Sample to Insight® at LightSpeed

Accelerate your time-to-result in NGS oncology testing

For clinical research labs that require a fast, cost-effective, ultra-precise workflow for oncology NGS testing, the QIAGEN® Sample to Insight Oncology Solution delivers the speed you need and the answers you can trust.

Targeted next-generation sequencing (NGS) is an ideal tool for studying the genetic basis of cancer, facilitating the survey of large numbers of targets (potential variants) in parallel, while also offering high sensitivity.

However, to effectively analyze somatic variants, NGS pipelines require three essential components: Efficient means of preparing enriched libraries from challenging sample types, optimized and relevant enrichment panels and advanced bioinformatics tools.

QIAGEN's new barrier-breaking Sample to Insight Oncology Solution combines targeted DNA and multimodal pan-cancer panels, the fastest and cheapest secondary analysis in the market and trusted variant interpretation and reporting software powered by augmented molecular intelligence.

QIAseq® Panels → **QCI® Secondary Analysis with LightSpeed** → **QCI Interpret**

Sample to Insight

Simplify and speed-up NGS workflows with QIAseq targeted and multimodal sequencing panels

- **Complete, uniform target coverage** – single-tube enrichment for up to 20,000 DNA targets (and an additional 8,000 RNA targets for multimodal) staggered placement of primers across the target region ensures high uniformity (>99%) and complete coverage.
- **High compatibility with challenging samples** – works with FFPE samples, plasma/serum, fresh or frozen tissue, cell lines, liquid biopsies with a minimum DNA input requirement as low as 10 ng.
- **Single-day, automation-friendly library preparation** – go from sample to sequencing-ready library in 8 hours or less with minimum hands-on time.
- **Customization made easy** – boost any cataloged panel with additional content if something is missing or design a custom panel using either our flexible GeneGlobe custom builder or expert design service.
- **Pan-cancer profiling with multimodal approach** – comprehensive genomic profiling workflow for simultaneous detection ofDNA variants, RNA fusions and TMB/MSI status in solid tumors and heme malignancies.

>4 million samples processed with QIAseq Panels

"The QIAseq Targeted DNA Pro library prep is around 6 hours, which is very attractive for cancer research labs."

Dr. Barnaby Clark, Laboratory Lead for Precision Medicine, Kings College Hospital NHS Foundation Trust

"QIAseq Multimodal Panels are a cutting-edge method that allowed us to simultaneously identify DNA variants and RNA fusions for comprehensive profiling of tumors."

Dr. Vincent Funari, Vice President of Research and Development at NeoGenomics Laboratories

QIAseq Targeted DNA Pro Panels

Enables sample to sequencing-ready libraries in less than 6 hours for detection of SNVs, small indels, CNVs and loss of heterozygosity (LOH)

QIAseq Targeted cfDNA Ultra Panels

Enables detection of variant allele frequency down to 0.1% VAF from cfDNA with >99% specificity

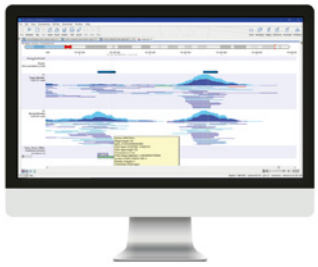
QIAseq Multimodal HT Panels

Enables simultaneous enrichment and profiling of DNA variants, RNA fusions and gene expression levels from one sample

QCI Secondary Analysis with LightSpeed

Scale your NGS secondary analysis with an ultra-fast FASTQ to VCF pipeline

LightSpeed is QIAGEN's new software for NGS secondary analysis that is securely hosted on QCI Secondary Analysis, our managed cloud-based service.



- **Unrivalled speed** – capable of processing one WES sample at 35x coverage in less than 1 minute, LightSpeed can process large comprehensive cancer panels in seconds.
- **Lowe cost per sample** – costs less than $0.30 per WES sample; therefore, can process targeted panels for a fraction of that price.
- **Gold standard accuracy** – achieves 99% accuracy for more than 90% of the genome.

