ctDNA Lung

NGS Panel

NGS
Clinical Panels

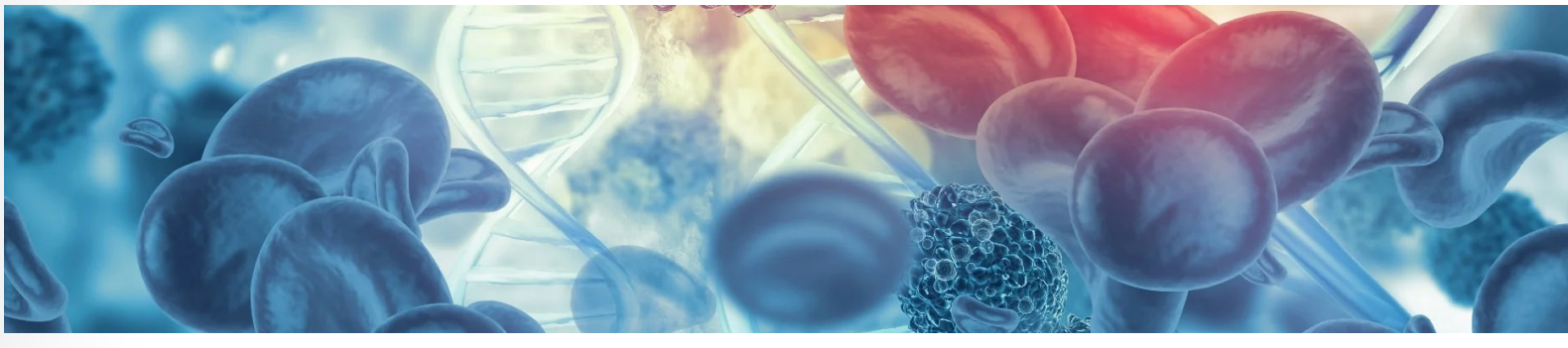
The Genes 2Me ctDNA Lung NGS panel is a hybridization based solution for screening 43 clinically relevant genes (coding regions of the genome) for diseases associated with genetic mutations. It covers all major mutations like SNV, and InDels, adding up to a target size of 110Kb with a hybridization-based target capture technique.

Focused Comprehensive Panel: Targets all the specific genes encapturing ultra-low VAF mutations

Low Input: Process compatible with low input quality compromised samples

Robust and Rapid Workflow: Hybridization enhancer technology and enzyme based library preparation enables quick turn around time.

CliSeq Interpreter: User friendly companion software for automated & cloud based analysis and reporting.



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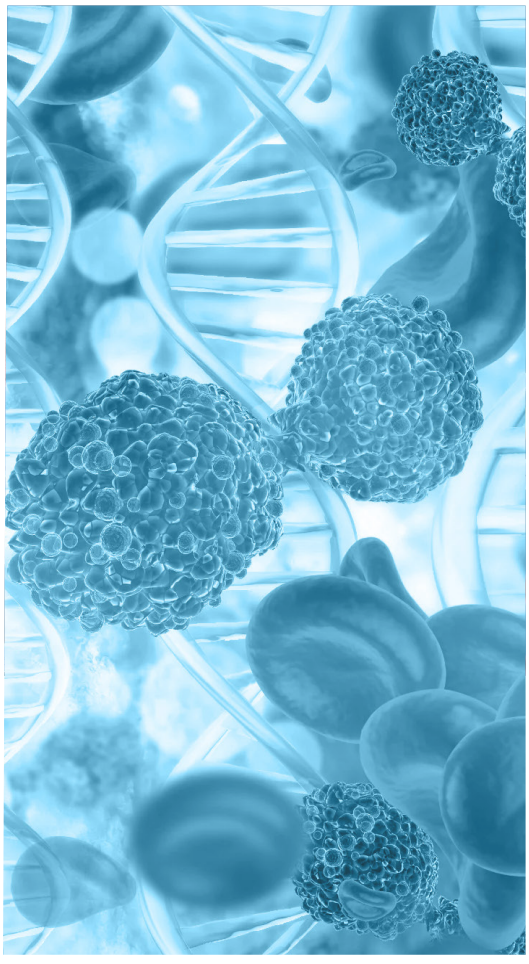
NGS Panel



Lung cancer remains one of the most diagnosed malignancies, being the second most diagnosed cancer, while still being the leading cause of cancer-related deaths. Based on the histological aspect, lung cancers can be divided into two main types—non-small-cell lung cancer (NSCLC) and small-cell lung cancer (SCLC)—the first being responsible for more than 80% of lung cancers, while the latter accounts for about 15% of bronchogenic carcinomas. High mortality rates in lung cancer are not type-specific, with the survival rate being directly linked to the stage at diagnosis. More precisely, the 5-year survival rate is about 14% in stage III and 1% in stage IV NSCLC, and 8% in stage III and 2% in stage IV SCLC. Lung cancer diagnosis is challenging in the early stages because patients do not present any symptoms, or symptoms are shared with other pulmonary diseases. In addition, classic techniques for lung cancer diagnosis have many false-negative results due to different reasons, such as quality and quantity of the samples or sensitivity of the test. Still, the late diagnosis is not the only cause for high mortality in lung cancer. Here, NGS can be beneficial due to its high sensitivity and specificity, using low amounts of sample. Additionally, NGS can determine an increased number of alterations simultaneously from the same quantity of sample. Therefore, NGS has been applied with success in the identification of lung cancer-specific mutations with a higher rate than standard PCR testing.

