

Caris Molecular Intelligence® Associations List

The list below details the biomarkers assessed, technology platforms utilized and associated therapies or clinical trials. **Biomarkers and therapy associations may vary by the tumor type submitted.** The current and definitive list menu can be found online at www.CarisMolecularIntelligence.com/profiling-menu. *Individual assay results are always included with the final report.*

Agent	Biomarker	Platform
afatinib <small>(assoc. in NSCLC only)</small>	EGFR	NGS Mutation
afatinib + cetuximab <small>(combination assoc. in NSCLC only)</small>	EGFR T790M	NGS Mutation
alectinib, brigatinib, ceritinib	ALK	IHC; NGS Fusion Analysis (RNA)
avelumab <small>(assoc. in Bladder (non-urothelial) and Merkel cell only)</small>	PD-L1	IHC
cabozantinib	MET	NGS Fusion Analysis (RNA)
	RET	NGS Fusion Analysis (RNA)
carboplatin, cisplatin, oxaliplatin	ATM	NGS Mutation
	BRCA1	NGS Mutation
	BRCA2	NGS Mutation
ceritinib	ALK	IHC; NGS Fusion Analysis (RNA)
	ROS1 <small>(assoc. in NSCLC only)</small>	IHC; NGS Fusion Analysis (RNA)
cetuximab, panitumumab ¹ <small>(assoc. in CRC only)</small>	BRAF	NGS Mutation
	KRAS	NGS Mutation
	NRAS	NGS Mutation
	PIK3CA	NGS Mutation
	PTEN	IHC
crizotinib	ALK	IHC; NGS Mutation (DNA) & Fusion Analysis (RNA)
	MET <small>(assoc. in Lung only)</small>	NGS Mutation, CNA & Fusion Analysis (RNA)
	ROS1	NGS Fusion Analysis (RNA)
dabrafenib, cobimetinib, vemurafenib, trametinib ¹	BRAF	NGS Mutation
dabrafenib + trametinib	BRAF	NGS Mutation (AnaplasticThyroid and NSCLC only)
dacarbazine, temozolomide	MGMT-Methylation	Pyrosequencing
	IDH1 <small>(assoc. in High Grade Glioma only)</small>	NGS Mutation
doxorubicin, liposomal-doxorubicin, epirubicin	TOP2A	CISH (Breast only)
durvalumab <small>(assoc. in NSCLC only)</small>	PD-L1	IHC
encorafenib + binimetinib	BRAF	NGS Mutation (Melanoma only)
enzalutamide, bicalutamide	AR <small>(assoc. in TNBC only)</small>	IHC
erlotinib, gefitinib <small>(assoc. in NSCLC only)</small>	EGFR	NGS Mutation
	KRAS	NGS Mutation
	PIK3CA	NGS Mutation
	MET	NGS CNA (DNA)
	PTEN	IHC

IHC: Immunohistochemistry **CISH:** Chromogenic *in situ* Hybridization **NGS:** Next-Generation Sequencing **CNA:** Copy Number Alteration by NGS
Note: in certain instances, some biomarkers included in MI Profile or genes ordered individually will not associate with commercially available cancer therapies or clinical trials.

¹ In CRC, BRAF-targeted therapy is reported in combination with EGFR-targeted therapy.

² Hormone therapies may include: tamoxifen, toremifene, fulvestrant, letrozole, anastrozole, exemestane, megestrol acetate, leuprolide, goserelin, bicalutamide, flutamide, abiraterone, enzalutamide, triptorelin, abarelix, degarelix.

³ TRK IHC may be performed in some tumor types. Positive results will be reflexed to fusion analysis.

⁴ Immune checkpoint therapies may include: atezolizumab, nivolumab, pembrolizumab.

