

qBiomarker Somatic Mutation PCR Array

Human KRAS Gene

Cat. no. 337021 SMH-806AA

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 KRAS Gene qBiomarker Somatic Mutation PCR Array allows the detection of 20 unique mutations in the human KRAS gene. KRAS, a proto-oncogene and a member of the small GTPase superfamily, performs an essential function in normal cellular signaling, including proliferation, differentiation, and senescence signaling. Previous scientific reports have shown a strong association between mutations in the KRAS gene and leukemia as well as cancers of the colon, lung, and pancreas. The KRAS mutations found in cancer samples are predominately missense point mutations in codon positions 12, 13, and 61 that result in reduced intrinsic GTPase activity and/or unresponsiveness to RasGAP. The DNA sequence mutation assays in the array detect the most frequent mutations in KRAS compiled from nearly 24,000 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 KRAS 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	KRAS	521	c.35G>A	p.G12D	SMPH007531A
A02	KRAS	520	c.35G>T	p.G12V	SMPH007537A
A03	KRAS	532	c.38G>A	p.G13D	SMPH007538A
A04	KRAS	516	c.34G>T	p.G12C	SMPH007535A
A05	KRAS	522	c.35G>C	p.G12A	SMPH007536A
A06	KRAS	517	c.34G>A	p.G12S	SMPH007533A
A07	KRAS	518	c.34G>C	p.G12R	SMPH007534A
A08	KRAS	527	c.37G>T	p.G13C	SMPH007541A
A09	KRAS	554	c.183A>C	p.Q61H	SMPH007540A
A10	KRAS	528	c.37G>A	p.G13S	SMPH007543A
A11	KRAS	553	c.182A>T	p.Q61L	SMPH007544A
A12	KRAS	555	c.183A>T	p.Q61H	SMPH007546A
B01	KRAS	19404	c.436G>A	p.A146T	SMPH007562A
B02	KRAS	529	c.37G>C	p.G13R	SMPH007549A
B03	KRAS	552	c.182A>G	p.Q61R	SMPH007553A
B04	KRAS	512	c.34_35GG>TT	p.G12F	SMPH007551A
B05	KRAS	533	c.38G>C	p.G13A	SMPH007542A
B06	KRAS	549	c.181C>A	p.Q61K	SMPH007564A
B07	KRAS	531	c.38_39GC>AT	p.G13D	SMPH007589A
B08	KRAS	534	c.38G>T	p.G13V	SMPH007545A
B09	KRAS	99000008	copy number	copy number	SMPH017170A
B10	KRAS	99000008	copy number	copy number	SMPH017170A
B11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
B12	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
C01	KRAS	521	c.35G>A	p.G12D	SMPH007531A
C02	KRAS	520	c.35G>T	p.G12V	SMPH007537A
C03	KRAS	532	c.38G>A	p.G13D	SMPH007538A
C04	KRAS	516	c.34G>T	p.G12C	SMPH007535A
C05	KRAS	522	c.35G>C	p.G12A	SMPH007536A
C06	KRAS	517	c.34G>A	p.G12S	SMPH007533A
C07	KRAS	518	c.34G>C	p.G12R	SMPH007534A
C08	KRAS	527	c.37G>T	p.G13C	SMPH007541A
C09	KRAS	554	c.183A>C	p.Q61H	SMPH007540A
C10	KRAS	528	c.37G>A	p.G13S	SMPH007543A
C11	KRAS	553	c.182A>T	p.Q61L	SMPH007544A
C12	KRAS	555	c.183A>T	p.Q61H	SMPH007546A
D01	KRAS	19404	c.436G>A	p.A146T	SMPH007562A
D02	KRAS	529	c.37G>C	p.G13R	SMPH007549A
D03	KRAS	552	c.182A>G	p.Q61R	SMPH007553A
D04	KRAS	512	c.34_35GG>TT	p.G12F	SMPH007551A
D05	KRAS	533	c.38G>C	p.G13A	SMPH007542A
D06	KRAS	549	c.181C>A	p.Q61K	SMPH007564A
D07	KRAS	531	c.38_39GC>AT	p.G13D	SMPH007589A
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D09	KRAS	99000008	copy number	copy number	SMPH017170A
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D11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
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E01	KRAS	521	c.35G>A	p.G12D	SMPH007531A
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E03	KRAS	532	c.38G>A	p.G13D	SMPH007538A
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G05	KRAS	522	c.35G>C	p.G12A	SMPH007536A
G06	KRAS	517	c.34G>A	p.G12S	SMPH007533A
G07	KRAS	518	c.34G>C	p.G12R	SMPH007534A
G08	KRAS	527	c.37G>T	p.G13C	SMPH007541A
G09	KRAS	554	c.183A>C	p.Q61H	SMPH007540A
G10	KRAS	528	c.37G>A	p.G13S	SMPH007543A
G11	KRAS	553	c.182A>T	p.Q61L	SMPH007544A
G12	KRAS	555	c.183A>T	p.Q61H	SMPH007546A
H01	KRAS	19404	c.436G>A	p.A146T	SMPH007562A
H02	KRAS	529	c.37G>C	p.G13R	SMPH007549A
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H10	KRAS	99000008	copy number	copy number	SMPH017170A
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	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
B	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	SMPC	SMPC
C	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
D	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	SMPC	SMPC
E	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
F	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	SMPC	SMPC
G	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
H	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	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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