No. of Genes	43
Gene count /family	~32
Covered region	Whole CDS, Hotspots, DNA Fusions
Target size	110 kb
Mutation type	SNVs/InDels/CNVs
Sample type	Blood/Plasma

The Genes 2Me Ct DNA Lung Panel screens lung cancer causing genes to identify somatic mutations in DNA from blood tissue. It provides comprehensive detail of the cancer and helps to decide the best course of treatment. The screening method involves using circulating tumor cells that are used as biomarkers to detect lung cancer. Circulating tumor DNA (ctDNA) is released from apoptotic and necrotic tumor cells. Applications of ctDNA in lung cancer include early diagnosis and detection, prognosis prediction, detecting mutations and structural alterations, minimal residual disease, tumor mutational burden, and tumor evolution tracking.

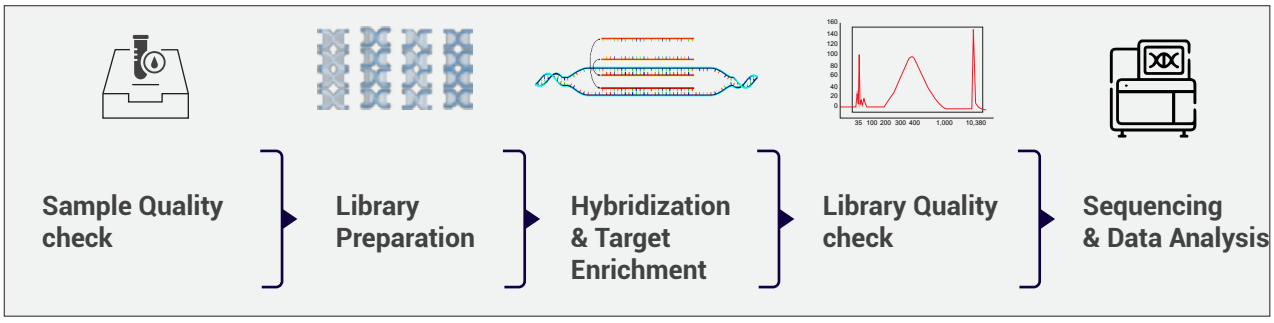
Gene List

AKT1	ALK	ARAF	ARID1A	BRAF	CBL	CDKN2A	CTNNB1	EGFR#
ERBB2#	HRAS	KEAP1	KMT2D	KRAS	MAP2K1	MET#	MTOR	NF1
NRAS	NTRK1	NTRK2	PIK3CA#	PTEN	RB1	RET	RIT1	ROS1
SETD2	SOX2#	STK11	TP53#	U2AF1				

Process Workflow

A. Platform Agnostic

Sequencing on multiple platforms (Illumina, MGI and Element Biosciences)



B. Bioinformatics Solutions

Data Analysis and Interpretation using Genes 2Me Cliseq Interpreter software

Panel Performance

Features	Illumina	MGI
Coverage uniformity	98%	97%
Precision	96%	97%
Reproducibility	99%	99%
Sensitivity	<1% VAF at 95%	<1% VAF at 95%
On Target Ratio	86-95 %	87-95%

Specifications

Starting Material (DNA)	Library preparation time	Bioinformatics analysis	Databases used for Annotation
10-20 ng circulating tumor DNA	1.5 days (including Target Capture & Enrichment) for manual process With **G2M Auto EzyPrep automated NGS Library preparation system:** Minimum Hands-on required	Within 24hrs (Raw data to CSM report)	COSMIC, TCGA, ICGC, FusionDB, OncoDB, ClinVar, gnomAD 1000Genome, dbSNP

Scan for Sample Report

Gene & Drug details

Type of Cancer	Gene	Drug
Non–small cell lung cancer (NSCLC)	ALK	Alectinib, crizotinib, ceritinib, lorlatinib, dabrafenib+trametinib
Non–small cell lung cancer (NSCLC)	BRAF	Dabrafenib+trametinib
Non–small cell lung cancer (NSCLC)	EGFR	Erlotinib, Osimertinib, gefitinib, erlotinib, afatinib, mobocertinib, amivantamb
Non–small cell lung cancer (NSCLC)	ERBB2	Fam-trastuzumab deruxtecan-nxki

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Ordering Details

Commercial Name	Cat No.	Pack Size
ctDNA Lung Panel	G2MCTLP13001-ill	96T
	G2MCTLP13001-MG	96T

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