LUCENCE

Rapid TissueMARK™

Detecting FDA-Approved Biomarkers For Additional 1 in 6 Patients VS Conventional NGS[1]

50% of eligible cancer patients miss out on targeted therapies from traditional tissue profiling approaches[2]

Rapid TissueMARK™ delivers accurate and affordable detection of over 50 DNA/RNA genomic alterations with microsatellite instability (MSI) in FFPE tissue

Covering FDA and all CDL-approved[3] genetic biomarkers for 7 major cancer types

From Asia's first company to obtain US government Medicare coverage for NGS testing technology[4]

7	18%	5
Individual Tumor Types	More FDA-Approved Biomarkers vs Conventional NGS[5]	Working Days

Benefits of Rapid TissueMARK™

- **34%** more cost savings from combining mutation NGS and MSI for immunotherapy[6]
- **Save** precious samples, **Save** slide-cutting cost[7]
- **0.9%** (9 in 1,000) detection limit for superior biomarker detection versus conventional and less accurate 5%

Cancer Types Covered

Common Solid tumor types including Lung, Breast, Ovarian, Colon, Pancreas, Bile Duct, Prostate

Suitable for

- Newly diagnosed patients
- Recurrent and metastatic disease
- Patients who are not responding well to current standard-of-care treatments

[1] Data on file - Comparing 0.9% versus conventional 5% threshold.
[2] Sadik et al. J Clin Oncol Precision Oncology. (2022)
[3] https://www.moh.gov.sg/home/our-healthcare-system/medishield-life/what-is-medishield-life/what-medishield-life-benefits/cancer-drug-list
[4] https://www.businesstimes.com.sg/startups-tech/singapores-lucence-secures-us-medicare-approval-its-cancer-tests.
[5] Data on file - Comparing 0.9% versus conventional 5% threshold.
[6] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9330154/. Average test is $1778 + MSI $600 (add-on). Rapid TissueMARK includes MSI by default.
[7] No splitting of samples required.

List of FDA-Approved Matched Therapy

Cancer Type	Biomarker	FDA-approved Matched Therapy
Lung cancer	*ALK*	Alectinib, Brigatinib, Ceritinib, Crizotinib, Lorlatinib
	BRAF	Binimetinib, Dabrafenib, Encorafenib, Trametinib,
	EGFR	Afatinib, Amivantamab-vmjw, Dacomitinib, Erlotinib, Gefitinib, Osimertinib
	ERBB2	Trastuzumab Deruxtecan
	ROS1	Crizotinib, Entrectinib, Repotrectinib
	RET	Pralsetinib, Selpercatinib
	MET	Tepotinib, Capmatinib
	KRAS	Sotorasib
Breast cancer	*AKT1*	Capivasertib
	BRCA1, BRCA2	Olaparib, Talazoparib
	PIK3CA	Alpelisib, Capivasertib
	ESR1	Elacestrant
	ERBB2 (HER2)	Lapatinib, Margetuximab, Neratinib, Pertuzumab, Trastuzumab Emtansine, Trastuzumab, Tucatinib
	PTEN	Capivasertib
Ovarian cancer	*BRCA1, BRCA2*	Niraparib, Olaparib, Rucaparib
Colorectal cancer	*BRAF*	Cetuximab, Encorafenib
	ERBB2	Trastuzumab, Tucatinib
	RAS (Wild-type)	Cetuximab, Panitumumab
Pancreatic cancer	*BRCA1, BRCA2*	Olaparib
Cholangiocarcinoma	*FGFR2*	Infigratinib, Pemigatinib
	IDH1	Ivosidenib
Prostate cancer	*BRCA1, BRCA2*	Olaparib, Rucaparib, Talazoparib
Pan-cancer targets[8]	*NTRK1, NTRK2, NTRK3,*	Entrectinib, Larotrectinib
	BRAF	Dabrafenib, Trametinib
	RET	Selpercatinib
	MSI	Pembrolizumab

**For additional biomarkers : TMB, HRR gene coverage beyond BRCA1/2, and 99.9% coverage of all OncoKB actionable mutations - please upgrade to UNITED™ 600.*

Test Specifications

Methodology	Ultra-deep next-generation sequencing
Genomic alterations profiled	SNVs, CNVs, indels, fusions, splice variants, MSI
Sample requirement	FFPE tumor tissue
Turnaround time	5 working days

	Limit of Detection	Sensitivity	Specificity
Single Nucleotide Variants (SNVs)	0.9%	100%	100%
Insertions/Deletions (Indels)	1.5%	100%	100%
Fusions (RNA)	10 copies	100%	100%

• Results tested at the stated mutant allele frequencies using reference standards, and FFPE clinical samples.
[8] Include drugs with accelerated approval.

