

qBiomarker Somatic Mutation PCR Array

Human Kidney Cancer

Cat. no. 337021 SMH-033CA

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 Kidney Cancer qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid, accurate, and comprehensive profiling of the somatic mutations in human kidney cancer samples in the following key genes: ARID1A, CTNNB1, FAM123B, GNAS, KRAS, MET, MTOR, PIK3CA, TP53, VHL, and WT1. 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 Kidney Cancer qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for studying mutations in the context of kidney 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 kidney 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 kidney 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	ARID1A	28394	c.4238C>T	p.A1413V	SMPH001389A
A02	CTNNB1	5663	c.133T>C	p.S45P	SMPH003970A
A03	CTNNB1	5664	c.121A>G	p.T41A	SMPH003950A
A04	CTNNB1	5667	c.134C>T	p.S45F	SMPH003953A
A05	CTNNB1	5669	c.98C>T	p.S33F	SMPH003964A
A06	CTNNB1	5677	c.98C>G	p.S33C	SMPH003963A
A07	CTNNB1	5678	c.107A>C	p.H36P	SMPH003951A
A08	CTNNB1	5685	c.133T>G	p.S45A	SMPH003966A
A09	CTNNB1	5688	c.121A>C	p.T41P	SMPH004030A
A10	CTNNB1	5689	c.134C>G	p.S45C	SMPH004023A
A11	CTNNB1	5692	c.134C>A	p.S45Y	SMPH003995A
A12	CTNNB1	6128	c.133_135delTCT	p.S45del	SMPH004022A
B01	CTNNB1	6131	c.134_136delCTC	p.S45del	SMPH004151A
B02	CTNNB1	17661	c.130C>G	p.P44A	SMPH004001A
B03	FAM123B	22960	c.1072C>T	p.R358*	SMPH005288A
B04	FAM123B	26677	c.629C>G	p.S210*	SMPH005290A
B05	GNAS	27887	c.601C>T	p.R201C	SMPH006160A
B06	GNAS	27895	c.602G>A	p.R201H	SMPH006159A
B07	KRAS	516	c.34G>T	p.G12C	SMPH007535A
B08	KRAS	520	c.35G>T	p.G12V	SMPH007537A
B09	KRAS	521	c.35G>A	p.G12D	SMPH007531A
B10	KRAS	549	c.181C>A	p.Q61K	SMPH007564A
B11	KRAS	553	c.182A>T	p.Q61L	SMPH007544A
B12	KRAS	554	c.183A>C	p.Q61H	SMPH007540A
C01	MET	690	c.3742T>C	p.Y1248H	SMPH008300A
C02	MET	691	c.3803T>C	p.M1268T	SMPH008293A
C03	MET	699	c.3743A>G	p.Y1248C	SMPH008303A
C04	MET	710	c.1124A>G	p.N375S	SMPH008326A
C05	MTOR	20417	c.6644C>A	p.S2215Y	SMPH005844A
C06	MTOR	26975	c.7514G>C	p.R2505P	SMPH005846A
C07	MTOR	51966	c.7217T>C	p.V2406A	SMPH027637A
C08	PIK3CA	760	c.1624G>A	p.E542K	SMPH010629A
C09	PIK3CA	763	c.1633G>A	p.E545K	SMPH010627A
C10	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
C11	PIK3CA	776	c.3140A>T	p.H1047L	SMPH010632A
C12	PIK3CA	12592	c.3132T>A	p.N1044K	SMPH010760A
D01	PIK3CA	12597	c.3145G>C	p.G1049R	SMPH010661A
D02	TP53	6549	c.743G>T	p.R248L	SMPH015015A
D03	TP53	6932	c.733G>A	p.G245S	SMPH014940A
D04	TP53	10647	c.404G>T	p.C135F	SMPH014911A
D05	TP53	10648	c.524G>A	p.R175H	SMPH014921A
D06	TP53	10656	c.742C>T	p.R248W	SMPH014929A
D07	TP53	10659	c.817C>T	p.R273C	SMPH014907A

