

qBiomarker Somatic Mutation PCR Array

Human KIT Gene

Cat. no. 337021 SMH-805AA

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 KIT Gene qBiomarker Somatic Mutation PCR Array allows the detection of 44 unique mutations in the human KIT gene. KIT, a proto-oncogene and a receptor tyrosine kinase, plays a role in cell survival, proliferation, and differentiation. Previous scientific reports have shown a strong association between mutations in the KIT gene and acute myeloid leukemia, gastrointestinal stromal tumors, and melanoma. The KIT mutations found in cancer samples include missense point mutations resulting in gain-of-function (such as the D816V) but also point mutations and deletions in its juxtamembrane domain. The DNA sequence mutation assays in the array detect the most frequent mutations in KIT compiled from over 2,000 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 2 samples, while the 384-well array format profiles 8 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 KIT 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	KIT	1314	c.2447A>T	p.D816V	SMPH007122A
A02	KIT	1326	c. 1509_1510insGCCTAT	p.Y503_F504insAY	SMPH007133A
A03	KIT	1252	c.1676T>A	p.V559D	SMPH007129A
A04	KIT	1257	c.1679T>A	p.V560D	SMPH007114A
A05	KIT	1310	c.2446G>T	p.D816Y	SMPH007144A
A06	KIT	1311	c.2446G>C	p.D816H	SMPH007137A
A07	KIT	1290	c.1727T>C	p.L576P	SMPH007118A
A08	KIT	1323	c.2474T>C	p.V825A	SMPH007117A
A09	KIT	1247	c.1675_1677delGTT	p.V559del	SMPH007131A
A10	KIT	1221	c.1669T>G	p.W557G	SMPH007170A
A11	KIT	1304	c.1924A>G	p.K642E	SMPH007132A
A12	KIT	12706	c.1961T>C	p.V654A	SMPH007172A
B01	KIT	1226	c. 1670_1675delGGAAG G	p.W557_V559>F	SMPH007211A
B02	KIT	28026	c.1621A>C	p.M541L	SMPH007208A
B03	KIT	1294	c.1735_1737delGAT	p.D579del	SMPH007195A
B04	KIT	1332	c.1669_1683del15	p.W557_E561del	SMPH007293A
B05	KIT	1255	c.1676T>C	p.V559A	SMPH007246A
B06	KIT	1219	c.1669T>C	p.W557R	SMPH007164A
B07	KIT	1253	c.1676T>G	p.V559G	SMPH007128A
B08	KIT	1322	c.2466T>G	p.N822K	SMPH007260A
B09	KIT	1321	c.2466T>A	p.N822K	SMPH007146A
B10	KIT	18681	c.2467T>G	p.Y823D	SMPH007206A
B11	KIT	1285	c.1708_1728del21	p.Y570_L576del	SMPH007220A
B12	KIT	1210	c. 1667_1672delAGTGGGA	p.W557_K558del	SMPH007192A
C01	KIT	27909	c.1656_1673del18	p.Y553_K558>	SMPH007203A
C02	KIT	1216	c.1669T>A	p.W557R	SMPH007358A
C03	KIT	18896	c.1673_1687del15	p.K558_E562del	SMPH007329A
C04	KIT	1169	c.1651_1665del15	p.P551_V555del	SMPH007432A
C05	KIT	1306	c.2143_2145delAGC	p.S715del	SMPH007455A
C06	KIT	1312	c.2446_2447GA>TT	p.D816F	SMPH007140A
C07	KIT	1316	c.2459A>G	p.D820G	SMPH007157A
C08	KIT	1248	c. 1675_1680delGTTGTT	p.V559_V560del	SMPH007304A
C09	KIT	1146	c.154G>A	p.D52N	SMPH007360A
C10	KIT	12708	c.2009C>T	p.T670I	SMPH007253A
C11	KIT	1324	c.2515G>A	p.E839K	SMPH007159A
C12	KIT	1251	c.1675G>A	p.V559I	SMPH007175A
D01	KIT	1299	c.1755C>T	p.P585P	SMPH007336A
D02	KIT	1333	c.1679_1680TT>AG	p.V560E	SMPH007366A
D03	KIT	1258	c.1679_1681delTTG	p.V560del	SMPH007125A
D04	KIT	12711	c.2447A>G	p.D816G	SMPH007139A
D05	KIT	12709	c.2460T>A	p.D820E	SMPH007315A
D06	KIT	1297	c.1751T>C	p.F584S	SMPH007388A
D07	KIT	1277	c.1702T>G	p.Y568D	SMPH007449A
D08	KIT	1183	c.1654A>C	p.M552L	SMPH007489A
D09	KIT	99000021	copy number	copy number	SMPH017183A
D10	KIT	99000021	copy number	copy number	SMPH017183A
D11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
D12	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
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E09	KIT	1247	c.1675_1677delGTT	p.V559del	SMPH007131A
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E11	KIT	1304	c.1924A>G	p.K642E	SMPH007132A
E12	KIT	12706	c.1961T>C	p.V654A	SMPH007172A
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F09	KIT	1321	c.2466T>A	p.N822K	SMPH007146A
F10	KIT	18681	c.2467T>G	p.Y823D	SMPH007206A
F11	KIT	1285	c.1708_1728del21	p.Y570_L576del	SMPH007220A
F12	KIT	1210	c. 1667_1672delAGTGGA	p.W557_K558del	SMPH007192A
G01	KIT	27909	c.1656_1673del18	p.Y553_K558>	SMPH007203A
G02	KIT	1216	c.1669T>A	p.W557R	SMPH007358A
G03	KIT	18896	c.1673_1687del15	p.K558_E562del	SMPH007329A
G04	KIT	1169	c.1651_1665del15	p.P551_V555del	SMPH007432A
G05	KIT	1306	c.2143_2145delAGC	p.S715del	SMPH007455A
G06	KIT	1312	c.2446_2447GA>TT	p.D816F	SMPH007140A
G07	KIT	1316	c.2459A>G	p.D820G	SMPH007157A
G08	KIT	1248	c. 1675_1680delGTTGTT	p.V559_Y560del	SMPH007304A
G09	KIT	1146	c.154G>A	p.D52N	SMPH007360A
G10	KIT	12708	c.2009C>T	p.T670I	SMPH007253A
G11	KIT	1324	c.2515G>A	p.E839K	SMPH007159A
G12	KIT	1251	c.1675G>A	p.V559I	SMPH007175A
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H02	KIT	1333	c.1679_1680TT>AG	p.V560E	SMPH007366A
H03	KIT	1258	c.1679_1681delTTG	p.V560del	SMPH007125A
H04	KIT	12711	c.2447A>G	p.D816G	SMPH007139A
H05	KIT	12709	c.2460T>A	p.D820E	SMPH007315A
H06	KIT	1297	c.1751T>C	p.F584S	SMPH007388A
H07	KIT	1277	c.1702T>G	p.Y568D	SMPH007449A
H08	KIT	1183	c.1654A>C	p.M552L	SMPH007489A
H09	KIT	99000021	copy number	copy number	SMPH017183A
H10	KIT	99000021	copy number	copy number	SMPH017183A
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	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT
B	KIT	KIT	KIT	KIT	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	KIT	KIT	KIT	SMPC	SMPC
E	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT
F	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT
G	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT
H	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	KIT	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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