QIAGEN® Discovery Bioinformatics Services

Extend and scale your in-house resources with expertise and tailored bioinformatics services for high-quality results

Tailored bioinformatics services for research and discovery labs

We understand that not all research and development teams have the in-house bioinformatics and curation expertise to harness the power of complex and high-volume 'omics data to drive their project forward. In addition, many organizations lack time, workforce resources or server and infrastructure support. These limitations create bottlenecks, leaving research goals that simply don't advance. QIAGEN Discovery Bioinformatics Services enables you to bypass resource and expertise limitations and complements your existing team to complete your projects.

The solutions offered by QIAGEN Discovery Bioinformatics Services aim to ease these common burdens of research labs in pharma and biotech companies, without the need to make significant in-house investments. Let us help accelerate your projects with our tools, QIAGEN CLC Workbench, QIAGEN OmicSoft and QIAGEN Ingenuity® Pathway Analysis (IPA®), as well as our expertise. The solutions we offer include:

Custom Automated Workflows

- Pipeline script building
- Pipeline script integration
- Custom plugins for QIAGEN CLC
- Limited distribution custom plugins

Scalable Bioinformatics Services

- Multi-omics data processing
- Support for standard and non-standard model organisms
- Server setup and installation (for QIAGEN CLC and QIAGEN OmicSoft)
- Server maintenance (for QIAGEN CLC and QIAGEN OmicSoft)

Curation Services

- Literature curation for QIAGEN Ingenuity Pathway Analysis (IPA)
- IPA pathway curation
- Internal dataset curation
- Public dataset curation, for example, those available in QIAGEN OmicSoft
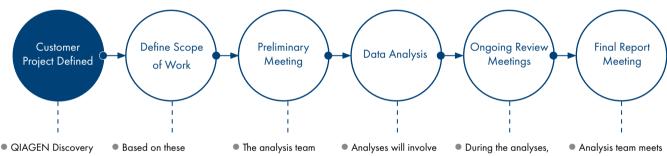- Ontology customization

Data Analysis and Management

- Internal data processing
- Public data processing
- Secondary data analysis using QIAGEN Digital Insights tools
- Data storage and visualizations in custom OmicSoft Land

''QIAGEN offered us a cost effective, timely and high-quality solution to our analysis requirements and we were very happy with the outcome.''

Philip James, Ph.D., Senior Researcher, Norwegian Institute of Food, Fisheries and Aquaculture Research (Nofima)

Example project: Data analysis and interpretation by QIAGEN Discovery Bioinformatics Services

Customer Project Defined → Define Scope of Work → Preliminary Meeting → Data Analysis → Ongoing Review Meetings → Final Report Meeting
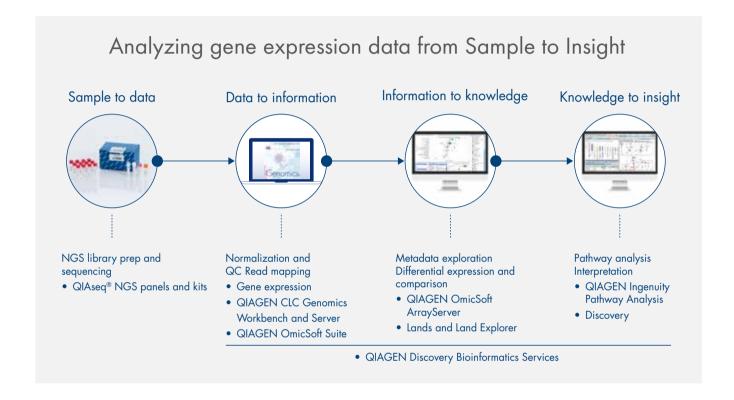
- QIAGEN Discovery Bioinformatics Services can work with your own data and/or data within QIAGEN's databases
- Initial meeting to discuss your project plans and expected outcomes

- Based on these discussions, QIAGEN Discovery Bioinformatics Services will generate a plan for the analysis work, define which data and tools will be used and expected timelines
- This is then sent to you for approval

- The analysis team at QIAGEN Discovery Bioinformatics Services meets with you to ensure goals/ expectations are clear on both sides
- Following the meeting, analysis work begins

- Analyses will involve using all necessary public and proprietary tools and databases, and even proprietary artificial intelligence and machine learning and custom tools developed by QIAGEN Discovery Bioinformatics Services:
- QIAGEN OmicSoft
- QIAGEN Ingenuity Pathway Analysis (IPA)
- QIAGEN CLC Genomics Workbench
- QIAGEN Knowledge Base
- QIAGEN Precision Insights

