LUCENCE

AmpliMark™

A proprietary ultrasensitive amplicon-based enrichment chemistry ('molecular watermarking') for sequencing of circulating tumor DNA (ctDNA). This chemistry powers our flagship liquid biopsy test LiquidHALLMARK®, that profiles tumor mutations for decision-making.

Amplicon-based chemistry for NGS

Performance parameters	**Amplicon-based**	Hybrid-capture
On-target capture	**85 - 90%**	70 - 80%
Limit of detection	**0.1 - 0.5%**	0.2 - 1%
Input DNA (ng)	**10 - 20**	30 - 50
Workflow	**< 1 day**	1 -2 days

Due to the specificity of primer design, amplicon next generation sequencing has powerful on-target capture rates and the ability to capture difficult-to-enrich regions.

Amplicon-based approaches offer a simpler, faster workflow with unmatched PCR specificity, allowing enrichment of target gene regions from low sample input amounts.

- High rate of on-target capture (> 85%) to amplify genomic regions of clinical interest into highly uniform (> 97%) amplicons for sequencing.
- High accuracy (> 99.9%) of data achieved by combining robust statistical and deep learning (transformer) models that differentiate true mutational signals from background noise.
- Error suppression through the use of molecular barcoding achieves error-free sequencing data with high information-density for the sensitive detection (LOD of 0.1% VAF) of rare mutant DNA molecules in liquid biopsies.
- Simultaneous detection of novel fusions by modified primer design that support the discovery of crucial clinical insights.

The AmpliMark advantage

Performance parameters	**AmpliMark™**	Other amplicon-based
Uniformity of amplicons	**> 97%**	> 90%
No. of genes targeted	**80**	28 - 52
Limit of detection	**0.1 %**	0.25 - 0.5%
Detection of novel fusions	**Yes**	Variable
Detection of MSI	**Yes**	No
Detection of cancer-driving viruses	**Yes**	No

Real-world applications

A 'Plasma-First' Molecular Profiling Approach Complements Actionable Mutation Detection in Suspected Lung Cancer Patients
(Mong et al. IASLC 2020. Abstract VP01.39.)

'Clinical utility of a liquid biopsy diagnostic approach in lung cancer using amplicon-based next-generation sequencing in parallel with allele-specific PCR'
(Choudhury et al. J Clin Oncol. 2020.38.15_suppl.e21516)

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