30% faster and 94% cheaper than Vendor I*

Seamlessly connects to QCI Interpret

"Speed is insane given that it's on CPU only. All expected variants have been detected."

Joseph Halstead
Lead Bioinformatician, All Wales Medical Genomics Service, Cardiff University

QCI Interpret for Oncology

Automate your NGS variant interpretation and reporting with augmented molecular intelligence

QCI Interpret is variant interpretation and reporting software that transparently computes ACMG/AMP variant classifications, enabling users to generate evidence-based reports with efficiency, confidence, and reproducibility.

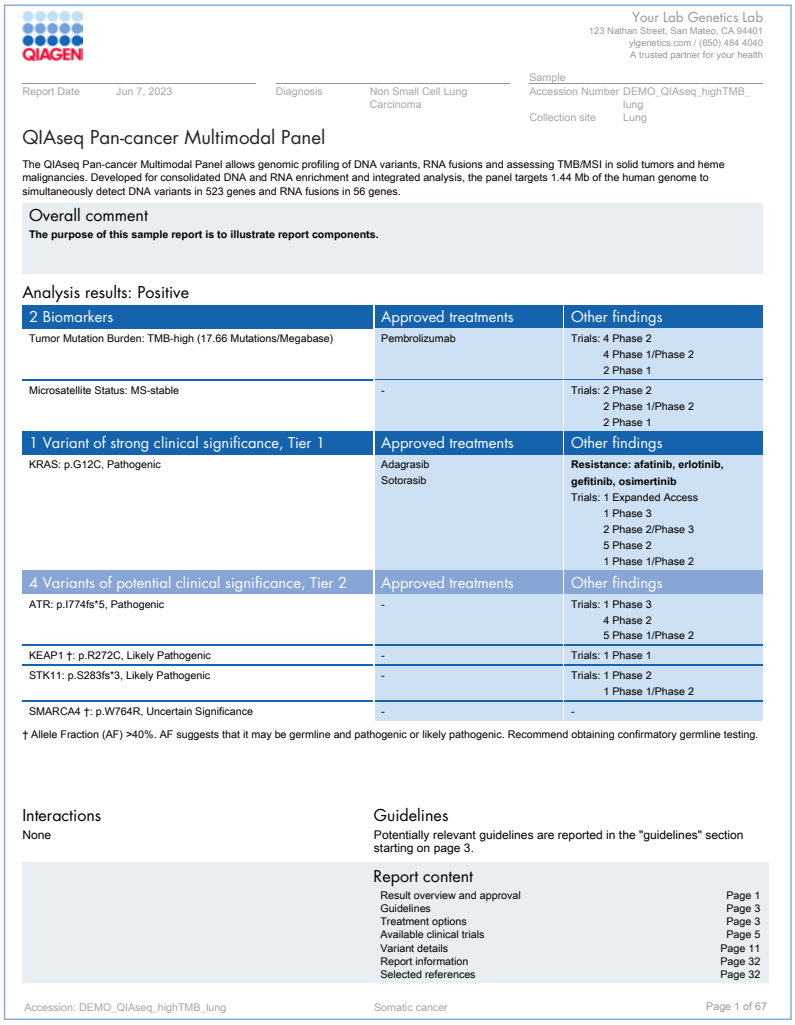
- **Trusted content** – encompasses >40 databases maintained by machine and human curators who add >46,000 new findings each week.
- **Oncologist-reviewed variant summaries** – provides access to over 460,000 decision-ready interpretive comments to help accelerate turnaround time.
- **On-demand interpretation service** – receive customized, oncologist-reviewed interpretations for every clinically relevant variant submitted (Ideal for rare or novel variants).

>3 million NGS test cases interpreted

"The adoption of QCI Interpret has advanced our ability to efficiently classify somatic variants in solid tumors and confidently match therapies to biomarkers."