Well	Gene Symbol	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
D08	TP53	10662	c.743G>A	p.R248Q	SMPH014902A
D09	TP53	10670	c.469G>T	p.V157F	SMPH014984A
D10	TP53	10690	c.473G>A	p.R158H	SMPH014957A
D11	TP53	10705	c.586C>T	p.R196*	SMPH014949A
D12	TP53	10709	c.722C>G	p.S241C	SMPH014933A
E01	TP53	10725	c.701A>G	p.Y234C	SMPH014944A
E02	TP53	10733	c.574C>T	p.Q192*	SMPH015161A
E03	TP53	10760	c.467G>C	p.R156P	SMPH015042A
E04	TP53	10817	c.747G>T	p.R249S	SMPH015066A
E05	TP53	10863	c.833C>T	p.P278L	SMPH015086A
E06	TP53	10891	c.814G>A	p.V272M	SMPH014987A
E07	TP53	10958	c.797G>T	p.G266V	SMPH014997A
E08	TP53	11073	c.1024C>T	p.R342*	SMPH015065A
E09	TP53	11450	c.644G>T	p.S215I	SMPH015145A
E10	TP53	11516	c.841G>T	p.D281Y	SMPH015068A
E11	TP53	11524	c.730G>T	p.G244C	SMPH015087A
E12	TP53	11582	c.395A>G	p.K132R	SMPH015094A
F01	TP53	43559	c.517G>T	p.V173L	SMPH034455A
F02	TP53	43697	c.832C>A	p.P278T	SMPH034792A
F03	VHL	14290	c.240T>A	p.S80R	SMPH015875A
F04	VHL	14305	c.266T>A	p.L89H	SMPH016097A
F05	VHL	14311	c.499C>T	p.R167W	SMPH016100A
F06	VHL	14368	c.473T>A	p.L158Q	SMPH016140A
F07	VHL	14372	c.203C>A	p.S68*	SMPH016052A
F08	VHL	14380	c.548C>A	p.S183*	SMPH016332A
F09	VHL	14389	c.452T>G	p.I151S	SMPH015829A
F10	VHL	14400	c.194C>T	p.S65L	SMPH016068A
F11	VHL	14407	c.388G>C	p.V130L	SMPH015927A
F12	VHL	17612	c.481C>T	p.R161*	SMPH015840A
G01	VHL	17642	c.340G>T	p.G114C	SMPH016083A
G02	VHL	17657	c.472C>G	p.L158V	SMPH015805A
G03	VHL	17658	c.286C>T	p.Q96*	SMPH016181A
G04	VHL	17711	c.208G>T	p.E70*	SMPH015824A
G05	VHL	17721	c.241C>T	p.P81S	SMPH016086A
G06	VHL	17735	c.444delT	p.F148fs*11	SMPH015969A
G07	VHL	17859	c.254T>C	p.L85P	SMPH016010A
G08	VHL	18015	c.194C>A	p.S65*	SMPH015837A
G09	VHL	25687	c.227_229delTCT	p.F76del	SMPH015873A
G10	WT1	21397	c.1168C>T	p.R390*	SMPH016744A
G11	WT1	27307	c.938C>A	p.S313*	SMPH016803A
G12	ARID1A	N/A	copy number	copy number	SMPH038623A
H01	CTNNB1	N/A	copy number	copy number	SMPH017204A
H02	FAM123B	N/A	copy number	copy number	SMPH038637A
H03	GNAS	N/A	copy number	copy number	SMPH017201A
H04	KRAS	N/A	copy number	copy number	SMPH017170A
H05	MET	N/A	copy number	copy number	SMPH017184A
H06	MTOR	N/A	copy number	copy number	SMPH086726A

Well	Gene Symbol	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
H07	PIK3CA	N/A	copy number	copy number	SMPH017174A
H08	TP53	N/A	copy number	copy number	SMPH017203A
H09	VHL	N/A	copy number	copy number	SMPH017186A
H10	WT1	N/A	copy number	copy number	SMPH017224A
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	ARID1A	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1
B	CTNNB1	CTNNB1	FAM123B	FAM123B	GNAS	GNAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
C	MET	MET	MET	MET	MTOR	MTOR	MTOR	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA
D	PIK3CA	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
E	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
F	TP53	TP53	VHL	VHL	VHL	VHL	VHL	VHL	VHL	VHL	VHL	VHL
G	VHL	VHL	VHL	VHL	VHL	VHL	VHL	VHL	VHL	WT1	WT1	ARID1A
H	CTNNB1	FAM123B	GNAS	KRAS	MET	MTOR	PIK3CA	TP53	VHL	WT1	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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