

qBiomarker Somatic Mutation PCR Array

Human Esophageal Cancer

Cat. no. 337021 SMH-038AA

For real-time PCR-based, pathway-focused, somatic mutation profiling

Format	For use with the following real-time cyclers
Format A, with fluorescein	Bio-Rad® models iCycler®, iQ™ 5, MyiQ™, MyiQ2
Format A, with ROX™	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well blocks); Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®
Format C, with ROX	Applied Biosystems models 7500 (Fast, 96-well block), 7900HT (Fast, 96-well block), StepOnePlus™, ViiA 7 (Fast, 96-well block)
Format D, with ROX	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
Format E, with ROX	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
Format F, with ROX	Roche® LightCycler® 480 (96-well block)
Format G, with ROX	Roche LightCycler 480 (384-well block)



Sample & Assay Technologies

Description

The Human Esophageal Cancer qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid, accurate, and comprehensive profiling of the somatic mutations in human esophageal cancer samples in the following key genes: BRAF, CDKN2A, CTNNB1/beta-catenin, EGFR, KRAS, PIK3CA, and P53. These mutations warrant extensive investigation to enhance the understanding of carcinogenesis and identify potential drug targets. The utility of somatic mutation status information in identifying key signaling transduction disruptions has been demonstrated in numerous research studies. For example, the mutation status of the EGFR and KRAS genes can predict the physiological response to certain drugs targeting these molecules. The Human Esophageal Cancer qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for studying mutations in the context of esophageal cancer and has the potential for discovery and verification of drug target biomarkers for this cancer type and other cancer types in which these mutations have been identified. This array includes 87 DNA sequence mutation assays designed to detect the most frequent, functionally verified, and biologically significant mutations in human esophageal cancer. These mutations were chosen from curated, comprehensive somatic mutation databases and peer-reviewed scientific literature, and represent the most frequently recurring somatic mutations compiled from over 1700 esophageal cancer samples. The simplicity of the product format and operating procedure allows routine somatic mutation profiling in any research laboratory with access to real-time PCR instruments.

For further details, consult the *qBiomarker Somatic Mutation PCR Handbook*.

Shipping and storage

qBiomarker Somatic Mutation PCR Arrays are shipped at ambient temperature or on blue ice packs. For long term storage, keep plates at -20°C . Ensure that you have the correct qBiomarker Somatic Mutation PCR Array format for your real-time cycler (see table above). qBiomarker Probe Mastermixes are shipped on blue ice packs. For long term storage, keep qBiomarker Probe Mastermixes at 4°C .

Note: Ensure that you have the correct qBiomarker Probe Mastermix, with the correct reference dye if required, for your instrument.

Note: Open the package and store the products appropriately immediately on receipt.

