

# qBiomarker Somatic Mutation PCR Array

## Human Endometrial Cancer

Cat. no. 337021 SMH-032BA

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 Endometrial Cancer qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid, accurate, and comprehensive profiling of the somatic mutations in human endometrial cancer samples in the following key genes: AKT1, BRAF, CTNNB1/beta-catenin, FBXW7, FGFR2, HRAS, KRAS, PIK3CA, PTEN, and P53. 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 Endometrial Cancer qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for studying mutations in the context of endometrial 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 endometrial 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 endometrial 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  $-20^{\circ}\text{C}$ . 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  $4^{\circ}\text{C}$ .

**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.

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## Assay table

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
A01	AKT1	33765	c.49G>A	p.E17K	SMPH017162A
A01	AKT1	33765	c.49G>A	p.E17K	SMPH017162A
A02	BRAF	33727	c.1415A>C	p.Y472S	SMPH001913A
A02	BRAF	33727	c.1415A>C	p.Y472S	SMPH001913A
A03	BRAF	6137	c.1799T>G	p.V600G	SMPH001912A
A03	BRAF	6137	c.1799T>G	p.V600G	SMPH001912A
A04	CTNNB1	5686	c.100G>A	p.G34R	SMPH003974A
A04	CTNNB1	5686	c.100G>A	p.G34R	SMPH003974A
A05	CTNNB1	5671	c.101G>A	p.G34E	SMPH003960A
A05	CTNNB1	5671	c.101G>A	p.G34E	SMPH003960A
A06	CTNNB1	5670	c.101G>T	p.G34V	SMPH003948A
A06	CTNNB1	5670	c.101G>T	p.G34V	SMPH003948A
A07	CTNNB1	5687	c.109T>C	p.S37P	SMPH003981A
A07	CTNNB1	5687	c.109T>C	p.S37P	SMPH003981A
A08	CTNNB1	5675	c.109T>G	p.S37A	SMPH003985A
A08	CTNNB1	5675	c.109T>G	p.S37A	SMPH003985A
A09	CTNNB1	5679	c.110C>G	p.S37C	SMPH003962A
A09	CTNNB1	5679	c.110C>G	p.S37C	SMPH003962A
A10	CTNNB1	5662	c.110C>T	p.S37F	SMPH003946A
A10	CTNNB1	5662	c.110C>T	p.S37F	SMPH003946A
A11	CTNNB1	5664	c.121A>G	p.T41A	SMPH003950A
A11	CTNNB1	5664	c.121A>G	p.T41A	SMPH003950A
A12	CTNNB1	5676	c.122C>T	p.T41I	SMPH003952A
A12	CTNNB1	5676	c.122C>T	p.T41I	SMPH003952A
B01	CTNNB1	5663	c.133T>C	p.S45P	SMPH003970A
B01	CTNNB1	5663	c.133T>C	p.S45P	SMPH003970A
B02	CTNNB1	5667	c.134C>T	p.S45F	SMPH003953A
B02	CTNNB1	5667	c.134C>T	p.S45F	SMPH003953A
B03	CTNNB1	5672	c.94G>A	p.D32N	SMPH003957A
B03	CTNNB1	5672	c.94G>A	p.D32N	SMPH003957A
B04	CTNNB1	5668	c.94G>C	p.D32H	SMPH003967A
B04	CTNNB1	5668	c.94G>C	p.D32H	SMPH003967A
B05	CTNNB1	5661	c.94G>T	p.D32Y	SMPH003956A
B05	CTNNB1	5661	c.94G>T	p.D32Y	SMPH003956A
B06	CTNNB1	5690	c.95A>C	p.D32A	SMPH003965A
B06	CTNNB1	5690	c.95A>C	p.D32A	SMPH003965A