- During the analyses, regular meetings are scheduled to review interim results and adapt plans if required
- Interim data discussed with you to determine next steps

- Analysis team meets with you to review the final results defined in the scope
- Written report provided; high-quality, publication-ready graphics can also be provided

Unlock the secrets of 'omics data for better outcomes

QIAGEN Discovery Bioinformatics Services uses the best-in-class bioinformatics tools and solutions from QIAGEN Digital Insights to support your projects and goals, whatever your needs may be. We offer complete, Sample to Insight® workflows and tools which work together to help reveal deep insights into your biological questions.
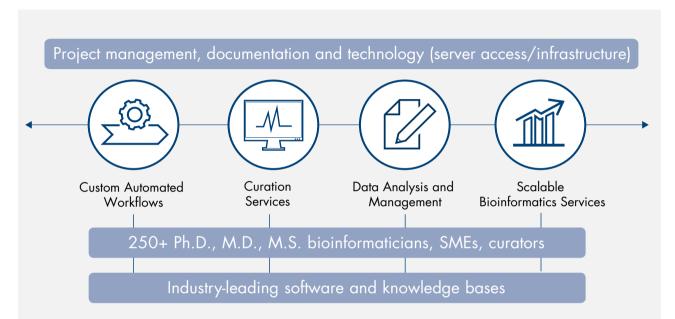
Analyzing gene expression data from Sample to Insight

Sample to data	Data to information	Information to knowledge	Knowledge to insight

NGS library prep and sequencing
• QIAseq® NGS panels and kits

Normalization and QC Read mapping
• Gene expression
• QIAGEN CLC Genomics Workbench and Server
• QIAGEN OmicSoft Suite

Metadata exploration Differential expression and comparison
• QIAGEN OmicSoft ArrayServer
• Lands and Land Explorer

Pathway analysis Interpretation
• QIAGEN Ingenuity Pathway Analysis
• Discovery

• QIAGEN Discovery Bioinformatics Services

QIAGEN Discovery Bioinformatics Services:
Powered by QIAGEN Digital Insights curated 'omics knowledge and software for actionable insights

QIAGEN Discovery Services uses the complete toolkit of QIAGEN Digital Insights software and curated knowledge bases to provide the required scale, infrastructure and detailed answers to the biological questions driving your 'omics projects.

Partner with a leading provider of bioinformatics tools and services for discovery research scientists

Complete consulting, curation, data analysis and custom solution bioinformatic services for any team or project.

- **Custom Automated Workflows**
  Quickly respond to projects that require a custom workflow and pipeline, whether to tailor a plugin, integrate the software with other platforms or to work with new tools. Remove barriers to more efficient processing of data from experiments without being limited by project scale or the level of sample throughput.

- **Data Analysis and Management**
  Broaden access to multiple data types and enable access to non-standard model organisms, allowing researchers to conduct more clinically-relevant experiments the first time to achieve a complete picture from the data. Partner with trusted experts to explore biological pathways, identify causal variants and explore large-scale next-generation sequencing (NGS) population studies, enabling faster access to large-scale data analyses and high-quality, reliable data.

- **Curation Services**
  Tap into decades of in-depth content curation expertise to custom annotate and curate content. Access more consistent and representative data, whether from literature, public or private datasets and pathways, utilizing ontologies from QIAGEN OmicSoft or QIAGEN Knowledge Base or building unique ontologies.

- **Scalable Bioinformatics Services**
  Increase project capacity by instantly accessing an expert workforce to respond to fluctuations in research project demand and assist with both small- and large-scale projects.
  Quickly increase project data capacity with flexible onsite and cloud-based server options and maintenance, no matter how large the research project, without investing in expensive server infrastructure.

Services	Customer challenge	Services available

Custom Automated Workflows	Core groups need to deliver high-quality data and meaningful data analyses to their pharmaceutical discovery research teams. This requires a reliable and efficient team of bioinformaticians, biologists and project managers as well as other skill sets that can scale to accommodate small or large projects.	1. Pipeline integration into QIAGEN CLC or QIAGEN OmicSoft
		2. Pipeline building or customization
		3. Automated and semi-automated workflows
		4. R and Python API integration for QIAGEN OmicSoft, QIAGEN IPA and internally developed tools
		5. Custom QIAGEN CLC plugin
		   a. Tailored import and export for custom data types
		   b. Custom reports in customer-specified formats
		   c. Advanced workflow tools

Data Analysis and Management	Data analysis and management:
	Core groups need to deliver high-quality data and meaningful data analyses to their pharmaceutical discovery research teams that require reliable and efficient industry-tested software in order to produce high-quality multi-omics data processing.
	
