neurological disease.](#) *J Inherit Metab Dis.* 2018;4(3):425–434. doi:10.1007/s10545-018-0154-7

