SAPIENT

Discover dynamic biomarkers beyond the genome.

Sapient is a biomarker discovery organization providing **bespoke services for proteomics, metabolomics, and lipidomics data generation and analysis.**

Using high throughput mass spectrometry, biocomputational analysis, and large-scale human biology datasets, we **rapidly identify, validate, and translate dynamic biomarkers for precision drug development –** enabling unprecedented insights into factors that modulate health, disease, and drug response over time.

Multi-Omics Services

Discovery Proteomics

Deep coverage across **>12K proteins & PTMs**

Targeted Protein Assays

For **high-specificity** key protein measures

Discovery Metabolomics and Lipidomics

Captures **>15K biomarkers** per biosample

Target Metabolite and Lipid Panels

For **focused** small biomarker discovery

Bicomputational Analysis

Integrative **multi-omics analysis to identify key biomarkers** and map their associations

We generate **greater biological insight from every sample.**

Sapient's integrated multi-omics services amplify your ability to identify biomarkers that can drive better disease understanding, stratify patients, and accelerate your therapies to market. **Our platform includes:**

High-Throughput Profiling
with next-gen analytical technologies

Sapient's proteomics methods use nanoflow separation coupled to trapped ion mobility mass spectrometry to measure thousands of proteins across diverse bioanalytical pathways. Mass spectrometry annotates proteins and post-translational modifications (PTMs) via direct peptide sequencing, enabling **precise protein identification and more in-depth analysis of protein function and regulation.**

Our proteomics methods are **scalable to fit your protein coverage and throughput needs, from high-throughput screenings to single, highly quantitative measures,** including for low-abundance cytokines and chemokines.

Additionally, Sapient's proprietary rapid LC-MS (rLC-MS) systems allow us to take a biological sample like blood and, in that sample, measure thousands of small molecules. This **enables discovery metabolomics and lipidomics in a single run,** capturing broad chemistries including polar metabolites, polar lipids, and nonpolar lipids.

Our nontargeted screenings **lead us to the most biologically relevant molecules – including those that may not yet be characterized –** which amplifies potential to uncover novel biomarkers associated with disease mechanisms, disease progression, patient response, and more. With more than 10,000 reference standards in our in-house library, we can provide 1,000+ Tier 1 metabolite identifications and putative structural insights for unknown molecules.

>12,000 proteins and PTMs
measured across diverse biological pathways, with scalable proteome coverage depth

>15,000 small molecule biomarkers
assayed per biosample in nontargeted method, including metabolites and lipids, in a single run

Diverse sample types
including liquid and tissue matrices from cellular, preclinical, and clinical studies

Capacity for rLC-MS to analyze
>5,000 biosamples per day

Why dynamic biomarkers?

Biomarkers have been shown to improve drug approval rates by 2-10x, but while the vast majority of biomarker discovery has focused on genomics to date, **>80% of disease risk is non-genetic.**

Sapient focuses on dynamic biomarkers because they **read out both genetic _and_ non-genetic factors of health, disease, and drug response.** Through large-scale profiling of these markers, we enable you to go beyond the genome to advance biomarker-guided drug development.

Biocomputational Analysis
to rapidly derive actionable insights

Our expert data science team **applies statistical and machine learning approaches** to analyze and integrate the large-scale datasets we generate to identify key biomarkers of interest.
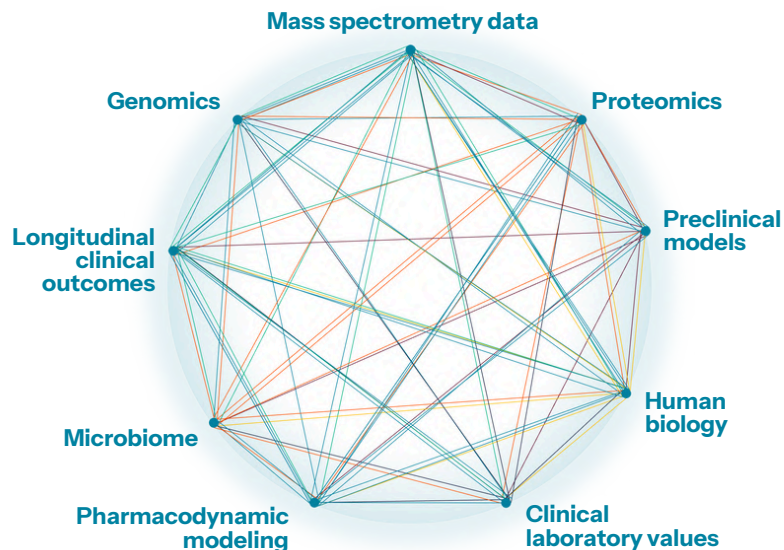
Multi-omics data integration
with other multi-dimensional measures