Assay table

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
A01	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
A02	CDKN2A	12473	c.172C>T	p.R58*	SMPH002668A
A03	CDKN2A	13604	c.202G>A	p.A68T	SMPH002693A
A04	CDKN2A	12475	c.238C>T	p.R80*	SMPH002667A
A05	CDKN2A	12504	c.247C>T	p.H83Y	SMPH002658A
A06	CDKN2A	12512	c.262G>T	p.E88*	SMPH002697A
A07	CDKN2A	12547	c.330G>A	p.W110*	SMPH002718A
A08	CTNNB1	5662	c.110C>T	p.S37F	SMPH003946A
A09	EGFR	6241	c.2303G>T	p.S768I	SMPH004666A
A10	KRAS	516	c.34G>T	p.G12C	SMPH007535A
A11	KRAS	521	c.35G>A	p.G12D	SMPH007531A
A12	KRAS	527	c.37G>T	p.G13C	SMPH007541A
B01	KRAS	532	c.38G>A	p.G13D	SMPH007538A
B02	PIK3CA	760	c.1624G>A	p.E542K	SMPH010629A
B03	PIK3CA	763	c.1633G>A	p.E545K	SMPH010627A
B04	PIK3CA	12458	c.1634A>C	p.E545A	SMPH010634A
B05	TP53	11582	c.395A>G	p.K132R	SMPH015094A
B06	TP53	11073	c.1024C>T	p.R342*	SMPH015065A
B07	TP53	10647	c.404G>T	p.C135F	SMPH014911A
B08	TP53	43708	c.422G>A	p.C141Y	SMPH034537A
B09	TP53	11245	c.430C>T	p.Q144*	SMPH014994A
B10	TP53	43609	c.437G>A	p.W146*	SMPH034567A
B11	TP53	10727	c.438G>A	p.W146*	SMPH015140A
B12	TP53	10905	c.451C>T	p.P151S	SMPH015043A
C01	TP53	11476	c.452C>A	p.P151H	SMPH014969A
C02	TP53	10790	c.455C>T	p.P152L	SMPH014958A
C03	TP53	6815	c.461G>T	p.G154V	SMPH015134A
C04	TP53	10670	c.469G>T	p.V157F	SMPH014984A
C05	TP53	10690	c.473G>A	p.R158H	SMPH014957A
C06	TP53	10714	c.473G>T	p.R158L	SMPH015138A
C07	TP53	10739	c.481G>A	p.A161T	SMPH015187A
C08	TP53	10808	c.488A>G	p.Y163C	SMPH014931A
C09	TP53	11333	c.499C>T	p.Q167*	SMPH015196A
C10	TP53	43559	c.517G>T	p.V173L	SMPH034455A
C11	TP53	10648	c.524G>A	p.R175H	SMPH014921A
C12	TP53	10645	c.527G>T	p.C176F	SMPH014960A
D01	TP53	10768	c.535C>T	p.H179Y	SMPH015208A
D02	TP53	10889	c.536A>G	p.H179R	SMPH015072A
D03	TP53	43635	c.536A>T	p.H179L	SMPH034554A
D04	TP53	10733	c.574C>T	p.Q192*	SMPH015161A
D05	TP53	10672	c.577C>T	p.H193Y	SMPH015192A
D06	TP53	10742	c.578A>G	p.H193R	SMPH014975A
D07	TP53	11066	c.578A>T	p.H193L	SMPH014968A
D08	TP53	44571	c.581T>G	p.L194R	SMPH034553A
D09	TP53	10705	c.586C>T	p.R196*	SMPH014949A
D10	TP53	10760	c.467G>C	p.R156P	SMPH015042A
D11	TP53	6482	c.625_626delAG	p.R209fs*6	SMPH015175A
D12	TP53	10654	c.637C>T	p.R213*	SMPH014928A
E01	TP53	43687	c.641A>G	p.H214R	SMPH034420A
E02	TP53	10801	c.404G>A	p.C135Y	SMPH015154A
E03	TP53	10667	c.646G>A	p.V216M	SMPH015006A
E04	TP53	10758	c.659A>G	p.Y220C	SMPH014964A
E05	TP53	10725	c.701A>G	p.Y234C	SMPH014944A
E06	TP53	10731	c.707A>G	p.Y236C	SMPH015023A
E07	TP53	11059	c.713G>A	p.C238Y	SMPH015089A
E08	TP53	10777	c.715A>G	p.N239D	SMPH015188A
E09	TP53	10810	c.725G>T	p.C242F	SMPH015002A
E10	TP53	10941	c.730G>A	p.G244S	SMPH015100A
E11	TP53	6932	c.733G>A	p.G245S	SMPH014940A
E12	TP53	43606	c.734G>A	p.G245D	SMPH034441A
F01	TP53	11196	c.734G>T	p.G245V	SMPH014986A
F02	TP53	43555	c.736A>G	p.M246V	SMPH034425A
F03	TP53	10656	c.742C>T	p.R248W	SMPH014929A
F04	TP53	10662	c.743G>A	p.R248Q	SMPH014902A
F05	TP53	6549	c.743G>T	p.R248L	SMPH015015A
F06	TP53	10817	c.747G>T	p.R249S	SMPH015066A
F07	TP53	10771	c.749C>T	p.P250L	SMPH015046A
F08	TP53	43651	c.763A>T	p.I255F	SMPH034486A
F09	TP53	10988	c.772G>A	p.E258K	SMPH015102A
F10	TP53	11166	c.406C>T	p.Q136*	SMPH014989A
F11	TP53	10794	c.796G>A	p.G266R	SMPH015215A
F12	TP53	10867	c.797G>A	p.G266E	SMPH015003A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
G01	TP53	10958	c.797G>T	p.G266V	SMPH014997A
G02	TP53	43621	c.809T>G	p.F270C	SMPH034735A
G03	TP53	10891	c.814G>A	p.V272M	SMPH014987A
G04	TP53	10659	c.817C>T	p.R273C	SMPH014907A
G05	TP53	10660	c.818G>A	p.R273H	SMPH014913A
G06	TP53	10779	c.818G>T	p.R273L	SMPH015005A
G07	TP53	43697	c.832C>A	p.P278T	SMPH034792A
G08	TP53	10939	c.832C>T	p.P278S	SMPH014915A
G09	TP53	10887	c.833C>G	p.P278R	SMPH015178A
G10	TP53	10863	c.833C>T	p.P278L	SMPH015086A
G11	TP53	43714	c.836G>A	p.G279E	SMPH034710A
G12	TP53	10704	c.844C>T	p.R282W	SMPH014941A
H01	TP53	10722	c.853G>A	p.E285K	SMPH014937A
H02	TP53	10726	c.856G>A	p.E286K	SMPH015084A
H03	TP53	10856	c.880G>T	p.E294*	SMPH015028A
H04	BRAF	99000006	copy number	copy number	SMPH017168A
H05	CDKN2A	99000032	copy number	copy number	SMPH017194A
H06	CTNNB1	99000042	copy number	copy number	SMPH017204A
H07	EGFR	99000007	copy number	copy number	SMPH017169A
H08	KRAS	99000008	copy number	copy number	SMPH017170A
H09	PIK3CA	99000012	copy number	copy number	SMPH017174A
H10	TP53	99000041	copy number	copy number	SMPH017203A
H11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
H12	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A

Array layout

	1	2	3	4	5	6	7	8	9	10	11	12
A	BRAF	CDKN2A	CDKN2A	CDKN2A	CDKN2A	CDKN2A	CDKN2A	CTNNB1	EGFR	KRAS	KRAS	KRAS
B	KRAS	PIK3CA	PIK3CA	PIK3CA	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
C	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
D	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
E	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
F	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
G	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
H	TP53	TP53	TP53	BRAF	CDKN2A	CTNNB1	EGFR	KRAS	PIK3CA	TP53	SMPC	SMPC

qBiomarker Somatic Mutation PCR Array products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

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