SAPIENT

Accelerating Biomarker Discovery

Sapient is a biomarker discovery partner dedicated to accelerating sponsors' drug programs through rapid, large-scale small molecule biomarker profiling.

Leveraging next-generation mass spectrometry, biocomputational analysis, and large-scale human biology databases, we enable **rapid identification and validation of circulating biomarkers of health, disease, and drug response at an entirely new scale.**

1 Human Biology Database
to validate and mine discoveries

Sapient has built an expansive proprietary data repository from analyses of hundreds of thousands of biosamples acquired from individuals across the globe. 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 but not limited to:

- 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 **>100,000+ 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

WHY SMALL MOLECULES?

Circulating chemistry is key to understanding the non-genetic landscape of disease and how genetic factors influence disease. Dynamic organ physiology, inter-organ communication, host-disease interactions, and host-environment exposures are encoded in small molecule biomarkers.

Sapient focuses on small molecules because they have the potential to provide an unprecedented view into host and disease factors that modulate health status, disease pathobiology, and drug responses across individuals.
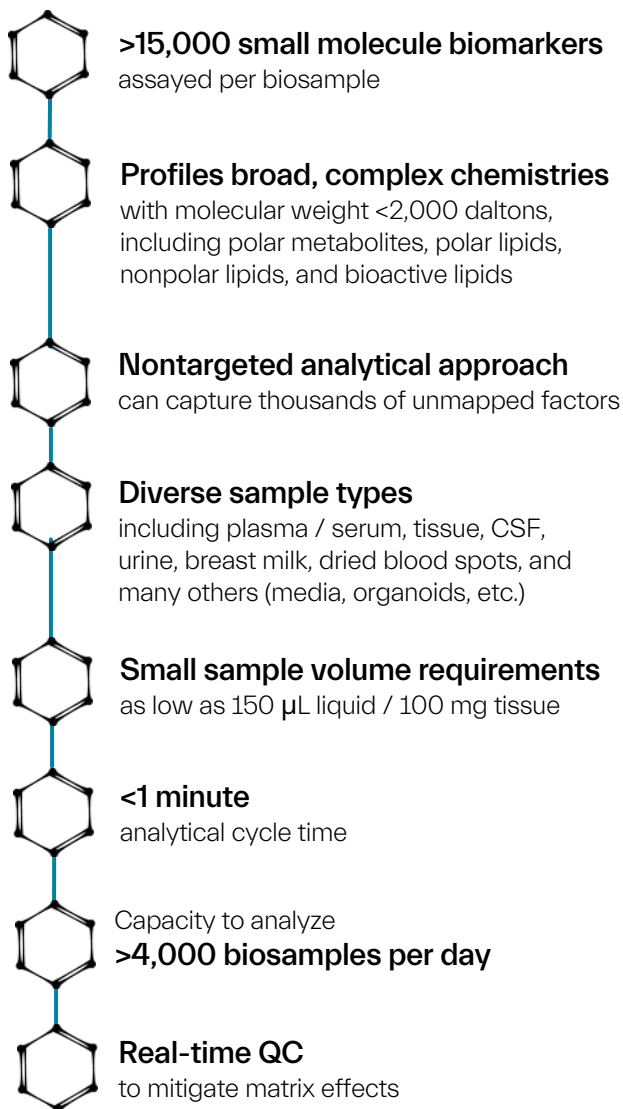
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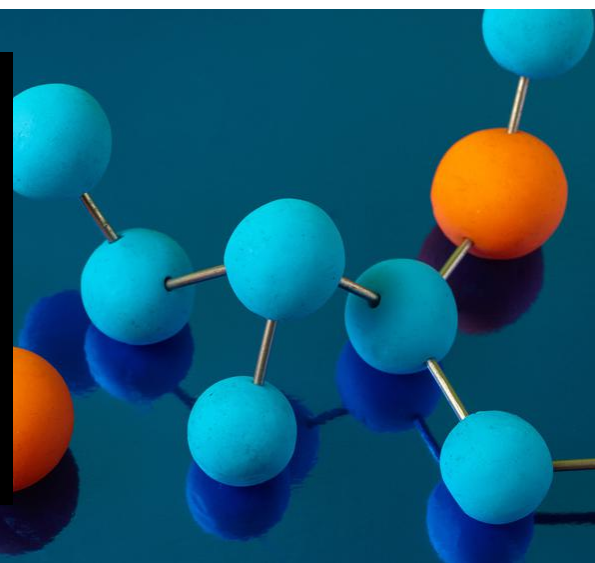
High-Throughput Profiling
with next-gen analytical technologies

Sapient's proprietary rapid LC-MS (rLC-MS) systems allow us to take a biological sample like blood and, in that sample, capture and measure thousands of small molecules.

