

# qBiomarker Somatic Mutation PCR Array

## Human Gastric Cancer

Cat. no. 337021 SMH-041A

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)



## Description

The Human Gastric Cancer qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid, accurate and comprehensive profiling of the somatic mutations in human gastric cancer samples in the following key genes: APC, BRAF, CDH1, CDKN2A, CTNNB1, ERBB2, FBXW7, HRAS, KRAS, NRAS, PDGFRA, PIK3CA and P53. These mutations warrant extensive investigation to enhance the understanding of carcinogenesis and identify potential drug targets. The utility of individual and multiple 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 Gastric Cancer qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for studying mutations in the context of cancer and has the potential for discovering and verifying drug target biomarkers for this cancer type and other cancer types in which these mutations were identified. This array includes 81 DNA sequence mutation assays designed to detect the most frequent, functionally verified, and biologically significant mutations in human 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 2000 gastric 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  $-20^{\circ}\text{C}$ . 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  $4^{\circ}\text{C}$ .

**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.

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## Assay table

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
A01	APC	13113	c.3927_3931delAAAGA	p.E1309fs*4	SMPH000523A
A02	APC	13127	c.4348C>T	p.R1450*	SMPH000539A
A03	APC	18838	c.4391_4394delAGAG	p.E1464fs*8	SMPH000811A
A04	APC	18561	c.4666_4667insA	p.T1556fs*3	SMPH000579A
A05	BRAF	1130	c.1798G>A	p.V600M	SMPH001846A
A06	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
A07	CDH1	19748	c.1108G>C	p.D370H	SMPH002524A
A08	CDKN2A	12475	c.238C>T	p.R80*	SMPH002667A
A09	CTNNB1	5671	c.101G>A	p.G34E	SMPH003960A
A10	CTNNB1	5670	c.101G>T	p.G34V	SMPH003948A
A11	CTNNB1	5703	c.106C>T	p.H36Y	SMPH003989A
A12	CTNNB1	5675	c.109T>G	p.S37A	SMPH003985A
B01	CTNNB1	5666	c.110C>A	p.S37Y	SMPH003961A
B02	CTNNB1	5679	c.110C>G	p.S37C	SMPH003962A
B03	CTNNB1	5662	c.110C>T	p.S37F	SMPH003946A
B04	CTNNB1	24746	c.112_114GGT>CCC	p.G38P	SMPH003988A
B05	CTNNB1	5733	c.143G>A	p.G48D	SMPH003935A
B06	CTNNB1	17661	c.130C>G	p.P44A	SMPH004001A
B07	CTNNB1	5694	c.86C>T	p.S29F	SMPH004082A
B08	CTNNB1	5672	c.94G>A	p.D32N	SMPH003957A
B09	CTNNB1	5668	c.94G>C	p.D32H	SMPH003967A
B10	CTNNB1	5661	c.94G>T	p.D32Y	SMPH003956A
B11	CTNNB1	5681	c.95A>G	p.D32G	SMPH003973A
B12	CTNNB1	5673	c.98C>A	p.S33Y	SMPH003959A
C01	CTNNB1	5677	c.98C>G	p.S33C	SMPH003963A
C02	CTNNB1	5669	c.98C>T	p.S33F	SMPH003964A
C03	ERBB2	685	c.2326G>A	p.G776S	SMPH005159A
C04	ERBB2	14062	c.2329G>T	p.V777L	SMPH005130A
C05	FBXW7	22932	c.1393C>T	p.R465C	SMPH005382A
C06	HRAS	483	c.35G>T	p.G12V	SMPH006497A
C07	KRAS	546	c.175G>A	p.A59T	SMPH007604A
C08	KRAS	552	c.182A>G	p.Q61R	SMPH007553A
C09	KRAS	517	c.34G>A	p.G12S	SMPH007533A
C10	KRAS	516	c.34G>T	p.G12C	SMPH007535A
C11	KRAS	521	c.35G>A	p.G12D	SMPH007531A
C12	KRAS	522	c.35G>C	p.G12A	SMPH007536A
D01	KRAS	520	c.35G>T	p.G12V	SMPH007537A
D02	KRAS	528	c.37G>A	p.G13S	SMPH007543A
