AVENIO ctDNA and Tumor Tissue Surveillance Panel V2

This 197-gene research panel, included in the AVENIO ctDNA Surveillance Kit V2 and the AVENIO Tumor Tissue Surveillance Kit V2, is specially designed and optimized for monitoring of tumor burden in lung cancer and colorectal cancer research over time. Included in this panel are biomarkers associated with various cancer types from 17 genes in the U.S. National Comprehensive Cancer (NCCN) Guidelines.*

Gene	All Coding Regions	CRC	Lung	Breast	Gastric	Glioma	Melanoma	Ovarian	Thyroid	Pancreatic	Other Cancers	SNV	Indel‡	Fusion§	CNV§
ALK			●								ALCL, Large B-Cell Lymphoma, Neuroblastoma, Inflammatory Myofibroblastic Tumor, Spitzoid Tumor, Rhabomyosarcoma	●	●	●	
APC		●			●	●				●	HCC, Medulloblastoma, Desmoid	●	●		
BRAF		●	●			●	●	●	●		Borderline Ovarian, Cholangiocarcinoma, Spitzoid Tumor, Pancreas Acinar Carcinoma, Melanocytic Nevus, GIST	●	●		
BRCA1	●			●				●		●		●			
BRCA2	●			●		●		●		●		●			
DPYD**		●										●			
EGFR	●		●			●						●	●		●
ERBB2	●	●†	●	●	●	●		●				●	●		●
KIT							●				AML, Testicular Germ Cell Tumors, GIST, Thymic Carcinoma	●	●		
KRAS	●	●	●		●			●	●	●	AML, Juvenile Myelomonocytic Leukemia	●			
MET	●		●								Head and Neck Squamous Cell, HCC, Papillary RCC	●	●		●
NRAS		●	●				●		●		MM, AML, Juvenile Myelomonocytic Leukemia	●			
PDGFRA											GIST, Hypereosinophilic Syndrome	●			
RET		●	●						●		Pheochromocytoma, Spitzoid Tumor, Mucosal Neuroma	●		●	
ROS1			●		●	●					Spitzoid Tumor, Cholangiocarcinoma, Borderline Ovarian	●		●	
TP53	●	●	●	●	●	●		●		●	Various Leukemias, Adenocortical, Basal Cell Carcinoma, Esophageal, Soft Tissue and Bone Sarcomas, Head and Neck SCC	●	●§§		
UGT1A1††		●										●			

All coding regions are based on the longest transcript from Ensembl build 82.

* National Comprehensive Cancer Network. http://www.nccn.org. Accessed on August 2, 2023

** Inactivating mutations are associated with sensitivity to fluoropyrimidines.

† Kavuri et al. Cancer Discovery 8: 832-41 (2015). PMID: 26243863.

†† Certain variants are associated with sensitivity to irinotecan.

‡ Indels are limited to variants in a pre-specified list of positions, referred to as "Loci of Interest", except for EGFR exon 19 long deletions, EGFR exon 20 long insertions and MET long insertions, which are not restricted to a pre-defined set of Indels.

§ Detection of Fusions and CNVs are limited to variants in a pre-specified list of positions, referred to as "Loci of Interest" in the AVENIO analysis software.

§§ Indel for TP53 is called for tissue only, not plasma.

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Frequently mutated select regions of these additional genes are included for tumor burden monitoring (n=180)

ABCC5	CDKN2A	DOCK3	GRIA2	ITGA10	MAP7D3	PCDH15	SLITRK1	USH2A
ABCG2	CHRM2	DSC3	GRIK3	ITSN1	MKRN3	PDYN	SLITRK4	USP29
ACTN2	CNTN5	DSCAM	GRIN2B	KCNA5	MMP16	PDZRN3	SLITRK5	VPS13B
ADAMTS12	CNTNAP2	EGFLAM	GRIN3B	KCNB2	MTX1	PGK2	SLPI	WBSCR17
ADAMTS16	CPXCR1	EPHA5	GRM1	KCNC2	MYH7	PHACTR1	SMAD4	WIPF1
ARFGEF1	CPZ	EPHA6	GRM5	KCNJ3	MYT1L	PIK3CA	SOX9	WSCD2
ASTN1	CRMP1	EYS	GRM8	KCTD8	NAV3	PIK3CG	SPTA1	ZC3H12A
ASTN2	CSMD1	FAM135B	GSX1	KEAP1	NEUROD4	PKHD1L1	ST6GALNAC3	ZFPM2
AVPR1A	CSMD3	FAM151A	HACD1	KIAA1211	NFE2L2	POLE	STK11	ZIC1
BCHE	CTNNB1	FAM71B	HCN1	KIF17	NLGN4X	POM121L12	SV2A	ZIC4
BPIFB4	CTNND2	FAT1	HCRTR2	KIF19	NLRP3	PREX1	T	ZNF521
BRINP2	CYBB	FBN2	HEBP1	KLHL31	NMUR1	RALYL	THSD7A	ZSCAN1
BRINP3	DCAF12L1	FBXL7	HECW1	KPRP	NOL4	RFX5	TIAM1	
C6	DCAF12L2	FBXW7	HS3ST4	LPPR4	NPAP1	RIN3	TMEM200A	
C6ORF118	DCAF4L2	FCRL5	HS3ST5	LRFN5	NR0B1	RNASE3	TNFRSF21	
CA10	DCLK1	FOXG1	HTR1A	LRP1B	NRXN1	ROBO2	TNN	
CACNA1E	DCSTAMP	FRYL	HTR1E	LRRC7	NXPH4	SEMA5B	TNR	
CDH12	DDI1	GBA3	HTR2C	LRRTM1	NYAP2	SLC18A3	TRHDE	
CDH18	DLGAP2	GBP7	IFI16	LRRTM4	OPRD1	SLC39A12	TRIM58	
CDH8	DMD	GJA8	IL7R	LTBP4	P2RY10	SLC6A5	TRPS1	
CDH9	DNTTIP1	GPR139	INSL3	MAP2	PAX6	SLC8A1	UGT3A2	

Associations of variations or mutations in these genes with the listed diseases were sourced from the following: COSMIC, GeneCards, My Cancer Genome.

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