STATISTICAL POWER FOR UNBIASED ANALYSIS

We focus on answering key biological questions – uncovering new pathways associated with disease mechanisms, disease progression, patient response, and more – using population-level data to identify specific, sensitive biomarkers with high confidence.

>15,000 small molecule biomarkers
assayed per biosample

Profiles broad, complex chemistries
with molecular weight <2,000 daltons, including polar metabolites, polar lipids, nonpolar lipids, and bioactive lipids

Nontargeted analytical approach
can capture thousands of unmapped factors

Diverse sample types
including plasma / serum, tissue, CSF, urine, breast milk, dried blood spots, and many others (media, organoids, etc.)

Small sample volume requirements
as low as 150 μL liquid / 100 mg tissue

<1 minute
analytical cycle time

Capacity to analyze
>4,000 biosamples per day

Real-time QC
to mitigate matrix effects

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Biocomputational Prioritization
to rapidly derive actionable insights

Our expert data science team applies statistical and machine learning approaches to analyze and integrate rLC-MS data with other large-scale data sets to identify key biomarkers of interest.

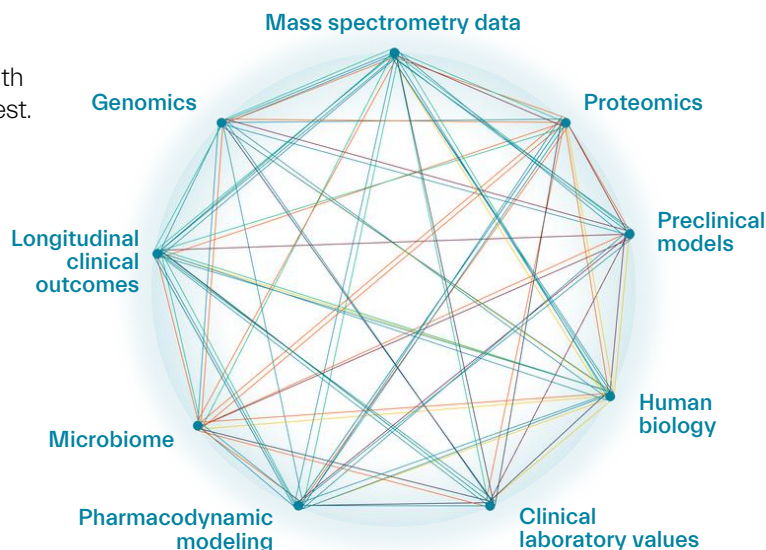### Proprietary peak extraction pipeline

- Scalable computing clusters
- Machine learning to remove up to 90% of false peaks without reducing true signals

Compound identification

- Spectral matching of 700+ known molecules using Sapient's metabolite standards library
- Molecular networking analysis of key unknown molecules with capabilities for structural elucidation

INTEGRATIVE ANALYSIS OF:

Mass spectrometry data

Genomics

Proteomics

Longitudinal clinical outcomes

Preclinical models

Microbiome

Human biology

Pharmacodynamic modeling

Clinical laboratory values

Rapid Translation from Discovery to Clinical Impact

Sapient delivers discoveries to answer key drug development questions critical to success, through rapid identification and validation of markers of the:

Right Patient

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

Right Disease

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

Right Therapy

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

The output of our analysis includes a formal presentation which interprets the data in the context of the biological question being asked, distilling the immense data generated to reveal specific, actionable findings.

We also provide the expertise and technology pipeline to translate key biomarkers into assays for clinical applications.

COMPLETE DATA TRANSPARENCY

In addition to processed and computational datasets, Sapient provides all raw data and m/z files to sponsors for full transparency.

Your Partner to Discover More and Develop Faster

We are here to help accelerate and optimize your drug pipelines to maximize probability of approvals, elucidating the pathways involved in disease, drug delivery, and the specific individuals that will respond to a particular intervention.

Team has 11+ years of experience in advanced discovery

Headquartered in San Diego, CA

Support for CLIA assay development

Interdisciplinary team of expert chemists, data scientists, engineers, and clinicians

SAPIENT

Ready to discover more?

Schedule a time to discuss your programs with our scientists.

Visit: sapient.bio | **Email:** discover@sapient.bio | **Call:** 858.290.7010