B07	CTNNB1	5682	c.97T>C	p.S33P	SMPH003969A
B07	CTNNB1	5682	c.97T>C	p.S33P	SMPH003969A
B08	CTNNB1	5683	c.97T>G	p.S33A	SMPH003968A
B08	CTNNB1	5683	c.97T>G	p.S33A	SMPH003968A
B09	CTNNB1	5673	c.98C>A	p.S33Y	SMPH003959A
B09	CTNNB1	5673	c.98C>A	p.S33Y	SMPH003959A
B10	CTNNB1	5677	c.98C>G	p.S33C	SMPH003963A
B10	CTNNB1	5677	c.98C>G	p.S33C	SMPH003963A
B11	CTNNB1	5669	c.98C>T	p.S33F	SMPH003964A
B11	CTNNB1	5669	c.98C>T	p.S33F	SMPH003964A
B12	FBXW7	22974	c.1436G>A	p.R479Q	SMPH005404A
B12	FBXW7	22974	c.1436G>A	p.R479Q	SMPH005404A
C01	FGFR2	36902	c.1647T>G	p.N549K	SMPH005506A
C01	FGFR2	36902	c.1647T>G	p.N549K	SMPH005506A
C02	FGFR2	36903	c.755C>G	p.S252W	SMPH005503A
C02	FGFR2	36903	c.755C>G	p.S252W	SMPH005503A
C03	HRAS	502	c.183G>T	p.Q61H	SMPH006516A
C03	HRAS	502	c.183G>T	p.Q61H	SMPH006516A
C04	KRAS	554	c.183A>C	p.Q61H	SMPH007540A
C04	KRAS	554	c.183A>C	p.Q61H	SMPH007540A
C05	KRAS	517	c.34G>A	p.G12S	SMPH007533A
C05	KRAS	517	c.34G>A	p.G12S	SMPH007533A
C06	KRAS	518	c.34G>C	p.G12R	SMPH007534A
C06	KRAS	518	c.34G>C	p.G12R	SMPH007534A
C07	KRAS	516	c.34G>T	p.G12C	SMPH007535A
C07	KRAS	516	c.34G>T	p.G12C	SMPH007535A
C08	KRAS	521	c.35G>A	p.G12D	SMPH007531A
C08	KRAS	521	c.35G>A	p.G12D	SMPH007531A
C09	KRAS	522	c.35G>C	p.G12A	SMPH007536A
C09	KRAS	522	c.35G>C	p.G12A	SMPH007536A
C10	KRAS	520	c.35G>T	p.G12V	SMPH007537A
C10	KRAS	520	c.35G>T	p.G12V	SMPH007537A
C11	KRAS	527	c.37G>T	p.G13C	SMPH007541A
C11	KRAS	527	c.37G>T	p.G13C	SMPH007541A
C12	KRAS	532	c.38G>A	p.G13D	SMPH007538A
C12	KRAS	532	c.38G>A	p.G13D	SMPH007538A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
D01	KRAS	533	c.38G>C	p.G13A	SMPH007542A
D01	KRAS	533	c.38G>C	p.G13A	SMPH007542A
D02	PIK3CA	760	c.1624G>A	p.E542K	SMPH010629A
D02	PIK3CA	760	c.1624G>A	p.E542K	SMPH010629A
D03	PIK3CA	763	c.1633G>A	p.E545K	SMPH010627A
D03	PIK3CA	763	c.1633G>A	p.E545K	SMPH010627A
D04	PIK3CA	12458	c.1634A>C	p.E545A	SMPH010634A
D04	PIK3CA	12458	c.1634A>C	p.E545A	SMPH010634A
D05	PIK3CA	764	c.1634A>G	p.E545G	SMPH010633A
D05	PIK3CA	764	c.1634A>G	p.E545G	SMPH010633A
D06	PIK3CA	27374	c.1635G>C	p.E545D	SMPH010698A
D06	PIK3CA	27374	c.1635G>C	p.E545D	SMPH010698A
D07	PIK3CA	766	c.1636C>A	p.Q546K	SMPH010628A
D07	PIK3CA	766	c.1636C>A	p.Q546K	SMPH010628A
D08	PIK3CA	6147	c.1636C>G	p.Q546E	SMPH010708A
D08	PIK3CA	6147	c.1636C>G	p.Q546E	SMPH010708A
D09	PIK3CA	12461	c.3062A>G	p.Y1021C	SMPH010682A
D09	PIK3CA	12461	c.3062A>G	p.Y1021C	SMPH010682A
D10	PIK3CA	771	c.3073A>G	p.T1025A	SMPH010686A
D10	PIK3CA	771	c.3073A>G	p.T1025A	SMPH010686A
D11	PIK3CA	773	c.3129G>T	p.M1043I	SMPH010695A
D11	PIK3CA	773	c.3129G>T	p.M1043I	SMPH010695A
D12	PIK3CA	774	c.3139C>T	p.H1047Y	SMPH010696A
D12	PIK3CA	774	c.3139C>T	p.H1047Y	SMPH010696A
