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What is DISCOVERY AT SCALE?

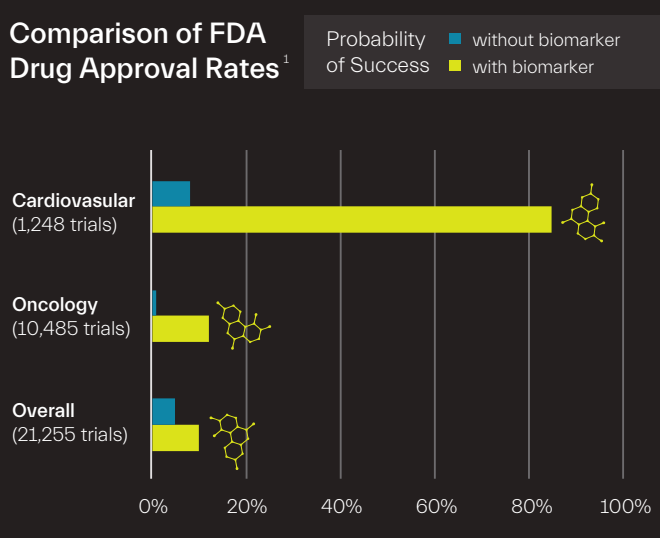
Multiplying the rate of biomarker discovery to maximize drug development success

A drug candidate with an associated biomarker is 2–10x more likely to obtain FDA approval.[1]

Biomarkers help to stratify patient populations by elucidating the involvement of specific genes, proteins, and molecular alterations that give rise to their disease state. Therapies can then be aligned with patients most likely to benefit.

Bioanalytical methods have been limited in their ability to probe this biology at a speed and scale that yields rapid impact, particularly when it comes to small molecule biomarker discovery – **until now**.

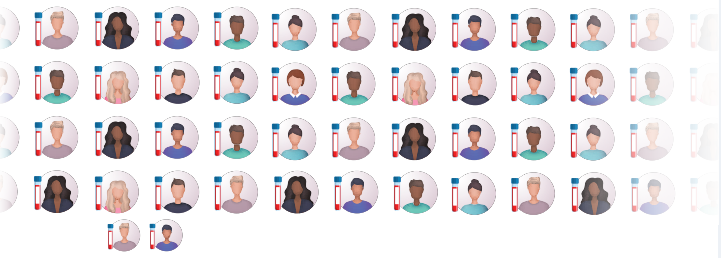
Comparison of FDA Drug Approval Rates[1]



Sapient Biomarker Discovery Platform

rLC-MS Profiling:
Rapid discovery with untargeted, ultra high throughput analysis

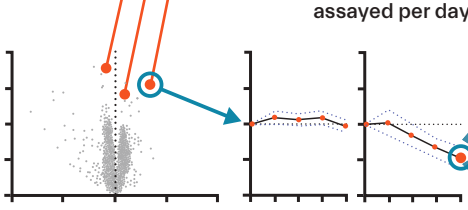
Sapient's next generation rapid liquid chromatography-mass spectrometry (rLC-MS) systems capture and measure thousands of small molecule biomarkers, including uncharacterized compounds, in any biological sample.



x15,000+
small molecule biomarkers captured per sample

BROAD CHEMISTRIES | UNMAPPED FACTORS | KNOWN METABOLITES

>5,000
biosamples can be assayed per day



Biocomputational Prioritization:
Identify key biomarkers in *your* biosamples

Leveraging biostatistical analysis and advanced algorithms, Sapient's data scientists can rapidly pinpoint sensitive and specific biomarkers of biological processes, disease progression, and/or drug responsiveness. This comprehensive analysis integrates high-dimensional data from:

PRECLINICAL MODELS | GENOMICS | HUMAN BIOLOGY | CLINICAL OUTCOMES

85%+
novel discoveries – the majority of molecules we capture are unknown

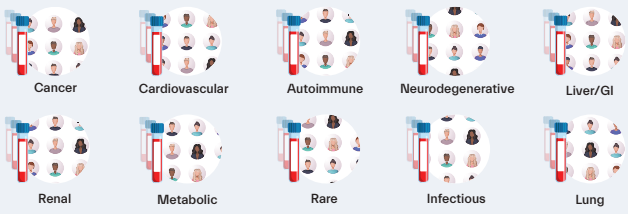
THE VALUE OF SMALL MOLECULE BIOMARKERS

Produced by interactions between genes, transcripts, and proteins, internal organs and the microbiome, as well as external factors such as diet and environmental exposures, small molecule biomarkers are uniquely suited to depict phenotype.

