

qBiomarker Somatic Mutation PCR Array

Human Colon Cancer

Cat. no. 337021 SMH-021A

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 Colon Cancer qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid, accurate, and comprehensive profiling of the top somatic mutations in human colon cancer samples in the following genes: APC, BRAF, CTNNB1/beta-catenin, FBXW7, KRAS, PIK3CA, SRC, and P53. These mutations warrant extensive investigation to enhance the understanding of carcinogenesis and identify potential drug targets. Numerous research studies have demonstrated the utility of individual and multiple somatic mutation status information in identifying key signaling transduction disruptions. For example, the mutation status of the EGFR and KRAS genes can predict the physiological response to certain drugs targeting these molecules. The Human Colon Cancer qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for the study of mutations in the context of colon 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 86 DNA sequence mutation assays designed to detect the most frequent, functionally verified, and biologically significant mutations in human colon 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 29,000 colon 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	APC	18852	c.2626C>T	p.R876*	SMPH000580A
A02	APC	13125	c.3340C>T	p.R1114*	SMPH000586A
A03	APC	41617	c.3700_3700delA	p.S1234fs*31	SMPH018165A
A04	APC	18760	c.3916G>T	p.E1306*	SMPH000731A
A05	APC	19203	c.3919_3920insA	p.I1307fs*8	SMPH001187A
A06	APC	18950	c.3920_3924delTAAAA	p.I1307fs*6	SMPH000728A
A07	APC	18764	c.3921_3925delAAAAG	p.E1309fs*4	SMPH000606A
A08	APC	18775	c.3925G>T	p.E1309*	SMPH000522A
A09	APC	13113	c.3927_3931delAAAGA	p.E1309fs*4	SMPH000523A
A10	APC	18817	c.3934G>T	p.G1312*	SMPH000565A
A11	APC	18700	c.3956delC	p.P1319fs*2	SMPH000576A
A12	APC	18702	c.3964G>T	p.E1322*	SMPH000685A
B01	APC	13129	c.4012C>T	p.Q1338*	SMPH000527A
B02	APC	41623	c.4081_4082delCC	p.P1361fs*13	SMPH018172A
B03	APC	13121	c.4099C>T	p.Q1367*	SMPH000702A
B04	APC	19033	c.4110_4111delAA	p.P1372fs*2	SMPH001245A
B05	APC	41619	c.4118_4118delC	p.P1373fs*42	SMPH018167A
B06	APC	18862	c.4132C>T	p.Q1378*	SMPH000590A
B07	APC	18834	c.4135G>T	p.E1379*	SMPH000530A
B08	APC	19087	c.4216C>T	p.Q1406*	SMPH000690A
B09	APC	19088	c.4219_4220delAG	p.S1407fs*1	SMPH001089A
B10	APC	18948	c.4233delT	p.S1411fs*4	SMPH000571A
B11	APC	18836	c.4285C>T	p.Q1429*	SMPH000549A
B12	APC	13127	c.4348C>T	p.R1450*	SMPH000539A
C01	APC	18873	c.4385_4386delAG	p.S1465fs*3	SMPH000704A
C02	APC	18838	c.4391_4394delAGAG	p.E1464fs*8	SMPH000811A
C03	APC	41618	c.4463_4466delTATT	p.L1488fs*18	SMPH018166A
C04	APC	19054	c.4473delT	p.F1491fs*16	SMPH000577A
C05	APC	18786	c.4476delC	p.T1493fs*14	SMPH000633A
C06	APC	19695	c.4660_4661insA	p.T1556fs*3	SMPH001074A
C07	APC	18561	c.4666_4667insA	p.T1556fs*3	SMPH000579A
C08	APC	13123	c.4729G>T	p.E1577*	SMPH001200A
C09	APC	41620	c.4731_4734delATGT	p.C1578fs*71	SMPH018169A
C10	APC	13862	c.904C>T	p.R302*	SMPH000669A
C11	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
C12	CTNNB1	5675	c.109T>G	p.S37A	SMPH003985A
D01	CTNNB1	5664	c.121A>G	p.T41A	SMPH003950A
D02	CTNNB1	6128	c.133_135delTCT	p.S45del	SMPH004022A
D03	CTNNB1	5667	c.134C>T	p.S45F	SMPH003953A
