qBiomarker Somatic Mutation PCR Array

Human Ras-Raf Pathway

Cat. no. 337021 SMH-013A

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)

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Description

The Human Ras-Raf Pathway qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid and accurate profiling of the somatic mutation status for key genes in the Ras-Raf pathway: Raf, KRas, HRas, and NRas. Components in this pathway are frequently mutated in human cancers and therefore 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 RAS-RAF Pathway qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for studying mutations in the context of the RAS-RAF pathway and provides the potential to discover and verify drug target biomarkers for a variety of human cancers involving the RAS-RAF signaling pathway and downstream effectors. This array includes 42 DNA sequence mutation assays designed to detect the most frequent, functionally verified, and biologically significant mutations in the RAS-RAF pathway. These mutations were chosen from curated, comprehensive, somatic mutation databases and peer-reviewed scientific literature. Each 96-well array allows profiling mutation status of 2 samples, while each 384-well format array allows mutation profiling of 8 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 a summary of the functional annotations of the mutation assays included and references supporting this array design, please refer to the appropriate Web page.

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	460	c.1406G>C	p.G469A	SMPH001906A
A02	BRAF	470	c.1789C>G	p.L597V	SMPH001869A
A03	BRAF	1130	c.1798G>A	p.V600M	SMPH001846A
A04	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
A05	BRAF	18443	c.1799T>C	p.V600A	SMPH001845A
A06	BRAF	6137	c.1799T>G	p.V600G	SMPH001912A
A07	KRAS	552	c.182A>G	p.Q61R	SMPH007553A
A08	KRAS	553	c.182A>T	p.Q61L	SMPH007544A
A09	KRAS	555	c.183A>T	p.Q61H	SMPH007546A
A10	KRAS	517	c.34G>A	p.G12S	SMPH007533A
A11	KRAS	518	c.34G>C	p.G12R	SMPH007534A
A12	KRAS	516	c.34G>T	p.G12C	SMPH007535A
B01	KRAS	521	c.35G>A	p.G12D	SMPH007531A
B02	KRAS	522	c.35G>C	p.G12A	SMPH007536A
B03	KRAS	520	c.35G>T	p.G12V	SMPH007537A
B04	KRAS	528	c.37G>A	p.G13S	SMPH007543A
B05	KRAS	529	c.37G>C	p.G13R	SMPH007549A
B06	KRAS	527	c.37G>T	p.G13C	SMPH007541A
B07	KRAS	532	c.38G>A	p.G13D	SMPH007538A
B08	KRAS	533	c.38G>C	p.G13A	SMPH007542A
B09	KRAS	534	c.38G>T	p.G13V	SMPH007545A
B10	HRAS	496	c.181C>A	p.Q61K	SMPH006505A
B11	HRAS	499	c.182A>G	p.Q61R	SMPH006502A
B12	HRAS	498	c.182A>T	p.Q61L	SMPH006503A
C01	HRAS	502	c.183G>T	p.Q61H	SMPH006516A
C02	HRAS	480	c.34G>A	p.G12S	SMPH006499A
C03	HRAS	482	c.34G>C	p.G12R	SMPH006506A
C04	HRAS	481	c.34G>T	p.G12C	SMPH006500A
C05	HRAS	484	c.35G>A	p.G12D	SMPH006507A
C06	HRAS	483	c.35G>T	p.G12V	SMPH006497A
C07	HRAS	486	c.37G>C	p.G13R	SMPH006498A
C08	NRAS	580	c.181C>A	p.Q61K	SMPH010073A
C09	NRAS	582	c.182A>C	p.Q61P	SMPH010096A
C10	NRAS	584	c.182A>G	p.Q61R	SMPH010069A
C11	NRAS	583	c.182A>T	p.Q61L	SMPH010076A
C12	NRAS	563	c.34G>A	p.G12S	SMPH010075A
D01	NRAS	564	c.35G>A	p.G12D	SMPH010071A
D02	NRAS	565	c.35G>C	p.G12A	SMPH010066A
D03	NRAS	569	c.37G>C	p.G13R	SMPH010074A
D04	NRAS	573	c.38G>A	p.G13D	SMPH010070A
D05	NRAS	575	c.38G>C	p.G13A	SMPH010084A
D06	NRAS	574	c.38G>T	p.G13V	SMPH010082A
D07	BRAF	99000006	copy number	copy number	SMPH017168A
D08	KRAS	99000008	copy number	copy number	SMPH017170A
D09	HRAS	99000009	copy number	copy number	SMPH017171A
D10	NRAS	99000010	copy number	copy number	SMPH017172A
D11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
D12	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
E01	BRAF	460	c.1406G>C	p.G469A	SMPH001906A
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F01	KRAS	521	c.35G>A	p.G12D	SMPH007531A
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G05	HRAS	484	c.35G>A	p.G12D	SMPH006507A
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G07	HRAS	486	c.37G>C	p.G13R	SMPH006498A
G08	NRAS	580	c.181C>A	p.Q61K	SMPH010073A
G09	NRAS	582	c.182A>C	p.Q61P	SMPH010096A
G10	NRAS	584	c.182A>G	p.Q61R	SMPH010069A
G11	NRAS	583	c.182A>T	p.Q61L	SMPH010076A
G12	NRAS	563	c.34G>A	p.G12S	SMPH010075A
H01	NRAS	564	c.35G>A	p.G12D	SMPH010071A
H02	NRAS	565	c.35G>C	p.G12A	SMPH010066A
H03	NRAS	569	c.37G>C	p.G13R	SMPH010074A
H04	NRAS	573	c.38G>A	p.G13D	SMPH010070A
H05	NRAS	575	c.38G>C	p.G13A	SMPH010084A
H06	NRAS	574	c.38G>T	p.G13V	SMPH010082A
H07	BRAF	99000006	copy number	copy number	SMPH017168A
H08	KRAS	99000008	copy number	copy number	SMPH017170A
H09	HRAS	99000009	copy number	copy number	SMPH017171A
H10	NRAS	99000010	copy number	copy number	SMPH017172A
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	BRAF	BRAF	BRAF	BRAF	BRAF	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
B	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	HRAS	HRAS	HRAS
C	HRAS	HRAS	HRAS	HRAS	HRAS	HRAS	HRAS	NRAS	NRAS	NRAS	NRAS	NRAS
D	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	BRAF	KRAS	HRAS	NRAS	SMPC	SMPC
E	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
F	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	HRAS	HRAS	HRAS
G	HRAS	HRAS	HRAS	HRAS	HRAS	HRAS	HRAS	NRAS	NRAS	NRAS	NRAS	NRAS
H	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	BRAF	KRAS	HRAS	NRAS	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.

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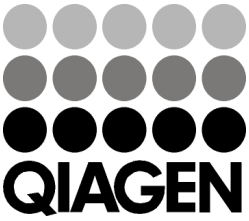

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