	Multi-omics capabilities:
	Core groups need to provide a comprehensive menu of offerings for pharmaceutical discovery research teams, that includes full multi-omics bioinformatics capabilities and analyses, QC and interpretation, such as mRNA and miRNA, DNA, protein, metabolomics and microbiome. They need current applications that can adapt to accommodate as many non-standard model organisms as possible (e.g., animal models, microbial organisms) for pharmaceutical discovery research teams.
		1. Data analysis and management
		   a. Integrate and visualize multiple data types (RNA-seq, miRNA-seq, RNA microarray, DNA-seq, microbiome, metabolite and more)
		   b. Support for standard and non-standard model organisms
		   c. Internal data or public data processing: QIAGEN OmicSoft Array Studio, QIAGEN CLC Genomics Workbench, publicly available workflows
		   d. Secondary data analysis for gene sets, pathways and biomarkers using QIAGEN IPA, QIAGEN OmicSoft and QIAGEN CLC Genomics Workbench and publicly available resources
		   e. Data storage and visualization creating a custom OmicSoft Land: This can be from raw or pre-processed data files and can be combined with a metadata curation service, with additional pre-computed statistical models, and data shared with collaborators using Land Viewer
		2. Multi-omics capabilities
		   a. Integrate and visualize multiple data types (RNA-seq, miRNA-seq, RNA microarray, DNA-seq, microbiome, metabolite and more)
		   b. Support for standard and non-standard model organisms

Services	Customer challenge	Services available

Curation Services	Core groups need to deliver high-quality data and meaningful data analyses to their pharmaceutical discovery research teams, which includes metadata curation to enable more meaningful analysis. Metadata must be consistent and normalized for use in machine learning and artificial intelligence algorithms.	1. IPA literature curation
		2. IPA pathway curation
		3. IPA pathway import
		4. Curation of public or internal datasets:
		  a. match internal or external standard
		  b. match internal data to OmicSoft Land standard
		5. Ontology Customization:
		  a. QIAGEN Knowledge Base
		  b. QIAGEN OmicSoft ontologies
		  c. Public ontology
		  d. Customized ontology

Scalable Bioinformatics Services	Server scaling and maintenance: Core groups need to have operational efficiencies and flexibility to accommodate requests from their pharmaceutical discovery research teams for various project sizes (low- and high-sample throughput).
	
	Scalable bioinformatics workforce: Core groups need to deliver high-quality data and meaningful data analyses to their pharmaceutical discovery research teams, that require a reliable and efficient team of bioinformaticians, biologists, project managers and other skill sets that can scale to accommodate small or large projects.
	
	Training solutions: Core groups need to deliver high-quality data and meaningful data analyses to their pharmaceutical discovery research teams, that require a reliable and efficient team of bioinformaticians, biologists, project managers and other skill sets that can scale to accommodate small or large projects.
		1. Server scaling and maintenance
		  a. Cloud-based server options – let our team utilize QIAGEN cloud resources for data processing and analysis of your project
		  b. Server installation
		  c. Onsite and cloud-based server maintenance
		2. Scalable bioinformatics workforce
		  a. Access to highly-trained bioinformaticians, Ph.D.-qualified scientists and developers
		  b. Dedicated project management to oversee and guide each project efficiently
		  c. Highly-skilled workforce with QIAGEN Digital Insights software (e.g., QIAGEN OmicSoft, QIAGEN IPA, QIAGEN CLC)
		3. Training solutions
		  a. Tailored documentation on in-house systems
		  b. Custom training and documentation using customer-derived use cases
		  c. Office hours with highly-trained bioinformaticians

Two service models – fixed-scope statement of work (SOW) or virtual full-time equivalent (FTE)

- **Single Service Model:** Fixed-scope SOW project for a single project with defined deliverables and single contract

- **Annual Service:** Virtual full-time equivalent (FTE) project for multiple projects with ongoing broader scope over the course of a year, with contract renewed each

Choose one of our two service models that best meets your project needs. The Single Service Model is suitable for defined projects with a fixed number of samples and deliverables. The Annual Service Model provides flexibility for projects where there is a clear need for a trusted partner with the ability to respond to changing research priorities.

