qBiomarker Somatic Mutation PCR Array

Human BRAF Gene

Cat. no. 337021 SMH-802AA

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 BRAF Gene qBiomarker Somatic Mutation PCR Array allows the detection of 20 unique mutations in the human BRAF gene. BRAF, a proto-oncogene and a serine/threonine protein kinase, regulates the MAP kinase/ERK signaling pathway and its role in affecting cell division, differentiation, and secretion. Previous scientific reports have shown a strong association between mutations in the BRAF gene and non-Hodgkin lymphoma, hairy cell leukemia, and malignant melanoma as well as cancers of the colon, lung, and thyroid. The BRAF mutations found in cancer samples are predominately missense point mutations that either increase or impair BRAF kinase activity, such as p.V600 and p.G469A mutations respectively. The DNA sequence mutation assays in the array detect the most frequent mutations in BRAF compiled from over 11,000 reported cancer sample sequences. Each mutation assay is bench-tested for the sensitive detection of a low percentage of mutation-containing DNA in a background of wild-type genomic DNA. The 96-well format of this array profiles the mutation status of 4 samples, while the 384-well array format profiles 16 samples, and each set of plates includes qPCR mastermix. Using real-time PCR, research studies can easily and reliably detect a panel of mutations in the BRAF gene with this array.

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	BRAF	473	c.1798_1799GT>AA	p.V600K	SMPH001831A
A03	BRAF	478	c.1801A>G	p.K601E	SMPH001863A
A04	BRAF	474	c.1798_1799GT>AG	p.V600R	SMPH001833A
A05	BRAF	1130	c.1798G>A	p.V600M	SMPH001846A
A06	BRAF	18443	c.1799T>C	p.V600A	SMPH001845A
A07	BRAF	475	c.1799_1800TG>AA	p.V600E	SMPH001832A
A08	BRAF	460	c.1406G>C	p.G469A	SMPH001906A
A09	BRAF	477	c.1799_1800TG>AT	p.V600D	SMPH001940A
A10	BRAF	6137	c.1799T>G	p.V600G	SMPH001912A
A11	BRAF	459	c.1406G>T	p.G469V	SMPH001903A
A12	BRAF	451	c.1397G>T	p.G466V	SMPH001870A
B01	BRAF	470	c.1789C>G	p.L597V	SMPH001869A
B02	BRAF	1126	c.1789_1790CT>TC	p.L597S	SMPH001834A
B03	BRAF	1125	c.1790T>A	p.L597Q	SMPH001855A
B04	BRAF	471	c.1790T>G	p.L597R	SMPH001880A
B05	BRAF	449	c.1391G>A	p.G464E	SMPH001905A
B06	BRAF	461	c.1406G>A	p.G469E	SMPH001868A
B07	BRAF	33727	c.1415A>C	p.Y472S	SMPH001913A
B08	BRAF	450	c.1391G>T	p.G464V	SMPH001927A
B09	BRAF	99000006	copy number	copy number	SMPH017168A
B10	BRAF	99000006	copy number	copy number	SMPH017168A
B11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
B12	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
C01	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
C02	BRAF	473	c.1798_1799GT>AA	p.V600K	SMPH001831A
C03	BRAF	478	c.1801A>G	p.K601E	SMPH001863A
C04	BRAF	474	c.1798_1799GT>AG	p.V600R	SMPH001833A
C05	BRAF	1130	c.1798G>A	p.V600M	SMPH001846A
C06	BRAF	18443	c.1799T>C	p.V600A	SMPH001845A
C07	BRAF	475	c.1799_1800TG>AA	p.V600E	SMPH001832A
C08	BRAF	460	c.1406G>C	p.G469A	SMPH001906A
C09	BRAF	477	c.1799_1800TG>AT	p.V600D	SMPH001940A
C10	BRAF	6137	c.1799T>G	p.V600G	SMPH001912A
C11	BRAF	459	c.1406G>T	p.G469V	SMPH001903A
C12	BRAF	451	c.1397G>T	p.G466V	SMPH001870A
D01	BRAF	470	c.1789C>G	p.L597V	SMPH001869A
D02	BRAF	1126	c.1789_1790CT>TC	p.L597S	SMPH001834A
D03	BRAF	1125	c.1790T>A	p.L597Q	SMPH001855A
D04	BRAF	471	c.1790T>G	p.L597R	SMPH001880A
D05	BRAF	449	c.1391G>A	p.G464E	SMPH001905A
D06	BRAF	461	c.1406G>A	p.G469E	SMPH001868A
D07	BRAF	33727	c.1415A>C	p.Y472S	SMPH001913A
D08	BRAF	450	c.1391G>T	p.G464V	SMPH001927A
D09	BRAF	99000006	copy number	copy number	SMPH017168A
D10	BRAF	99000006	copy number	copy number	SMPH017168A
D11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
D12	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
E01	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
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G05	BRAF	1130	c.1798G>A	p.V600M	SMPH001846A
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G09	BRAF	477	c.1799_1800TG>AT	p.V600D	SMPH001940A
G10	BRAF	6137	c.1799T>G	p.V600G	SMPH001912A
G11	BRAF	459	c.1406G>T	p.G469V	SMPH001903A
G12	BRAF	451	c.1397G>T	p.G466V	SMPH001870A
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H02	BRAF	1126	c.1789_1790CT>TC	p.L597S	SMPH001834A
H03	BRAF	1125	c.1790T>A	p.L597Q	SMPH001855A
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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	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF
B	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	SMPC	SMPC
C	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF
D	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	SMPC	SMPC
E	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF
F	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	SMPC	SMPC
G	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF
H	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	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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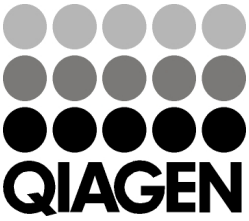

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