D03	KRAS	527	c.37G>T	p.G13C	SMPH007541A
D04	KRAS	532	c.38G>A	p.G13D	SMPH007538A
D05	NRAS	569	c.37G>C	p.G13R	SMPH010074A
D06	PDGFRA	12418	c.1698_1712del15	p.S566_E571>R	SMPH010471A
D07	PIK3CA	760	c.1624G>A	p.E542K	SMPH010629A
D08	PIK3CA	763	c.1633G>A	p.E545K	SMPH010627A
D09	PIK3CA	12461	c.3062A>G	p.Y1021C	SMPH010682A
D10	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
D11	TP53	10647	c.404G>T	p.C135F	SMPH014911A
D12	TP53	43708	c.422G>A	p.C141Y	SMPH034537A
E01	TP53	10905	c.451C>T	p.P151S	SMPH015043A
E02	TP53	6815	c.461G>T	p.G154V	SMPH015134A
E03	TP53	10670	c.469G>T	p.V157F	SMPH014984A
E04	TP53	10690	c.473G>A	p.R158H	SMPH014957A
E05	TP53	11148	c.476C>T	p.A159V	SMPH014972A
E06	TP53	10739	c.481G>A	p.A161T	SMPH015187A
E07	TP53	10808	c.488A>G	p.Y163C	SMPH014931A
E08	TP53	43559	c.517G>T	p.V173L	SMPH034455A
E09	TP53	10648	c.524G>A	p.R175H	SMPH014921A
E10	TP53	10645	c.527G>T	p.C176F	SMPH014960A
E11	TP53	10733	c.574C>T	p.Q192*	SMPH015161A
E12	TP53	10742	c.578A>G	p.H193R	SMPH014975A
F01	TP53	10705	c.586C>T	p.R196*	SMPH014949A
F02	TP53	10654	c.637C>T	p.R213*	SMPH014928A
F03	TP53	10758	c.659A>G	p.Y220C	SMPH014964A
F04	TP53	10731	c.707A>G	p.Y236C	SMPH015023A
F05	TP53	10834	c.711G>A	p.M237I	SMPH015199A
F06	TP53	10941	c.730G>A	p.G244S	SMPH015100A
F07	TP53	6932	c.733G>A	p.G245S	SMPH014940A
F08	TP53	43606	c.734G>A	p.G245D	SMPH034441A
F09	TP53	10656	c.742C>T	p.R248W	SMPH014929A
F10	TP53	10662	c.743G>A	p.R248Q	SMPH014902A
F11	TP53	43871	c.746G>T	p.R249M	SMPH034767A
F12	TP53	10867	c.797G>A	p.G266E	SMPH015003A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
G01	TP53	44262	c.808T>C	p.F270L	SMPH034602A
G02	TP53	10659	c.817C>T	p.R273C	SMPH014907A
G03	TP53	10660	c.818G>A	p.R273H	SMPH014913A
G04	TP53	10893	c.824G>A	p.C275Y	SMPH015022A
G05	TP53	10939	c.832C>T	p.P278S	SMPH014915A
G06	TP53	10887	c.833C>G	p.P278R	SMPH015178A
G07	TP53	10992	c.844C>G	p.R282G	SMPH015139A
G08	TP53	10704	c.844C>T	p.R282W	SMPH014941A
G09	TP53	10722	c.853G>A	p.E285K	SMPH014937A
G10	APC	99000030	copy number	copy number	SMPH017192A
G11	BRAF	99000006	copy number	copy number	SMPH017168A
G12	CDH1	99000048	copy number	copy number	SMPH017210A
H01	CDKN2A	99000032	copy number	copy number	SMPH017194A
H02	CTNNB1	99000042	copy number	copy number	SMPH017204A
H03	ERBB2	99000016	copy number	copy number	SMPH017178A
H04	FBXW7	99000063	copy number	copy number	SMPH017225A
H05	HRAS	99000009	copy number	copy number	SMPH017171A
H06	KRAS	99000008	copy number	copy number	SMPH017170A
H07	NRAS	99000010	copy number	copy number	SMPH017172A
H08	PDGFRA	99000014	copy number	copy number	SMPH017176A
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	APC	APC	APC	APC	BRAF	BRAF	CDH1	CDKN2A	CTNNB1	CTNNB1	CTNNB1	CTNNB1
B	CTNNB1											
C	CTNNB1	CTNNB1	ERBB2	ERBB2	FBXW7	HRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
D	KRAS	KRAS	KRAS	KRAS	NRAS	PDGFRA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	TP53	TP53
E	TP53											
F	TP53											
G	TP53	APC	BRAF	CDH1								
H	CDKN2A	CTNNB1	ERBB2	FBXW7	HRAS	KRAS	NRAS	PDGFRA	PIK3CA	TP53	SMPC	SMPC

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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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