Agent	Biomarker	Platform
everolimus, temsirolimus	ER <small>(assoc. in Breast only)</small>	IHC
	PIK3CA <small>(excluding CRC)</small>	NGS Mutation
exemestane + everolimus, fulvestrant, palbociclib combination therapy	ER	IHC
	ESR1	NGS Mutation
hormone therapies ²	AR	IHC
	ER	IHC
	PR	IHC
imatinib	KIT	NGS Mutation
	PDGFRA	NGS Mutation
irinotecan + (cetuximab or panitumumab) + vemurafenib ¹ <small>(assoc. in CRC only)</small>	BRAF V600E	NGS Mutation
lapatinib, neratinib, pertuzumab, T-DM1	ERBB2 (Her2)	CISH, IHC & NGS CNA (DNA)
larotrectinib ³	NTRK1/2/3	Fusion Analysis (RNA) & NGS Mutation (resistance)
immune checkpoint therapies ⁴	PD-L1	IHC
nivolumab <small>(assoc. in CRC only)</small> , nivolumab + ipilimumab <small>(assoc. in CRC only)</small> , pembrolizumab	MSI	NGS Mutation
	MMR Deficiency	IHC
niraparib, olaparib, rucaparib	ATM <small>(assoc. in Prostate only)</small>	NGS Mutation
	BRCA1 ¹	
	BRCA2 ¹	
osimertinib <small>(assoc. in NSCLC only)</small>	EGFR T790M, EGFR L858R, Exon 19del and EGFR C797S	NGS Mutation
palbociclib, abemaciclib, ribociclib <small>(assoc. in Breast only)</small>	ER	IHC
	ERBB2 (Her2)	IHC
sunitinib <small>(assoc. in GIST only)</small>	KIT	NGS Mutation
T-DM1 <small>(assoc. in NSCLC only)</small>	ERBB2 (HER2)	NGS Mutation
trastuzumab	ERBB2 (HER2)	CISH, IHC, NGS Mutation (NSCLC only), CNA (DNA)
	PTEN <small>(assoc. in Breast only)</small>	IHC
	PIK3CA <small>(assoc. in Breast only)</small>	NGS Mutation
vandetanib	RET	NGS Mutation (DNA) & Fusion Analysis (RNA)

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.CarisMolecularIntelligence.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.

Tumor Type	Immunohistochemistry (IHC)	MI Profile™			Other
		Next-Generation Sequencing (NGS) <i>(see reverse for gene list)</i>			
		DNA	Genomic Signatures (DNA)	RNA	
Bladder	MMR, PD-L1	Mutation, CNA Analysis	MSI, TMB	Fusion Analysis	
Breast	AR, ER, Her2/Neu, MMR, PD-L1, PR, PTEN, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		Her2, TOP2A (Chromogenic <i>in situ</i> Hybridization)
Cancer of Unknown Primary	MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Cervical	ER, MMR, PD-L1, PR, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Cholangiocarcinoma/Hepatobiliary	Her2/Neu, MMR, PD-L1	Mutation, CNA Analysis	MSI, TMB	Fusion Analysis	Her2 (Chromogenic <i>in situ</i> Hybridization)
Colorectal and Small Intestinal	MMR, PD-L1, PTEN, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Endometrial	ER, MMR, PD-L1, PR, PTEN, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Esophageal SCC	Her2/Neu, MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Gastric	Her2/Neu, MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		Her2 (Chromogenic <i>in situ</i> Hybridization)
GIST	MMR, PD-L1, PTEN, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Glioma	MMR, PD-L1	Mutation, CNA Analysis	MSI, TMB	Fusion Analysis	MGMT Methylation (Pyrosequencing)
Head & Neck	MMR, p16, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		HPV (Chromogenic <i>in situ</i> Hybridization), reflex to confirm p16 result
Kidney	MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Melanoma	MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Merkel Cell	MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Neuroendocrine/Small Cell Lung	MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Non-Small Cell Lung	ALK, MMR, PD-L1, PTEN	Mutation, CNA Analysis	MSI, TMB	Fusion Analysis	
Ovarian	ER, MMR, PD-L1, PR, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Pancreatic	MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Prostate	AR, MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Salivary Gland	AR, Her2/Neu, MMR, PD-L1	Mutation, CNA Analysis	MSI, TMB	Fusion Analysis	
Sarcoma	MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		
Thyroid	MMR, PD-L1	Mutation, CNA Analysis	MSI, TMB	Fusion Analysis	
Uterine Serous	ER, Her2/Neu, MMR, PD-L1, PR, PTEN, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		Her2 (Chromogenic <i>in situ</i> Hybridization)
Other Tumors	MMR, PD-L1, TRKA/B/C	Mutation, CNA Analysis	MSI, TMB		

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

For PD-L1 IHC testing, Dako antibody 22c3 is run for all NSCLC, Cervical, Gastric and Gastroesophageal Junction (GEJ) cancers. 22c3 is added to Bladder cancers with a CPS score, run side-by-side with SP142. Dako antibody 22c3 is available upon request for other tumor types. Dako antibody 28.8 is run for all Head & Neck and Melanoma cancers. For TRK IHC positive results, reflex Fusion testing will be performed.