E01	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
E01	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
E02	PIK3CA	776	c.3140A>T	p.H1047L	SMPH010632A
E02	PIK3CA	776	c.3140A>T	p.H1047L	SMPH010632A
E03	PIK3CA	12597	c.3145G>C	p.G1049R	SMPH010661A
E03	PIK3CA	12597	c.3145G>C	p.G1049R	SMPH010661A
E04	PIK3CA	17447	c.3155C>A	p.T1052K	SMPH010689A
E04	PIK3CA	17447	c.3155C>A	p.T1052K	SMPH010689A
E05	PIK3CA	17448	c.3194A>T	p.H1065L	SMPH010688A
E05	PIK3CA	17448	c.3194A>T	p.H1065L	SMPH010688A
E06	PTEN	4936	c.1040_1041delTC	p.F347fs*13	SMPH012222A
E06	PTEN	4936	c.1040_1041delTC	p.F347fs*13	SMPH012222A
E07	PTEN	4929	c.17_18delAA	p.K6fs*4	SMPH011501A
E07	PTEN	4929	c.17_18delAA	p.K6fs*4	SMPH011501A
E08	PTEN	4956	c.227_228delAT	p.Y76fs*1	SMPH011617A
E08	PTEN	4956	c.227_228delAT	p.Y76fs*1	SMPH011617A
E09	PTEN	5199	c.334C>G	p.L112V	SMPH011516A
E09	PTEN	5199	c.334C>G	p.L112V	SMPH011516A
E10	PTEN	5078	c.367C>T	p.H123Y	SMPH011588A
E10	PTEN	5078	c.367C>T	p.H123Y	SMPH011588A
E11	PTEN	5219	c.388C>G	p.R130G	SMPH011480A
E11	PTEN	5219	c.388C>G	p.R130G	SMPH011480A
E12	PTEN	5152	c.388C>T	p.R130*	SMPH011473A
E12	PTEN	5152	c.388C>T	p.R130*	SMPH011473A
F01	PTEN	5817	c.389delG	p.R130fs*4	SMPH011514A
F01	PTEN	5817	c.389delG	p.R130fs*4	SMPH011514A
F02	PTEN	5033	c.389G>A	p.R130Q	SMPH011486A
F02	PTEN	5033	c.389G>A	p.R130Q	SMPH011486A
F03	PTEN	5277	c.389G>C	p.R130P	SMPH011620A
F03	PTEN	5277	c.389G>C	p.R130P	SMPH011620A
F04	PTEN	5216	c.389G>T	p.R130L	SMPH011591A
F04	PTEN	5216	c.389G>T	p.R130L	SMPH011591A
F05	PTEN	5080	c.451G>A	p.A151T	SMPH012265A
F05	PTEN	5080	c.451G>A	p.A151T	SMPH012265A
F06	PTEN	5847	c.491delA	p.K164fs*3	SMPH011505A
F06	PTEN	5847	c.491delA	p.K164fs*3	SMPH011505A
F07	PTEN	5091	c.493G>A	p.G165R	SMPH011583A
F07	PTEN	5091	c.493G>A	p.G165R	SMPH011583A
F08	PTEN	5089	c.517C>T	p.R173C	SMPH011475A
F08	PTEN	5089	c.517C>T	p.R173C	SMPH011475A
F09	PTEN	5150	c.640C>T	p.Q214*	SMPH011797A
F09	PTEN	5150	c.640C>T	p.Q214*	SMPH011797A
F10	PTEN	5154	c.697C>T	p.R233*	SMPH011506A
F10	PTEN	5154	c.697C>T	p.R233*	SMPH011506A
F11	PTEN	5292	c.703G>T	p.E235*	SMPH011869A
F11	PTEN	5292	c.703G>T	p.E235*	SMPH011869A
F12	PTEN	5159	c.733C>T	p.Q245*	SMPH011578A
F12	PTEN	5159	c.733C>T	p.Q245*	SMPH011578A
G01	PTEN	4986	c.741_742insA	p.P248fs*5	SMPH011468A
G01	PTEN	4986	c.741_742insA	p.P248fs*5	SMPH011468A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
G02	PTEN	5312	c.895G>T	p.E299*	SMPH011515A
G02	PTEN	5312	c.895G>T	p.E299*	SMPH011515A
G03	PTEN	4898	c.950_953delTACT	p.V317fs*3	SMPH011511A
G03	PTEN	4898	c.950_953delTACT	p.V317fs*3	SMPH011511A
G04	PTEN	4894	c.952_955delCTTA	p.L318fs*2	SMPH011686A
G04	PTEN	4894	c.952_955delCTTA	p.L318fs*2	SMPH011686A
G05	PTEN	5008	c.955_956insA	p.T319fs*6	SMPH011510A
