



Bioinformatics and Computational Solutions for Genomic Insights

Building deep relationships at every level of support required

From computational infrastructure to consultative data analytics, Q² Solutions provides services at various levels to enable our customers with the fastest path from sample to answer. With over 500 years cumulative expertise in genomics, bioinformatics, and information technologies, our scientists have developed a portfolio of next-generation sequencing-based large data solutions to enable genomics studies from discovery to clinical biomarker development to building repositories of information across drug pipelines and disease indications.

Analysis services	Consultative services
We analyze your genomic data using our standard bioinformatic pipelines or develop custom, ad hoc analysis plans to gain biological insights	We provide advice on experimental design, best practice analysis techniques, troubleshooting, and pipeline and infrastructure build-out

Your trusted partner for bioinformatics and clinical development solutions

Your need	Our experience + solutions
Increasing speed to results and eliminating the bioinformatics bottleneck	<ul style="list-style-type: none"> All standard secondary analysis is delivered within 10 business days following data availability, accelerating the "time to answer"
Breadth of assay and bioinformatics solutions	<ul style="list-style-type: none"> We are platform agnostic and we can advise on which laboratory methods and bioinformatic solutions are optimal for your genomic testing needs
Data storage and computational limitations	<ul style="list-style-type: none"> We offer the redundancy and bandwidth to support any clinical trial in the world Delivery is available via hard drive, sFTP, Amazon S3, Aspera, and other preferred cloud vendors
Finding the right mix of statistical and genomic expertise to leverage and maximize biological data	<ul style="list-style-type: none"> With over 35 individuals in our bioinformatics organization, including more than 10 Ph.D. bioinformaticians, there is always an expert available to review your results Our experts identify the most critical results and provide you with the biological insights in easy to interpret outputs
Development of predictive biomarkers	<ul style="list-style-type: none"> Biostatistics for discovery and validation of clinical biomarkers

Global delivery of GCP-compliant services

All analysis pipelines are designed in Research Triangle Park, NC, USA, but can be deployed globally in our private compute environments, including our full-service clinical trial laboratory in Beijing, China. Use of the harmonized pipelines enables seamless integration of NGS data across global clinical trials.

RNA sequencing analysis	DNA sequencing analysis	Immuno-oncology services	Miscellaneous services
<ul style="list-style-type: none"> • Gene and isoform counting • Small RNA analysis • Single-cell RNA sequencing • Gene fusion analysis – custom gene fusion tool • Two group comparisons • Gene set enrichment analysis • Pathway analysis • Gene expression profiling & biomarker discovery 	<ul style="list-style-type: none"> • Variant calling – custom tools and processes to call low frequency variants using award-winning analysis tools • Structural variants • Copy number analysis – published tools calling copy number alterations from exome data • GWAS/PheWAS • Polygenic risk score calculation • Mutational signatures & biomarker discovery 	<ul style="list-style-type: none"> • Tumor mutational burden (TMB) analysis – accurate TMB scores with or without a matched normal sample • Immune landscape signatures – apply Q² Solutions-developed immune gene expression signatures or identify de novo signatures of response to therapy using various RNA assay platforms • T-cell receptor sequencing – T-cell repertoire analysis powered by molecular barcodes methodology • HLA profiling – identification of human leukocyte antigen types from DNA or RNA data • IgHV analysis – the only ERIC certified laboratory test in the U.S. 	<ul style="list-style-type: none"> • 16S rRNA microbiome analysis – identification of bacterial strains in sample • Viral genotyping – accurate identification of viral strain present in sample – COVID, flu, and many others • Survival and treatment analysis • New algorithm development including AI/ML • Custom services – available upon request

Rigorous software validation and testing

Q² Solutions employs a dedicated and independent software testing team, to ensure our validated pipelines are stable and reproducible. These pipelines are tested and assessed against a variety of standard and custom samples, across a variety of sample types and quality profiles.

Industry-leading expertise

Our scientific experts participate in major genomic standardization initiatives and ensure that our customers receive genomic data of the highest quality. These initiatives include:



SEQC I-II MAQC I-III
PrecisionFDA MicroArrays/
Sequencing Quality Control



External RNA Controls



Biorepositories and
Biospecimen Research
Branch



Tumor Best Practices
Working Group



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To learn more about our clinical genomic services, please visit
www.Q2LabSolutions.com/genomics-laboratories