Example project:
Customer needs data processing, metadata curation, data analysis, data interpretation, data storage, data sharing

	Customer is conducting a clinical study with both RNA-seq and exome-seq as part of the protocol
	Processing of RNA-seq and exome-seq data is done using QIAGEN bioinformatics tools, including QIAGEN OmicSoft, QIAGEN IPA and in-house analysis tools (R package)
	Sample metadata is curated using OmicSoft ontologies
	Results are delivered in a report format along with a custom OmicSoft Land and customer-specified data tables for use in an in-house database
	Customer stores and shares the results of the study using in-house databases and OmicSoft, and maintains the pipeline for further projects

As one of the world's leading bioinformatics companies, QIAGEN's broad spectrum of innovative bioinformatics know-how, technologies and knowledge bases allows us to uniquely support you. We have the depth and breadth of content, content-driven analytics and Sample to Insight workflows that will turn any project into a success. As a recognized leader in bioinformatics solutions, we provide genomic and clinical knowledge, analysis, interpretation tools and services for scientist and clinicians.

QIAGEN Discovery Bioinformatics Services is a collection of scientists who help support research and discovery labs to achieve their goals, whatever those may be. We can take on only specific elements of your project, or handle the entire journey — from Sample to Insight. We provide expert consultation along the way, working as your trusted partner to help you achieve project goals. Our team of trusted bioinformaticians and biologists are experts in QIAGEN bioinformatics software to advise your organization on the most critical projects, delivering on time and within budget. Our Discovery Bioinformatics Services team utilizes industry-leading software and knowledge bases to provide customized consultation for your project needs related to curation, data analysis and custom solutions to accelerate your research and deepen your insights to drive discoveries. We give you access to some of the most highly-qualified bioinformaticians in the industry as well as a project management team to ensure project success.
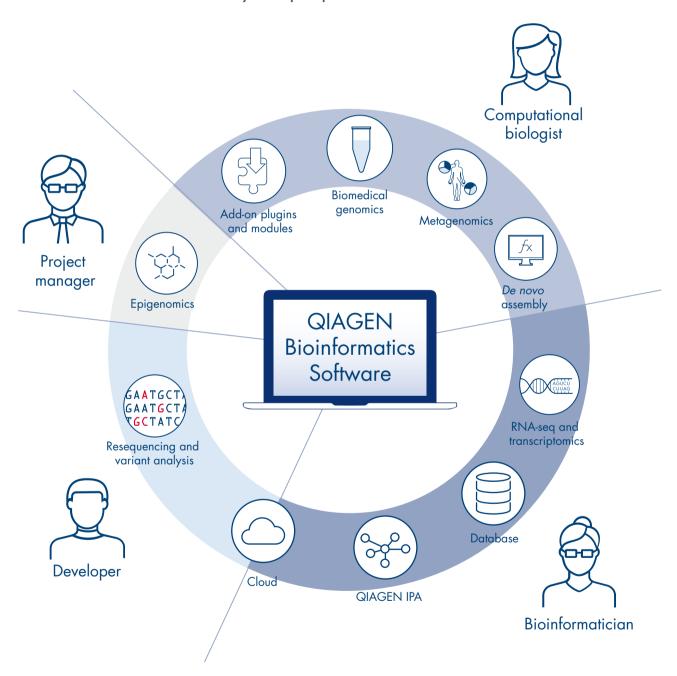

"QIAGEN's investment in bioinformatics has enabled us to have one of the largest group of bioinformaticians, curators, data scientists, IT consultants and developers in the industry, with our services helping to support and enhance our product solutions. This is an area where we contribute greatly to our customers, and allow them to focus on accelerating drug discovery and research while we handle day-to-day analysis and curation needs."

Matt Newman, VP of Global Professional Services, QIAGEN Bioinformatics

Put your project in good hands:
Partner with QIAGEN Discovery Bioinformatics Services
to accelerate and drive your projects to success

> "By partnering with QIAGEN Discovery Bioinformatics Services, we were able to manage, streamline and scale our bioinformatics project pipeline without acquiring or consuming in-house capabilities. We saved hundreds of thousands of dollars, yet were able to maintain confidence in the data analysis and processing."
>
> Customer from a small biotech company

Contact us today to get your next project started. **discoveryservices@qiagen.com**

Learn more at **digitalinsights.qiagen.com/services-overview/qiagen-discovery-bioinformatics-services/**

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