

qBiomarker Somatic Mutation PCR Array

Human Soft Tissue Tumors (including GIST)

Cat. no. 337021 SMH-027A

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 Soft Tissue Tumors (including GIST) qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid, accurate, and comprehensive profiling of the top somatic mutations in human soft tissue tumor samples in the following genes: APC, BRAF, CTNNB1/beta-catenin, HRAS, KIT, KRAS, NF2, NRAS, PDGFRA, SMARCB1, 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 Soft Tissue Tumor qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for the study of mutations in the context of soft tissue tumors (including GIST) 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 83 DNA sequence mutation assays designed to detect the most frequent, functionally verified, and biologically significant mutations in human soft tissue tumors. 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 4800 soft tissue tumor samples (including 3100 GIST 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	25814	c.4023T>G	p.S1341R	SMPH000594A
A02	APC	13127	c.4348C>T	p.R1450*	SMPH000539A
A03	APC	25817	c.4610C>A	p.T1537K	SMPH000597A
A04	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
A05	CTNNB1	5662	c.110C>T	p.S37F	SMPH003946A
A06	CTNNB1	5664	c.121A>G	p.T41A	SMPH003950A
A07	CTNNB1	5663	c.133T>C	p.S45P	SMPH003970A
A08	CTNNB1	5667	c.134C>T	p.S45F	SMPH003953A
A09	CTNNB1	5738	c.61G>A	p.A21T	SMPH004064A
A10	CTNNB1	5661	c.94G>T	p.D32Y	SMPH003956A
A11	CTNNB1	5677	c.98C>G	p.S33C	SMPH003963A
A12	HRAS	496	c.181C>A	p.Q61K	SMPH006505A
B01	HRAS	480	c.34G>A	p.G12S	SMPH006499A
B02	HRAS	484	c.35G>A	p.G12D	SMPH006507A
B03	HRAS	483	c.35G>T	p.G12V	SMPH006497A
B04	HRAS	487	c.37G>A	p.G13S	SMPH006515A
B05	KIT	1326	c. 1509_1510insGCCTAT	p.Y503_F504insAY	SMPH007133A
B06	KIT	28026	c.1621A>C	p.M541L	SMPH007208A
B07	KIT	1169	c.1651_1665del15	p.P551_V555del	SMPH007432A
B08	KIT	27909	c.1656_1673del18	p.Y553_K558>	SMPH007203A
B09	KIT	1210	c. 1667_1672delAGTGGA	p.W557_K558del	SMPH007192A
B10	KIT	1332	c.1669_1683del15	p.W557_E561del	SMPH007293A
B11	KIT	1216	c.1669T>A	p.W557R	SMPH007358A
B12	KIT	1219	c.1669T>C	p.W557R	SMPH007164A
C01	KIT	1221	c.1669T>G	p.W557G	SMPH007170A
C02	KIT	1226	c. 1670_1675delGGAAG G	p.W557_V559>F	SMPH007211A
C03	KIT	18896	c.1673_1687del15	p.K558_E562del	SMPH007329A
C04	KIT	1247	c.1675_1677delGTT	p.V559del	SMPH007131A
C05	KIT	1252	c.1676T>A	p.V559D	SMPH007129A
C06	KIT	1255	c.1676T>C	p.V559A	SMPH007246A
C07	KIT	1253	c.1676T>G	p.V559G	SMPH007128A
C08	KIT	1257	c.1679T>A	p.V560D	SMPH007114A
C09	KIT	1285	c.1708_1728del21	p.Y570_L576del	SMPH007220A
C10	KIT	1290	c.1727T>C	p.L576P	SMPH007118A
C11	KIT	1294	c.1735_1737delGAT	p.D579del	SMPH007195A
C12	KIT	1304	c.1924A>G	p.K642E	SMPH007132A
D01	KIT	12706	c.1961T>C	p.V654A	SMPH007172A
D02	KIT	12708	c.2009C>T	p.T670I	SMPH007253A
D03	KIT	1306	c.2143_2145delAGC	p.S715del	SMPH007455A
D04	KIT	1311	c.2446G>C	p.D816H	SMPH007137A
D05	KIT	1321	c.2466T>A	p.N822K	SMPH007146A
D06	KIT	1322	c.2466T>G	p.N822K	SMPH007260A
D07	KIT	18681	c.2467T>G	p.Y823D	SMPH007206A
D08	KRAS	555	c.183A>T	p.Q61H	SMPH007546A
D09	KRAS	516	c.34G>T	p.G12C	SMPH007535A
D10	KRAS	521	c.35G>A	p.G12D	SMPH007531A
D11	KRAS	520	c.35G>T	p.G12V	SMPH007537A
D12	KRAS	528	c.37G>A	p.G13S	SMPH007543A
E01	KRAS	532	c.38G>A	p.G13D	SMPH007538A
E02	NF2	21990	c.1021C>T	p.R341*	SMPH009122A
E03	NF2	23667	c.1396C>T	p.R466*	SMPH009308A
E04	NF2	21991	c.169C>T	p.R57*	SMPH009090A
E05	NF2	22240	c.634C>T	p.Q212*	SMPH009212A
E06	NF2	22454	c.655G>A	p.V219M	SMPH009289A
E07	NF2	22000	c.784C>T	p.R262*	SMPH009108A
E08	NRAS	580	c.181C>A	p.Q61K	SMPH010073A
E09	NRAS	584	c.182A>G	p.Q61R	SMPH010069A
E10	NRAS	585	c.183A>T	p.Q61H	SMPH010068A
E11	PDGFRA	21973	c. 1659_1664delGAGGTA	p.R554_Y555del	SMPH010454A
E12	PDGFRA	741	c.1678_1692del15	p.R560_S564del	SMPH010497A
F01	PDGFRA	739	c.1682T>A	p.V561D	SMPH010452A
F02	PDGFRA	28053	c.1694_1695insA	p.S566fs*6	SMPH010466A
F03	PDGFRA	742	c.1696_1713>CGC	p.S566_E571>R	SMPH010473A
F04	PDGFRA	12417	c.1697_1711del15	p.S566_E571>K	SMPH010472A
F05	PDGFRA	22416	c.1975A>T	p.N659Y	SMPH010460A
F06	PDGFRA	12401	c.2524_2532del9	p.D842_M844del	SMPH010485A
F07	PDGFRA	737	c.2524_2535del12	p.D842_H845del	SMPH010476A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
F08	PDGFRA	12396	c.2524G>T	p.D842Y	SMPH010481A
F09	PDGFRA	736	c.2525A>T	p.D842V	SMPH010453A
F10	PDGFRA	12408	c.2526_2538>G	p.D842_D846>E	SMPH010489A
F11	PDGFRA	12400	c.2527_2538del12	p.I843_D846del	SMPH010484A
F12	PDGFRA	12407	c.2528_2539del12	p.I843_S847>T	SMPH010488A
G01	PDGFRA	12402	c.2530_2541del12	p.M844_S847del	SMPH010463A
G02	SMARCB1	1002	c.118C>T	p.R40*	SMPH013852A
G03	SMARCB1	991	c.141C>A	p.Y47*	SMPH013889A
G04	SMARCB1	24595	c.157C>T	p.R53*	SMPH013853A
G05	SMARCB1	992	c.472C>T	p.R158*	SMPH013863A
G06	SMARCB1	993	c.601C>T	p.R201*	SMPH013867A
G07	TP53	10905	c.451C>T	p.P151S	SMPH015043A
G08	TP53	10654	c.637C>T	p.R213*	SMPH014928A
G09	TP53	10758	c.659A>G	p.Y220C	SMPH014964A
G10	TP53	11059	c.713G>A	p.C238Y	SMPH015089A
G11	TP53	10656	c.742C>T	p.R248W	SMPH014929A
G12	APC	99000030	copy number	copy number	SMPH017192A
H01	BRAF	99000006	copy number	copy number	SMPH017168A
H02	CTNNB1	99000042	copy number	copy number	SMPH017204A
H03	HRAS	99000009	copy number	copy number	SMPH017171A
H04	KIT	99000021	copy number	copy number	SMPH017183A
H05	KRAS	99000008	copy number	copy number	SMPH017170A
H06	NF2	99000035	copy number	copy number	SMPH017197A
H07	NRAS	99000010	copy number	copy number	SMPH017172A
H08	PDGFRA	99000014	copy number	copy number	SMPH017176A
H09	SMARCB1	99000046	copy number	copy number	SMPH017208A
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	BRAF	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	HRAS
B	HRAS	HRAS	HRAS	HRAS	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT
C	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT
D	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KRAS	KRAS	KRAS	KRAS	KRAS
E	KRAS	NF2	NF2	NF2	NF2	NF2	NF2	NRAS	NRAS	NRAS	PDGFRA	PDGFRA
F	PDGFRA	PDGFRA	PDGFRA	PDGFRA	PDGFRA	PDGFRA	PDGFRA	PDGFRA	PDGFRA	PDGFRA	PDGFRA	PDGFRA
G	PDGFRA	SMARCB1	SMARCB1	SMARCB1	SMARCB1	SMARCB1	TP53	TP53	TP53	TP53	TP53	APC
H	BRAF	CTNNB1	HRAS	KIT	KRAS	NF2	NRAS	PDGFRA	SMARCB1	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.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

