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Pillar® ONCO/Reveal™ Lung cfDNA Panel

The ONCO/Reveal Lung cfDNA Panel is a robust NGS assay that interrogates 17 lung cancer genes of interest*. The panel includes UIDs[†] to increase sensitivity and is specifically designed for cell-free DNA samples (liquid biopsies). The assay uses proprietary Stem-Loop Inhibition-Mediated amplification (SLIMamp[®]) technology, a tiled amplicon-based library prep chemistry for efficient single-tube target enrichment.

ONCO/Reveal Lung cfDNA Panel (17 genes)

AKT1	DDR2	ERBB4	KRAS	NRAS	STK11
ALK	EGFR	FGFR1	MAP2K1	PIK3CA	TP53
BRAF	ERBB2	FGFR3	MET	PTEN	

Simple NGS library prep workflow

Maintain control of samples and results with single-tube, tiled amplification that can be performed in-house by any NGS lab

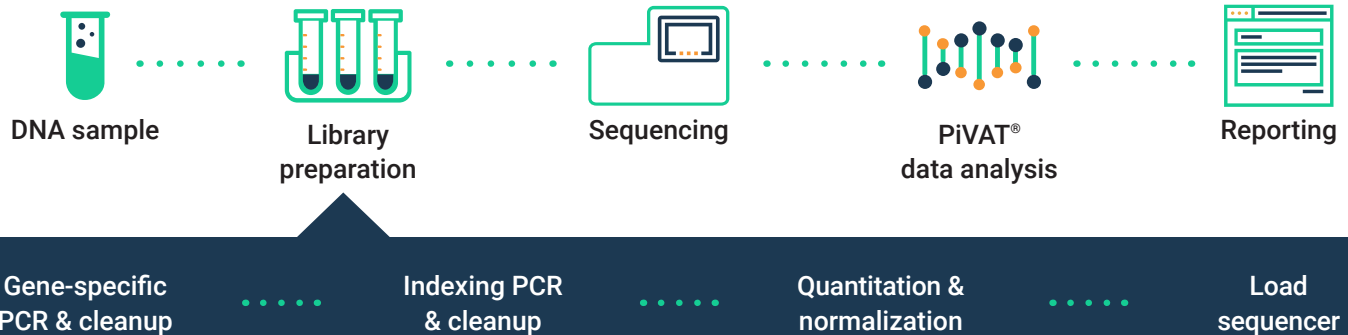
Sensitive and robust chemistry

Achieve variant detection as low as 0.1% VAF with UIDs even with limited DNA input or poor sample quality

Reduced fully-loaded lab costs

Improve lab efficiency with quicker turnaround time and reduced “no calls”, repeat testing, and difficult interpretation decisions

Simple, one-day workflow



*Content is based on data from ongoing clinical trials along with sources that include the College of American Pathologists (CAP), the Associations for Molecular Pathology (AMP), the National Comprehensive Cancer Network (NCCN), and the Catalog of Somatic Mutations in Cancer (COSMIC) database.
[†]UID, unique ID; also known as unique molecular ID (UMI); [‡]VAF, variant allele frequency

Panel specifications

Enrichment chemistry	Multiplex PCR using tiled amplicons
Number of pools	1 pool
Number of genes/amplicons	17/81
Total panel size	8kb
Variant types	SNVs, indels
Average amplicon size	147bp
Recommended DNA input range	15ng to 50ng
Sample type	Cell-free DNA
Sensitivity	As low as 0.1% VAF
% on-target aligned reads	93.2% ± 2.9%
Coverage uniformity (% targets with >0.2X mean coverage)	99.8% ± 0.7%
Total assay time (from DNA to sequencer)	<9-10 hours
Sequencing platforms	Illumina®; assays are coming soon for MGISEQ™ and Ion Torrent™ platforms

Sensitive variant detection

Cell-free reference DNA (Horizon Discovery) was tested at a nominal level of 0.1% and 0.25%. The ONCO/Reveal Lung cfDNA Panel demonstrated high sensitivity down to 0.1% VAF.

Input DNA was comparable to 20ng of actual cfDNA.

Gene	Variant	Exon	0.1% (nominal)	0.25% (nominal)	Wild type
EGFR	Δ E746-A750	19	0.11%	0.34%	0.0%
EGFR	V769-D770insASV	20	0.28%	0.23%	0.0%
EGFR	T790M	20	0.12%	0.23%	0.0%
EGFR	L858R	21	0.15%	0.19%	0.0%
KRAS	G12D	2	0.20%	0.10%	0.0%
NRAS	A59T	3	0.09%	0.41%	0.0%
NRAS	Q61K	3	0.09%	0.50%	0.0%
PIK3CA	E545K	10	0.22%	0.67%	0.0%

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