

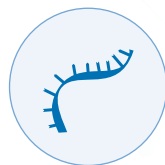
Comprehensive Tumor Profiling

Caris Life Sciences' comprehensive molecular profiling approach to assess DNA, RNA and proteins reveals a molecular blueprint to guide more precise and individualized treatment decisions from among 75+ FDA-approved therapies.



DNA

Whole Exome Sequencing
SNVs, Indels & CNAs



RNA

Whole Transcriptome Sequencing
Gene Fusions & Variant Transcripts



Protein

Immunohistochemistry
Tumor-Relevant Protein Biomarkers

Technical Specifications

Sufficient tumor content (>20% tumor nuclei) must be present to complete all analyses. If you have any questions, please contact Customer Support at (888) 979-8669.

Technical Information	IHC	CISH
Sample Requirements <i>(see requisition for full details)</i>	1 unstained slide at 4µm thickness from FFPE block, with evaluable tumor present, per IHC test	1 unstained slide at 4µm thickness from FFPE block, with at least 100 evaluable tumor cells present, per CISH test
Sensitivity/Specificity	>95%	>95%

Technical Information	NGS (Whole Exome – DNA)	NGS (Whole Transcriptome – RNA)
Sample Requirements	FFPE block or 10 unstained slides with a minimum of >20% malignant origin for DNA and 10% malignant origin for RNA. Needle biopsy is also acceptable (4-6 cores).	
Tumor Enrichment (when necessary)	Microdissection to isolate and increase the number of cancer cells to improve test performance and increase the chance for successful testing from small tumor samples	
Number of Genes	~22,000 genes	
Average Depth of Coverage (DNA) Average Read Count (RNA)	700x-1000x clinical/reportable genes	50-60 million
Positive Percent Agreement (PPA)	>97% for base substitutions at ≥ 5% mutant allele frequency; >99% for indels at ≥ 5% mutant allele frequency; >95% for copy number alterations (amplifications ≥ 6 copies)	>96%
Negative Percent Agreement (NPA)	>99%	>99%
Viruses*	HPV 16 & 18 (Head & Neck, Anal, Genital, CUP)	
Genomic Signatures/Other	Loss of Heterozygosity (LOH) Microsatellite Instability (MSI) Tumor Mutational Burden (TMB) Human Leukocyte Antigen (HLA) Genotype*	
	Caris FOLFIRSTai™* Caris GPSai™*	

Biomarker Analysis by Tumor Type

The information below details the biomarkers analyzed by technology for the tumor type submitted. Before ordering testing services, please refer to the profile menu online (www.CarisLifeSciences.com/profiling-menu) to view the most up-to-date listing of biomarkers that will be performed. Tests may vary if insufficient tumor samples are submitted.

MI Profile™					
Tumor Type	Immunohistochemistry (IHC)	Other	MI Tumor Seek™		
			Whole Exome Sequencing (WES)		Whole Transcriptome Sequencing (WTS)
			DNA Alterations	Genomic Signatures/Other	RNA Alterations
Bladder	MMR, PD-L1 (SP142 and 22c3)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Breast	AR, ER, Her2/Neu, MMR, PD-L1 (22c3), PR, PTEN		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Cancer of Unknown Primary – Female	AR, ER, Her2/Neu, MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Cancer of Unknown Primary – Male	AR, Her2/Neu, MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Cervical	ER, MMR, PD-L1 (22c3), PR		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Cholangiocarcinoma/Hepatobiliary	Her2/Neu, MMR, PD-L1 (SP142)	Her2 (Chromogenic in situ Hybridization)	Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Colorectal and Small Intestinal	Her2/Neu, MMR, PD-L1 (SP142), PTEN		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*, FOLFIRSTai*	Fusions, Variant Transcripts
Endometrial	ER, MMR, PD-L1 (SP142), PR, PTEN		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Esophageal Cancer	Her2/Neu, MMR, PD-L1 (22c3)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Gastric/GEJ	Her2/Neu, MMR, PD-L1 (28-8)	EBER (Chromogenic in situ Hybridization)	Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
GIST	MMR, PD-L1 (SP142), PTEN		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Glioma	MMR, PD-L1 (SP142)	MGMT Methylation (Pyrosequencing)	Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Head & Neck	MMR, p16, PD-L1 (22c3)	EBER, HPV (Chromogenic in situ Hybridization), HPV reflex to confirm p16 result	Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Kidney	MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Lymphoma/Leukemia			Mutations, Indels, CNA	TMB, HLA*	Fusions, Variant Transcripts
Melanoma	MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Merkel Cell	MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Neuroendocrine	MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Non-Small Cell Lung	ALK*, MMR, PD-L1 (22c3, 28-8, SP263 and SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Ovarian	ER, MMR, PD-L1 (22c3), PR		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Pancreatic	MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Prostate	AR, MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Salivary Gland	AR, Her2/Neu, MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Sarcoma	MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Small Cell Lung	MMR, PD-L1 (22c3)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Thyroid	MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Uterine Serous	ER, Her2/Neu, MMR, PD-L1 (SP142), PR, PTEN	Her2 (Chromogenic in situ Hybridization)	Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Vulvar Cancer (SCC)	MMR, PD-L1 (22c3)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts
Other Tumors	MMR, PD-L1 (SP142)		Mutations, Indels, CNA	LOH, MSI, TMB, HLA*	Fusions, Variant Transcripts

MMR = Mismatch Repair proteins: MLH1, MSH2, MSH6, PMS2

*ALK IHC only performed for NSCLC adenocarcinoma.