Trademarks: QIAGEN® (QIAGEN Group); Applied Biosystems®, ViiA™, StepOnePlus™, ROX™ (Applied Biosystems Corporation or its subsidiaries); Bio-Rad®, iCycler®, iQ™, MyiQ™, Chromo4™, CFX96™, DNA Engine Opticon®, CFX384™ (Bio-Rad Laboratories, Inc.); Stratagene®, Mx3005P®, Mx3000P®, Mx4000® (Stratagene); Eppendorf®, Mastercycler® (Eppendorf AG); Roche®, LightCycler® (Roche Group).

1066146 03/2011 © 2011 QIAGEN, all rights reserved.

www.qiagen.com

Australia ■ 1-800-243-800

Austria ■ 0800/281010

Belgium ■ 0800-79612

Brazil ■ 0800-557779

Canada ■ 800-572-9613

China ■ 8621-3865-3865

Denmark ■ 80-885945

Finland ■ 0800-914416

France ■ 01-60-920-930

Germany ■ 02103-29-12000

Hong Kong ■ 800 933 965

Ireland ■ 1800 555 049

Italy ■ 800-787980

Japan ■ 03-6890-7300

Korea (South) ■ 080-000-7145

Luxembourg ■ 8002 2076

Mexico ■ 01-800-7742-436

The Netherlands ■ 0800 0229592

Norway ■ 800-18859

Singapore ■ 1800-742-4368

Spain ■ 91-630-7050

Sweden ■ 020-790282

Switzerland ■ 055-254-22-11

UK ■ 01293-422-911

USA ■ 800-426-8157



Sample & Assay Technologies