Manja Meggendorfer, PhD
Head of Molecular Genetics, Munich Leukemia Laboratory

Generate custom and concise final reports



QIAGEN

Your Lab Genetics Lab
123 Nathan Street, San Mateo, CA 94401
ylgenetics.com / (650) 484 4040
A trusted partner for your health

Report Date Jun 7, 2023
Diagnosis Non Small Cell Lung Carcinoma
Sample
Accession Number DEMO_QIAseq_highTMB_lung
Collection site Lung

QIAseq Pan-cancer Multimodal Panel

The QIAseq Pan-cancer Multimodal Panel allows genomic profiling of DNA variants, RNA fusions and assessing TMB/MSI in solid tumors and heme malignancies. Developed for consolidated DNA and RNA enrichment and integrated analysis, the panel targets 1.44 Mb of the human genome to simultaneously detect DNA variants in 523 genes and RNA fusions in 56 genes.

Overall comment
The purpose of this sample report is to illustrate report components.

Analysis results: Positive

2 Biomarkers	Approved treatments	Other findings
Tumor Mutation Burden: TMB-high (17.66 Mutations/Megabase)	Pembrolizumab	Trials: 4 Phase 2 4 Phase 1/Phase 2 2 Phase 1
Microsatellite Status: MS-stable	-	Trials: 2 Phase 2 2 Phase 1/Phase 2 2 Phase 1
1 Variant of strong clinical significance, Tier 1	**Approved treatments**	**Other findings**
KRAS: p.G12C, Pathogenic	Adagrasib Sotorasib	**Resistance: afatinib, erlotinib, gefitinib, osimertinib** Trials: 1 Expanded Access 1 Phase 3 2 Phase 2/Phase 3 5 Phase 2 1 Phase 1/Phase 2
4 Variants of potential clinical significance, Tier 2	**Approved treatments**	**Other findings**
ATR: p.I774fs*5, Pathogenic	-	Trials: 1 Phase 3 4 Phase 2 5 Phase 1/Phase 2
KEAP1 †: p.R272C, Likely Pathogenic	-	Trials: 1 Phase 1
STK11: p.S283fs*3, Likely Pathogenic	-	Trials: 1 Phase 2 1 Phase 1/Phase 2
SMARCA4 †: p.W764R, Uncertain Significance	-	-

† Allele Fraction (AF) >40%. AF suggests that it may be germline and pathogenic or likely pathogenic. Recommend obtaining confirmatory germline testing.

Interactions
None

Guidelines
Potentially relevant guidelines are reported in the "guidelines" section starting on page 3.

Report content

With QCI Interpret, you can easily generate a final report with only the most relevant findings. While labs can customize the layout to meet your needs, standard reports include:

- Sample-specific details, including case, client and collection information.
- Summary of high-level results, including biomarker findings, significant variants, associated therapies, and potential interactions.
- Individual variant interpretations, including AMP/ACMG classifications, biomarker summaries, disease summaries, details on molecular function and incidence, and diagnostic and prognostic significance with region-specific clinical trials and approved drugs (FDA, EMA).
- Bibliography containing all evidence considered.

Learn more and request a consult at
www.digitalinsights.qiagen.com/sample-to-insight-oncology

The QIAseq Targeted DNA Pro Panels and Pan-cancer Multimodal Panels are intended for molecular biology applications. These products are not intended for the diagnosis, prevention or treatment of disease.

QCI Interpret is an evidence-based decision support software intended as an aid in the interpretation of variants observed in genomic next-generation sequencing data. The software evaluates genomic variants in the context of published biomedical literature, professional association guidelines, publicly available databases, annotations, drug labels, and clinical trials. Based on this evaluation, the software proposes a classification and bibliographic references to aid in the interpretation of observed variants. The software is NOT intended as a primary diagnostic tool by physicians or to be used as a substitute for professional healthcare advice. Each laboratory is responsible for ensuring compliance with applicable international, national, and local clinical laboratory regulations and other specific accreditations requirements.

*Results from benchmark study using public data from Vendor I website.

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