D04	CTNNB1	5673	c.98C>A	p.S33Y	SMPH003959A
D05	FBXW7	22932	c.1393C>T	p.R465C	SMPH005382A
D06	KRAS	553	c.182A>T	p.Q61L	SMPH007544A
D07	KRAS	554	c.183A>C	p.Q61H	SMPH007540A
D08	KRAS	555	c.183A>T	p.Q61H	SMPH007546A
D09	KRAS	517	c.34G>A	p.G12S	SMPH007533A
D10	KRAS	518	c.34G>C	p.G12R	SMPH007534A
D11	KRAS	516	c.34G>T	p.G12C	SMPH007535A
D12	KRAS	521	c.35G>A	p.G12D	SMPH007531A
E01	KRAS	522	c.35G>C	p.G12A	SMPH007536A
E02	KRAS	520	c.35G>T	p.G12V	SMPH007537A
E03	KRAS	528	c.37G>A	p.G13S	SMPH007543A
E04	KRAS	529	c.37G>C	p.G13R	SMPH007549A
E05	KRAS	527	c.37G>T	p.G13C	SMPH007541A
E06	KRAS	531	c.38_39GC>AT	p.G13D	SMPH007589A
E07	KRAS	532	c.38G>A	p.G13D	SMPH007538A
E08	KRAS	533	c.38G>C	p.G13A	SMPH007542A
E09	KRAS	534	c.38G>T	p.G13V	SMPH007545A
E10	KRAS	19404	c.436G>A	p.A146T	SMPH007562A
E11	PIK3CA	760	c.1624G>A	p.E542K	SMPH010629A
E12	PIK3CA	763	c.1633G>A	p.E545K	SMPH010627A
F01	PIK3CA	764	c.1634A>G	p.E545G	SMPH010633A
F02	PIK3CA	766	c.1636C>A	p.Q546K	SMPH010628A
F03	PIK3CA	773	c.3129G>T	p.M1043I	SMPH010695A
F04	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
F05	PIK3CA	776	c.3140A>T	p.H1047L	SMPH010632A
F06	SRC	1369	c.1591C>T	p.Q531*	SMPH014190A
F07	TP53	10790	c.455C>T	p.P152L	SMPH014958A
F08	TP53	10690	c.473G>A	p.R158H	SMPH014957A
F09	TP53	10739	c.481G>A	p.A161T	SMPH015187A
F10	TP53	10648	c.524G>A	p.R175H	SMPH014921A
F11	TP53	10687	c.527G>A	p.C176Y	SMPH015119A
F12	TP53	10645	c.527G>T	p.C176F	SMPH014960A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
G01	TP53	10705	c.586C>T	p.R196*	SMPH014949A
G02	TP53	10654	c.637C>T	p.R213*	SMPH014928A
G03	TP53	10758	c.659A>G	p.Y220C	SMPH014964A
G04	TP53	10812	c.722C>T	p.S241F	SMPH014924A
G05	TP53	6932	c.733G>A	p.G245S	SMPH014940A
G06	TP53	43606	c.734G>A	p.G245D	SMPH034441A
G07	TP53	10656	c.742C>T	p.R248W	SMPH014929A
G08	TP53	10662	c.743G>A	p.R248Q	SMPH014902A
G09	TP53	10891	c.814G>A	p.V272M	SMPH014987A
G10	TP53	10659	c.817C>T	p.R273C	SMPH014907A
G11	TP53	10660	c.818G>A	p.R273H	SMPH014913A
G12	TP53	10863	c.833C>T	p.P278L	SMPH015086A
H01	TP53	10704	c.844C>T	p.R282W	SMPH014941A
H02	TP53	10768	c.535C>T	p.H179Y	SMPH015208A
H03	APC	99000030	copy number	copy number	SMPH017192A
H04	BRAF	99000006	copy number	copy number	SMPH017168A
H05	CTNNB1	99000042	copy number	copy number	SMPH017204A
H06	FBXW7	99000063	copy number	copy number	SMPH017225A
H07	KRAS	99000008	copy number	copy number	SMPH017170A
H08	PIK3CA	99000012	copy number	copy number	SMPH017174A
H09	SRC	99000071	copy number	copy number	SMPH038607A
H10	TP53	99000041	copy number	copy number	SMPH017203A
H11	SMPK	99000017	positive PCR control	positive PCR control	SMPH017179A
H12	SMPK	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	APC	APC	APC	APC	APC	APC	APC	APC
B	APC	APC	APC	APC	APC	APC	APC	APC	APC	APC	APC	APC
C	APC	APC	APC	APC	APC	APC	APC	APC	APC	APC	BRAF	CTNNB1
D	CTNNB1	CTNNB1	CTNNB1	CTNNB1	FBXW7	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
E	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	PIK3CA	PIK3CA
F	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	SRC	TP53	TP53	TP53	TP53	TP53	TP53
G	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
H	TP53	TP53	APC	BRAF	CTNNB1	FBXW7	KRAS	PIK3CA	SRC	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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