Focused genes sub-panels for targeted cancer types

All sub-panels include microsatellite instability (MSI) and RNA fusion testing.

Lung

ALK[#]	*CDKN2A*[#]	*FGFR2*[#]	*MTOR*	*NTRK3*	*RB1*[#]	*STK11*
ARAF	*CTNNB1*	*FGFR3*[#]	*NF1*	*PDGFRA*[#]	*RET*	*TP53*[#1]
BRAF[#]	*EGFR*[†#]	*KEAP1*[1]	*NFE2L2*	*PIK3CA*[#1]	*RIT1*	*U2AF1*
BRCA1[#1]	*ERBB2*[#]	*KRAS*[#]	*NRAS*[#]	*PIK3R1*	*ROS1*	
BRCA2[#1]	*FGFR1*[#]	*MET*[#]	*NTRK1*	*PTEN*[#^]	*SF3B1*	

Breast & Ovarian

AKT1[1]	*BRCA2*[#1]	*ESR1*[#]	*GATA3*	*NTRK1*	*RB1*[#]	
APC	*CDH1*	*FBXW7*[#]	*GNAS*	*NTRK3*	*RET*	
ATM[#]	*CDK6*[#1]	*FGFR1*[#]	*KRAS*[#]	*PIK3CA*[#1]	*SF3B1*	
BRAF[#]	*CTNNB1*	*FGFR2*[#]	*MYC*[#]	*PIK3R1*	*TP53*[#1]	
BRCA1[#1]	*ERBB2*	*FGFR3*[#]	*NF1*	*PTEN*[#^]		

Colon

APC	*CTNNB1*	*FGRF1*[#]	*KRAS*[#]	*NRAS*[#]	*PIK3R1*	*SMAD4*[# 1]
ATM[#]	*EGFR*[†#]	*FGRF2*[#]	*MLH1*	*NTRK1*	*PTEN*[#^]	*TP53*[#1]
BRAF[#]	*ERBB2*[#]	*FGRF3*[#]	*MTOR*	*NTRK3*	*RAF1*	
CREBBP	*FBXW7*[#]	*JAK1*	*MYC*[#]	*PIK3CA*[#1]	*RET*	

Pancreas & Bile Duct

AKT1[1]	*BRCA2*[#1]	*ERBB2*[#]	*HRAS*	*MYC*[#]	*PIK3R1*	*TP53*[#1]
APC	*CCND1*[#]	*FGFR1*[#]	*IDH1*	*NRAS*[#]	*PTEN*[#^]	*VHL*
ATM[#]	*CCND2*[#1]	*FGFR2*[#]	*IDH2*	*NTRK1*	*RET*	
BRAF[#]	*CDKN2A*[#]	*FGFR3*[#]	*KRAS*[#]	*NTRK3*	*STK11*	
BRCA[1]	*CTNNB1*	*GNAS*	*MET*	*PIK3CA*	*SMAD4*	

Prostate

AR[#]	*BRCA1*[#1]	*FGFR1*[#]	*KRAS*[#]	*NTRK3*	*PTEN*[#^]	*SPOP*
ATM[#]	*BRCA2*[#1]	*FGFR2*[#]	*MYC*[#]	*PIK3CA*[#1]	*RB1*[#]	*TP53*[#1]
BRAF[#]	*ERBB2*[#]	*FGFR3*[#]	*NTRK1*	*PIK3R1*	*RET*	

RNA Fusions

ALK	*DNAJB1-PRKACA*	*ETV4*	*MET (including exon 14 skipping)*	*NUTM1*	*RSPO3*	*TMPRSS2*
AR (AR-3/4/7/9 splice variant)	*EGFR*[†]	*ETV5*	*MYB-NFIB*	*PAX3-FOXO1*	*SLC45A3*	
AXL-MBIP	*ERBB4*	*FGFR1*	*NRG1*	*PAX8-PPARG*	*SSX1*	
BRAF	*ERG*	*FGFR2*	*NTRK1*	*RET*	*SSX2*	
CLIP1-LTK	*ESR1*	*FGFR3*	*NTRK2*	*ROS1*	*TFE3*	
CTNNB1-PLAG1	*ETV1*	*FLI1*	*NTRK3*	*RSPO2*	*THADA*	

MSI

BAT25	BAT26	NR21	NR24	NR27	MONO27

*Targeted regions selected to maximize detection of known hotspot mutations, in all clinically relevant exons of tested genes. †Includes sequencing of EGFR kinase and extracellular domain mutations. # Includes detection of gene copy number alterations. ^Full coverage [1]>97% coverage of coding exons.

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