

qBiomarker Somatic Mutation PCR Array

Human Prostate Cancer

Cat. no. 337021 SMH-036BA

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)



Description

The Human Prostate Cancer qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid, accurate, and comprehensive profiling of the somatic mutations in human prostate cancer samples in the following key genes: AKT1, APC, BRAF, CDKN2A, CTNNB1/beta-catenin, EGFR, HRAS, IDH1, KRAS, NRAS, PIK3CA, PTEN, and TP53. These mutations warrant extensive investigation to enhance the understanding of carcinogenesis and identify potential drug targets. Numerous research studies have demonstrated the utility of individual and multiple somatic mutation status information in identifying key signaling transduction disruptions. For example, the mutation status of the EGFR and KRAS genes can predict the physiological response to certain drugs targeting these molecules. The Human Prostate Cancer qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for studying mutations in the context of prostate cancer and has the potential for discovery and development of effective biomarkers for this cancer type and other cancer types in which these mutations were identified. This array includes **84** DNA sequence mutation assays designed to detect the most frequent, functionally verified, and biologically significant mutations in human prostate cancer. These mutations were chosen from curated, comprehensive somatic mutation databases and peer-reviewed scientific literature, and represent the most frequently recurring somatic mutations compiled from over 1700 prostate cancer samples. The simplicity of the product format and operating procedure enables routine somatic mutation profiling in any research laboratory with access to real-time PCR instruments.

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.

Array Table

Well	Gene Symbol	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
A01	AKT1	33765	c.49G>A	p.E17K	SMPH017162A
A02	APC	18561	c.4666_4667insA	p.T1556fs*3	SMPH000579A
A03	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
A04	BRAF	1130	c.1798G>A	p.V600M	SMPH001846A
A05	BRAF	18443	c.1799T>C	p.V600A	SMPH001845A
A06	CDKN2A	13299	c.250G>T	p.D84Y	SMPH002831A
A07	CTNNB1	5661	c.94G>T	p.D32Y	SMPH003956A
A08	CTNNB1	5663	c.133T>C	p.S45P	SMPH003970A
A09	CTNNB1	5664	c.121A>G	p.T41A	SMPH003950A
A10	CTNNB1	5668	c.94G>C	p.D32H	SMPH003967A
A11	CTNNB1	5669	c.98C>T	p.S33F	SMPH003964A
A12	CTNNB1	5670	c.101G>T	p.G34V	SMPH003948A
B01	CTNNB1	5671	c.101G>A	p.G34E	SMPH003960A
B02	CTNNB1	5672	c.94G>A	p.D32N	SMPH003957A
B03	CTNNB1	5676	c.122C>T	p.T41I	SMPH003952A
B04	CTNNB1	5677	c.98C>G	p.S33C	SMPH003963A
B05	CTNNB1	5681	c.95A>G	p.D32G	SMPH003973A
B06	CTNNB1	5691	c.95A>T	p.D32V	SMPH003958A
B07	CTNNB1	6128	c.133_135delTCT	p.S45del	SMPH004022A
B08	EGFR	12988	c.2125G>A	p.E709K	SMPH004670A
B09	HRAS	480	c.34G>A	p.G12S	SMPH006499A
B10	HRAS	483	c.35G>T	p.G12V	SMPH006497A
B11	HRAS	486	c.37G>C	p.G13R	SMPH006498A
B12	HRAS	498	c.182A>T	p.Q61L	SMPH006503A
C01	HRAS	499	c.182A>G	p.Q61R	SMPH006502A
C02	HRAS	502	c.183G>T	p.Q61H	SMPH006516A
C03	IDH1	28746	c.395G>A	p.R132H	SMPH006590A
C04	KRAS	516	c.34G>T	p.G12C	SMPH007535A
C05	KRAS	517	c.34G>A	p.G12S	SMPH007533A
C06	KRAS	520	c.35G>T	p.G12V	SMPH007537A
C07	KRAS	521	c.35G>A	p.G12D	SMPH007531A
C08	KRAS	522	c.35G>C	p.G12A	SMPH007536A
C09	KRAS	528	c.37G>A	p.G13S	SMPH007543A
C10	KRAS	532	c.38G>A	p.G13D	SMPH007538A
C11	KRAS	549	c.181C>A	p.Q61K	SMPH007564A
C12	NRAS	563	c.34G>A	p.G12S	SMPH010075A
D01	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
D02	PTEN	4929	c.17_18delAA	p.K6fs*4	SMPH011501A
D03	PTEN	5033	c.389G>A	p.R130Q	SMPH011486A
D04	PTEN	5152	c.388C>T	p.R130*	SMPH011473A
D05	TP53	6482	c.625_626delAG	p.R209fs*6	SMPH015175A
D06	TP53	6549	c.743G>T	p.R248L	SMPH015015A
D07	TP53	6932	c.733G>A	p.G245S	SMPH014940A