Biomarker-genotype & -phenotype
associations mapping for actionable insights

INTEGRATIVE ANALYSIS OF:

- Mass spectrometry data
- Genomics
- Proteomics
- Preclinical models
- Longitudinal clinical outcomes
- Human biology
- Microbiome
- Pharmacodynamic modeling
- Clinical laboratory values

Human Biology Database
to validate and mine discoveries

Sapient has built an expansive proprietary data repository collected from biosamples from diverse individuals and linked with real-world data including clinical outcomes. We use this data to **amplify discovery potential, to confirm biomarker findings in independent human samples,** and to validate preclinical and clinical discoveries.

Comprised of diverse disease-centric data including:

- Autoimmune / Inflammation
- Cancer
- Cardiovascular
- Hematologic
- Infection
- Infectious
- Liver/GI/Digestive
- Lung
- Metabolic
- Maternal-fetal
- Musculoskeletal
- Neurodegenerative
- Ophthalmologic
- Psychiatric
- Rare diseases
- Renal

Data, including in longitudinal datasets, from **56,000+ human biosamples**

>10-30 years of follow-up
across individuals, with data on:

- Adjudicated clinical outcomes
- Demographic features
- Lifestyle factors
- Response to intervention
- Human genetics, microbiome, etc.

130M+ phenotypic data points
linked to spectral data from biosamples

Rapidly growing database
with data for 60+ diseases and disorders and new biosamples added every month

Population-scale analyses

Our ability to generate, process, and analyze population-level data provides **the statistical power to identify robust, specific biomarkers** that answer key biological questions with high confidence.

An integrated approach to **amplify your discovery.**

Sapient's innovative technologies and approaches have removed traditional bioanalytical constraints to map dynamic biomarkers at **speed, scale, and in a time-efficient manner.**
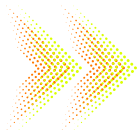
More measures with **next-generation analytical tools.**

We use our high throughput mass spectrometry systems to **capture thousands of proteins, metabolites, and lipids in every sample,** with rapid scalability to thousands of samples.

More actionable insight with expert **biocomputational analysis.**

Our data science team performs **integrative multi-omics data analysis,** including with other omics, preclinical, and clinical measures, to identify and map key biomarkers for your study.

More confidence using our **Human Biology Database.**

Sapient's **longitudinal database of multi-omics and real-world data from 56,000+ biosamples** can be used to cross-validate biomarker discoveries in independent human populations.
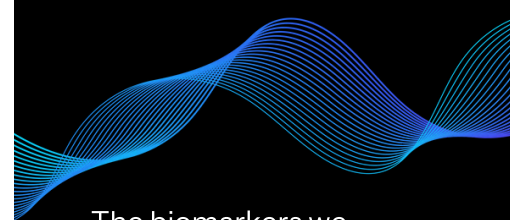

Your partner to **discover more and develop faster.**

CKIA

CAP ACCREDITED ✓
COLLEGE of AMERICAN PATHOLOGISTS

We are a collaborative partner in your mission to de-risk R&D and accelerate your most promising drugs. We can **apply and customize our discovery approaches in a multitude of ways to identify, validate, and translate robust biomarkers** to guide your studies.

This can include development of clinical assays in our CLIA-certified, CAP-accredited clinical laboratory.

The biomarkers we help you discover can be used to align the:

Right Disease

- Target ID and validation
- Disease mechanisms
- Early disease detection
- Disease progression

Right Patient

- Patient stratification
- Safety profiling
- Companion diagnostics
- Clinical trial enrichment

Right Therapy

- Dosing strategies
- Timing of treatments
- Target engagement
- Toxicology

SAPIENT

Discover more today.

+ sapient.bio
+ discover@sapient.bio
+ 858.290.7010