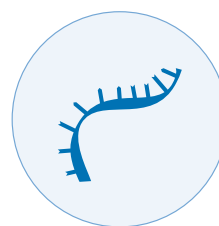
Caris Molecular Testing – Complete Gene Coverage

As the pioneer in precision medicine, Caris was the first to provide WES and WTS for every patient. All molecular profiling orders include next-generation sequencing of all 22,000 genes.



Whole Exome Sequencing (WES) DNA

- 22,000 genes
- 700x-1000x clinical/reportable genes
- SNVs, Indels and CNAs
- 250,000 evenly-spaced genomic SNP
- Viruses*
- Genomic signatures:
 - Loss of Heterozygosity (LOH)
 - Microsatellite Instability (MSI)
 - Tumor Mutational Burden (TMB)
- Other:
 - HLA Genotype*



Whole Transcriptome Sequencing (WTS) RNA

- 22,000 genes
- 50-60 million read count
- Gene fusions and variant transcripts
- Novel translocation detection independent of intronic breakpoint

Gene List

Listed below are the genes most commonly associated with cancer. Full 22,000 genes search is available on CarisLifeSciences.com.

ABL1	BCR	CSF1R	FANCC	GNAQ	LZTR1	MUTYH	PIK3CB	RAD51D	SOCS1
ABL	BLM	CTNNA1	FANCD2	GNAS	MAML2	MYB	PIK3R1	RAD54L	SPEN
ACVR1	BMPR1A	CTNNB1	FANCE	H3F3A	MAP2K1	MYC	PIK3R2	RAF1	SPOP
AIP	BRAF	CXCR4	FANCF	H3F3B	MAP2K2	MYCN	PIM1	RASA1	SRC
AKT1	BRCA1	CYLD	FANCG	HDAC1	MAP2K4	MYD88	PKN1	RB1	SSBP1
AKT2	BRC A2	CYP17A1	FANCI	HIST1H3B	MAP3K1	NBN	PMS1	RELA	STAG2
AKT3	BRD3	DDR2	FANCL	HIST1H3C	MAPK1	NF1	PMS2	RET	STAT3
ALK	BRD4	DICER1	FANCM	HNF1A	MAPK3	NF2	POLD1	RHOA	STK11
AMER1	BRIP1	DNMT3A	FAS	HQXB13	MAST1	NFE2L2	POLD2	RNF43	SUFU
APC	BTK	EGFR	FAT1	HRAS	MAST2	NFKBIA	POLD3	ROS1	TERT
AR	CALR	EGFR vIII	FBXW7	IDH1	MAX	NOTCH1	POLD4	RPA1	TET2
ARAF	CARD11	EGLN1	FGFR1	IDH2	MED12	NOTCH2	POLE	RPA2	TFE3
ARHGAP26	CASP8	ELF3	FGFR2	INSR	MEF2B	NPM1	POLQ	RPA3	TFEB
ARHGAP35	CBFB	EP300	FGFR3	IRF4	MEN1	NRAS	POT1	RPA4	THADA
ARID1A	CCND1	EPHA2	FGFR4	JAK1	MET	NRG1	PPARG	RSP02	TMEM127
ARID2	CCND2	ERBB2	FGR	JAK2	MET Exon 14 Skipping	NSD1	PPP2R1A	RSP03	TMPRSS2
AR-V7	CCND3	ERBB3	FH	JAK3	MGA	NTHL1	PPP2R2A	RUNX1	TNFAIP3
ASXL1	CD274	ERBB4	FLCN	KDM5C	MGMT	NTRK1	PRDM1	SDHA	TNFRSF14
ATM	CD79B	ERCC2	FLT1	KDM6A	MIF	NTRK2	PRKACA	SDHAF2	TP53
ATR	CDC73	ERG	FLT3	KDR	MLH1	NTRK3	PRKAR1A	SDHB	TRAF7
ATRX	CDH1	ESR1	FLT4	KEAP1	MLH3	NUMBL	PRKCA	SDHC	TRAF1
AXIN1	CDK12	ETV1	FOXA1	KIF1B	MPL	NUTM1	PRKCB	SDHD	TSC2
AXIN2	CDK4	ETV4	FOXL2	KIT	MRE11	PALB2	PTCH1	SETD2	U2AF
AXL	CDK6	ETV5	FUBP1	KLF4	MSH2	PARP1	PTEN	SF3B1	VHL
B2M	CDKN1B	ETV6	FYN	KMT2A	MSH3	PBRM1	PTPN11	SMAD2	WRN
BAP1	CDKN2A	EWSR1	GALNT12	KMT2C	MSH4	PCNA	RABL3	SMAD4	WT1
BARD1	CHEK1	EXO1	GATA3	KMT2D	MSMB	PDGFRA	RAC1	SMARCA4	XPO1
BCL2	CHEK2	EZH2	GLI2	KRAS	MST1R	PDGFRB	RAD50	SMARCB1	XRCC1
BCL9	CIC	FANCA	LCK	GNA11	LCK	PHOX2B	RAD51B	SMARCE1	XRCC2
BCOR	CREBBP	FANCB	GNA13	LYN	MUSK	PIK3CA	RAD51C	SMO	YES1

* Not available in all locations.

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