- **Non-invasively captured:** small molecules pass from local tissues into central circulation
- **Give early insight into disease mechanisms:** reflect biological processes occurring in real time across systems
- **Provide insight into human biology:** capture direct biomarkers of target engagement, indirect biomarkers of biological effects, and thousands of markers about the host which may influence overall drug responsiveness

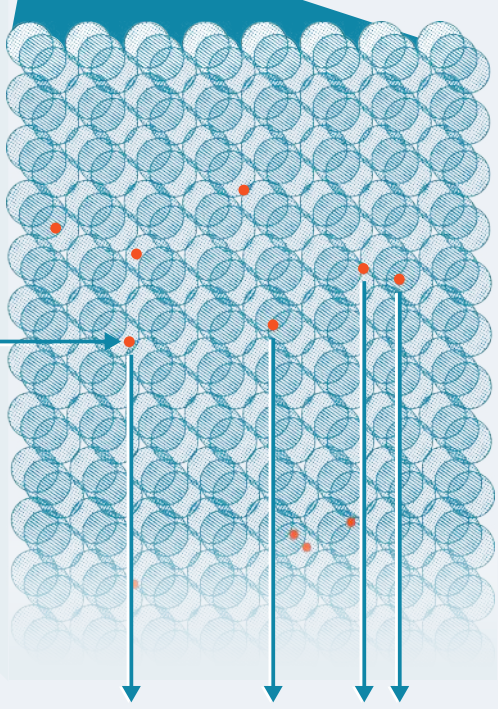
Human Biology Database:
Rapid validation with population-level biomarker insights

Sapient has built an expansive proprietary repository of data from hundreds of thousands of biosamples from individuals around the world – all of which have been assayed via our rLC-MS systems. Cohorts include:



x15,000+
small molecule biomarkers captured per sample

across
100,000+
human biosamples



This biomarker has already been measured in the samples in our database!

Database Validation:
Analyze the *same* biomarker in >100,000 biosamples

Sapient's longitudinal Human Biology Database can be readily tapped to confirm the biomarker findings in a large-scale, population-based cohort, providing the statistical power to validate the specificity and sensitivity of your biomarker. Sample data is also linked to data on individuals':

CLINICAL OUTCOMES | DEMOGRAPHIC FACTORS | LIFESTYLE FACTORS | DRUG RESPONSE | GENETICS, MICROBIOME

Individuals in our database have been clinically followed for >10-30 years

Clinical Laboratory Improvements Amendments

Does the biomarker hold diagnostic promise?

Sapient can support translation of your biomarker into an assay for use in clinical trials or CLIA settings.

Discover more to amplify the scale of your drug pipeline's success

Drug development shouldn't take more than a decade and over a billion dollars, and still fail greater than 80% of time. **Biomarker-driven drug development can shift this paradigm.**

Earlier diagnosis and intervention, optimized patient selection, smaller clinical trials, precise dosing and timing of treatments: all of this is possible with the right biomarkers. Sapient is here to help you find them faster, and accelerate the transformation of your pipeline's cost, efficiency, and value.

By discovering biomarkers of biological processes, disease progression, and drug responsiveness, we can identify the:

RIGHT DISEASE
Elucidate targets, detect disease early, predict progression

RIGHT PATIENT
Stratify patients, enrich clinical trials

RIGHT PHARMACOLOGY
Confirm target engagement, optimize dosing

Start your study today

Get in touch with Sapient the following ways:

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

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Sources
1. Wong et al. (2019). Estimation of clinical trial success rates and related parameters. *Biostatistics*, 20(2), 273-286.

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