G05	PTEN	5008	c.955_956insA	p.T319fs*6	SMPH011510A
G06	PTEN	4958	c.955_958delACTT	p.T319fs*1	SMPH011550A
G06	PTEN	39513	c.1133_1136delGATA	p.R378fs*>25	SMPH011742A
G07	PTEN	4896	c.956_959delCTTT	p.T319fs*24	SMPH011710A
G07	PTEN	4896	c.956_959delCTTT	p.T319fs*24	SMPH011710A
G08	PTEN	4990	c.968_969insA	p.N323fs*2	SMPH011534A
G08	PTEN	4990	c.968_969insA	p.N323fs*2	SMPH011534A
G09	TP53	10648	c.524G>A	p.R175H	SMPH014921A
G09	TP53	10648	c.524G>A	p.R175H	SMPH014921A
G10	TP53	10654	c.637C>T	p.R213*	SMPH014928A
G10	TP53	10654	c.637C>T	p.R213*	SMPH014928A
G11	TP53	10656	c.742C>T	p.R248W	SMPH014929A
G11	TP53	10656	c.742C>T	p.R248W	SMPH014929A
G12	TP53	10659	c.817C>T	p.R273C	SMPH014907A
G12	TP53	10659	c.817C>T	p.R273C	SMPH014907A
H01	AKT1	99000005	copy number	copy number	SMPH017167A
H01	AKT1	99000005	copy number	copy number	SMPH017167A
H02	BRAF	99000006	copy number	copy number	SMPH017168A
H02	BRAF	99000006	copy number	copy number	SMPH017168A
H03	CTNNB1	99000042	copy number	copy number	SMPH017204A
H03	CTNNB1	99000042	copy number	copy number	SMPH017204A
H04	FBXW7	99000063	copy number	copy number	SMPH017225A
H04	FBXW7	99000063	copy number	copy number	SMPH017225A
H05	FGFR2	99000019	copy number	copy number	SMPH017181A
H05	FGFR2	99000019	copy number	copy number	SMPH017181A
H06	HRAS	99000009	copy number	copy number	SMPH017171A
H06	HRAS	99000009	copy number	copy number	SMPH017171A
H07	KRAS	99000008	copy number	copy number	SMPH017170A
H07	KRAS	99000008	copy number	copy number	SMPH017170A
H08	PIK3CA	99000012	copy number	copy number	SMPH017174A
H08	PIK3CA	99000012	copy number	copy number	SMPH017174A
H09	PTEN	99000013	copy number	copy number	SMPH017175A
H09	PTEN	99000013	copy number	copy number	SMPH017175A
H10	TP53	99000041	copy number	copy number	SMPH017203A
H10	TP53	99000041	copy number	copy number	SMPH017203A
H11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
H11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
H12	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	AKT1	AKT1	BRAF	BRAF	BRAF	BRAF	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1
B	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1
C	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1
D	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	CTNNB1	FBXW7	FBXW7
E	FGFR2	FGFR2	FGFR2	FGFR2	HRAS	HRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
F	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
G	KRAS	KRAS	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA
H	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA

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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Sample & Assay Technologies