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D08	TP53	10645	c.527G>T	p.C176F	SMPH014960A
D09	TP53	10646	c.725G>A	p.C242Y	SMPH015220A
D10	TP53	10647	c.404G>T	p.C135F	SMPH014911A
D11	TP53	10648	c.524G>A	p.R175H	SMPH014921A
D12	TP53	10654	c.637C>T	p.R213*	SMPH014928A
E01	TP53	10656	c.742C>T	p.R248W	SMPH014929A
E02	TP53	10659	c.817C>T	p.R273C	SMPH014907A
E03	TP53	10662	c.743G>A	p.R248Q	SMPH014902A
E04	TP53	10690	c.473G>A	p.R158H	SMPH014957A
E05	TP53	10704	c.844C>T	p.R282W	SMPH014941A
E06	TP53	10722	c.853G>A	p.E285K	SMPH014937A
E07	TP53	10724	c.839G>C	p.R280T	SMPH014901A
E08	TP53	10725	c.701A>G	p.Y234C	SMPH014944A
E09	TP53	10728	c.839G>A	p.R280K	SMPH015091A
E10	TP53	10731	c.707A>G	p.Y236C	SMPH015023A
E11	TP53	10739	c.481G>A	p.A161T	SMPH015187A
E12	TP53	10742	c.578A>G	p.H193R	SMPH014975A
F01	TP53	10756	c.827C>T	p.A276V	SMPH015209A
F02	TP53	10758	c.659A>G	p.Y220C	SMPH014964A
F03	TP53	10760	c.467G>C	p.R156P	SMPH015042A
F04	TP53	10768	c.535C>T	p.H179Y	SMPH015208A
F05	TP53	10790	c.455C>T	p.P152L	SMPH014958A
F06	TP53	10801	c.404G>A	p.C135Y	SMPH015154A
F07	TP53	10808	c.488A>G	p.Y163C	SMPH014931A
F08	TP53	10817	c.747G>T	p.R249S	SMPH015066A
F09	TP53	10867	c.797G>A	p.G266E	SMPH015003A
F10	TP53	10893	c.824G>A	p.C275Y	SMPH015022A
F11	TP53	10905	c.451C>T	p.P151S	SMPH015043A
F12	TP53	11148	c.476C>T	p.A159V	SMPH014972A
G01	TP53	11245	c.430C>T	p.Q144*	SMPH014994A
G02	TP53	11524	c.730G>T	p.G244C	SMPH015087A
G03	TP53	11582	c.395A>G	p.K132R	SMPH015094A
G04	TP53	43606	c.734G>A	p.G245D	SMPH034441A
G05	TP53	43609	c.437G>A	p.W146*	SMPH034567A
G06	TP53	43650	c.638G>T	p.R213L	SMPH034475A
G07	TP53	43687	c.641A>G	p.H214R	SMPH034420A
G08	TP53	43708	c.422G>A	p.C141Y	SMPH034537A
G09	TP53	43947	c.614A>G	p.Y205C	SMPH034421A
G10	AKT1	N/A	copy number	copy number	SMPH017167A
G11	APC	N/A	copy number	copy number	SMPH017192A
G12	BRAF	N/A	copy number	copy number	SMPH017168A
H01	CDKN2A	N/A	copy number	copy number	SMPH017194A
H02	CTNNB1	N/A	copy number	copy number	SMPH017204A
H03	EGFR	N/A	copy number	copy number	SMPH017169A
H04	HRAS	N/A	copy number	copy number	SMPH017171A
H05	IDH1	N/A	copy number	copy number	SMPH017218A
H06	KRAS	N/A	copy number	copy number	SMPH017170A

Well	Gene Symbol	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
H07	NRAS	N/A	copy number	copy number	SMPH017172A
H08	PIK3CA	N/A	copy number	copy number	SMPH017174A
H09	PTEN	N/A	copy number	copy number	SMPH017175A
H10	TP53	N/A	copy number	copy number	SMPH017203A
H11	SMPC	N/A	positive PCR control	positive PCR control	SMPH017179A
H12	SMPC	N/A	positive PCR control	positive PCR control	SMPH017179A

Array Layout

	1	2	3	4	5	6	7	8	9	10	11	12
A	AKT1	APC	BRAF	BRAF	BRAF	CDKN2A	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1
B	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	EGFR	HRAS	HRAS	HRAS	HRAS
C	HRAS	HRAS	IDH1	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	NRAS
D	PIK3CA	PTEN	PTEN	PTEN	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
E	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
F	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
G	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	AKT1	APC	BRAF
H	CDKN2A	CTNNB1	EGFR	HRAS	IDH1	KRAS	NRAS	PIK3CA	PTEN	TP53	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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