

qBiomarker Somatic Mutation PCR Array

Human PIK3CA Gene

Cat. no. 337021 SMH-808AA

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 PIK3CA Gene qBiomarker Somatic Mutation PCR Array allows the detection of 44 unique mutations in the human PIK3CA gene. PIK3CA, a tumor suppressor gene, regulates cell growth, proliferation, differentiation, motility, survival and intracellular trafficking via interactions with the AKT, insulin, and mTOR signaling pathways. Previous scientific reports have shown a strong association between mutations in the PIK3CA gene and hepatocellular carcinoma as well as cancers of the breast, cervix, colon, lung, stomach, and ovaries. The PIK3CA mutations found in cancer samples are predominately missense point mutations either in the kinase domain, which increase kinase activity, or in the helical domain, which mimic activation by growth factors. The DNA sequence mutation assays in the array detect the most frequent mutations in PIK3CA compiled from over 4,700 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 PIK3CA 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	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
A02	PIK3CA	763	c.1633G>A	p.E545K	SMPH010627A
A03	PIK3CA	760	c.1624G>A	p.E542K	SMPH010629A
A04	PIK3CA	776	c.3140A>T	p.H1047L	SMPH010632A
A05	PIK3CA	12458	c.1634A>C	p.E545A	SMPH010634A
A06	PIK3CA	764	c.1634A>G	p.E545G	SMPH010633A
A07	PIK3CA	766	c.1636C>A	p.Q546K	SMPH010628A
A08	PIK3CA	774	c.3139C>T	p.H1047Y	SMPH010696A
A09	PIK3CA	754	c.1035T>A	p.N345K	SMPH010733A
A10	PIK3CA	773	c.3129G>T	p.M1043I	SMPH010695A
A11	PIK3CA	21451	c.3075C>T	p.T1025T	SMPH010651A
A12	PIK3CA	771	c.3073A>G	p.T1025A	SMPH010686A
B01	PIK3CA	12461	c.3062A>G	p.Y1021C	SMPH010682A
B02	PIK3CA	759	c.1616C>G	p.P539R	SMPH010637A
B03	PIK3CA	12459	c.1637A>G	p.Q546R	SMPH010642A
B04	PIK3CA	12597	c.3145G>C	p.G1049R	SMPH010661A
B05	PIK3CA	12464	c.3204_3205insA	p.N1068fs*4	SMPH010770A
B06	PIK3CA	12591	c.3127A>G	p.M1043V	SMPH010649A
B07	PIK3CA	777	c.3145G>A	p.G1049S	SMPH010659A
B08	PIK3CA	6147	c.1636C>G	p.Q546E	SMPH010708A
B09	PIK3CA	27133	c.1633G>C	p.E545Q	SMPH010709A
B10	PIK3CA	765	c.1635G>T	p.E545D	SMPH010638A
B11	PIK3CA	762	c.1625A>T	p.E542V	SMPH010641A
B12	PIK3CA	767	c.1637A>C	p.Q546P	SMPH010652A
C01	PIK3CA	13570	c.331A>G	p.K111E	SMPH010757A
C02	PIK3CA	27374	c.1635G>C	p.E545D	SMPH010698A
C03	PIK3CA	17442	c.1624G>C	p.E542Q	SMPH010715A
C04	PIK3CA	17447	c.3155C>A	p.T1052K	SMPH010689A
C05	PIK3CA	27493	c.277C>T	p.R93W	SMPH010710A
C06	PIK3CA	27497	c.323G>A	p.R108H	SMPH010714A
C07	PIK3CA	12584	c.1357G>A	p.E453K	SMPH010773A
C08	PIK3CA	12580	c.333G>C	p.K111N	SMPH010778A
C09	PIK3CA	17443	c.3019G>C	p.G1007R	SMPH010631A
C10	PIK3CA	25041	c.1637A>T	p.Q546L	SMPH010660A
C11	PIK3CA	17448	c.3194A>T	p.H1065L	SMPH010688A
C12	PIK3CA	748	c.317G>T	p.G106V	SMPH010703A
D01	PIK3CA	27158	c.3146G>C	p.G1049A	SMPH010732A
D02	PIK3CA	13477	c.3197C>T	p.A1066V	SMPH010749A
D03	PIK3CA	772	c.3074C>A	p.T1025N	SMPH010635A
D04	PIK3CA	21464	c.3044C>T	p.S1015F	SMPH010654A
D05	PIK3CA	28540	c.1564G>A	p.E522K	SMPH010658A
D06	PIK3CA	29095	c.3001C>A	p.L1001I	SMPH010662A
D07	PIK3CA	17446	c.3149G>A	p.G1050D	SMPH010664A
D08	PIK3CA	29108	c.3184A>G	p.I1062V	SMPH010667A
D09	PIK3CA	99000012	copy number	copy number	SMPH017174A
D10	PIK3CA	99000012	copy number	copy number	SMPH017174A
D11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
D12	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
E01	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
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G05	PIK3CA	27493	c.277C>T	p.R93W	SMPH010710A
G06	PIK3CA	27497	c.323G>A	p.R108H	SMPH010714A
G07	PIK3CA	12584	c.1357G>A	p.E453K	SMPH010773A
G08	PIK3CA	12580	c.333G>C	p.K111N	SMPH010778A
G09	PIK3CA	17443	c.3019G>C	p.G1007R	SMPH010631A
G10	PIK3CA	25041	c.1637A>T	p.Q546L	SMPH010660A
G11	PIK3CA	17448	c.3194A>T	p.H1065L	SMPH010688A
G12	PIK3CA	748	c.317G>T	p.G106V	SMPH010703A
H01	PIK3CA	27158	c.3146G>C	p.G1049A	SMPH010732A
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H06	PIK3CA	29095	c.3001C>A	p.L1001I	SMPH010662A
H07	PIK3CA	17446	c.3149G>A	p.G1050D	SMPH010664A
H08	PIK3CA	29108	c.3184A>G	p.I1062V	SMPH010667A
H09	PIK3CA	99000012	copy number	copy number	SMPH017174A
H10	PIK3CA	99000012	copy number	copy number	SMPH017174A
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	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA
B	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA
C	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA
D	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	SMPC	SMPC
E	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA
F	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA
G	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA
H	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	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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