

qBiomarker Somatic Mutation PCR Array

Human Lymphoid Neoplasms

Cat. no. 337021 SMH-026A

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 Lymphoid Neoplasm qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid, accurate, and comprehensive profiling of the top somatic mutations in human lymphoid neoplasms in the following genes: ABL1, ATM, BRAF, CDKN2A, CRLF2, CTNNB1/beta-catenin, EZH2, FBXW7, FGFR3, FLT3, HRAS, JAK2, KIT, KRAS, NOTCH1, NRAS, PIK3CA, PTPN11, 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 Lymphoid Neoplasm qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for the study of mutations in the context of lymphoid neoplasms and has the potential for discovery and verification of drug target biomarkers for this cancer type and other cancer types in which these mutations have been identified. This array includes 75 DNA sequence mutation assays designed to detect the most frequent, functionally verified, and biologically significant mutations in human lymphoid neoplasms. 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 4000 lymphoid neoplasm samples. The simplicity of the product format and operating procedure allows 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 cyler (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	ABL1	12576	c.757T>C	p.Y253H	SMPH000062A
A02	ABL1	12573	c.763G>A	p.E255K	SMPH000061A
A03	ABL1	12560	c.944C>T	p.T315I	SMPH000059A
A04	ATM	21826	c.2572T>C	p.F858L	SMPH001498A
A05	ATM	21642	c.9022C>T	p.R3008C	SMPH001484A
A06	ATM	21626	c.9023G>A	p.R3008H	SMPH001470A
A07	BRAF	460	c.1406G>C	p.G469A	SMPH001906A
A08	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
A09	CDKN2A	12475	c.238C>T	p.R80*	SMPH002667A
A10	CRLF2	41268	c.695T>G	p.F232C	SMPH003850A
A11	CTNNB1	5699	c.128C>T	p.A43V	SMPH003939A
A12	CTNNB1	5733	c.143G>A	p.G48D	SMPH003935A
B01	CTNNB1	5737	c.157G>A	p.E53K	SMPH003937A
B02	CTNNB1	5705	c.172G>A	p.D58N	SMPH004042A
B03	EZH2	37031	c.1936T>A	p.Y646N	SMPH022879A
B04	EZH2	37029	c.1937A>C	p.Y646S	SMPH022880A
B05	EZH2	37028	c.1937A>T	p.Y646F	SMPH022878A
B06	FBXW7	22932	c.1393C>T	p.R465C	SMPH005382A
B07	FBXW7	22965	c.1394G>A	p.R465H	SMPH005386A
B08	FBXW7	22974	c.1436G>A	p.R479Q	SMPH005404A
B09	FBXW7	22975	c.1513C>T	p.R505C	SMPH005417A
B10	FGFR3	718	c.1118A>G	p.Y373C	SMPH005550A
B11	FGFR3	719	c.1948A>G	p.K650E	SMPH005557A
B12	FLT3	785	c.2503G>C	p.D835H	SMPH005662A
C01	FLT3	783	c.2503G>T	p.D835Y	SMPH005661A
C02	HRAS	499	c.182A>G	p.Q61R	SMPH006502A
C03	JAK2	12600	c.1849G>T	p.V617F	SMPH006837A
C04	JAK2	29300	c.2047A>G	p.R683G	SMPH006891A
C05	JAK2	29302	c.2049A>T	p.R683S	SMPH006890A
C06	KIT	1219	c.1669T>C	p.W557R	SMPH007164A
C07	KIT	1323	c.2474T>C	p.V825A	SMPH007117A
C08	KRAS	517	c.34G>A	p.G12S	SMPH007533A
C09	KRAS	516	c.34G>T	p.G12C	SMPH007535A
C10	KRAS	521	c.35G>A	p.G12D	SMPH007531A
C11	KRAS	522	c.35G>C	p.G12A	SMPH007536A
C12	KRAS	520	c.35G>T	p.G12V	SMPH007537A
D01	KRAS	532	c.38G>A	p.G13D	SMPH007538A
D02	NOTCH1	12772	c.4724T>C	p.L1575P	SMPH009661A
D03	NOTCH1	13047	c.4735_4737delGTG	p.V1579del	SMPH009660A
D04	NOTCH1	13046	c.4757T>C	p.L1586P	SMPH009662A
D05	NOTCH1	13042	c.4781T>C	p.L1594P	SMPH009666A
D06	NOTCH1	13053	c.4796G>C	p.R1599P	SMPH009667A
D07	NOTCH1	12771	c.4802T>C	p.L1601P	SMPH009669A
D08	NOTCH1	13048	c.5036T>C	p.L1679P	SMPH009677A
D09	NOTCH1	12776	c.7378C>T	p.Q2460*	SMPH009759A
D10	NRAS	580	c.181C>A	p.Q61K	SMPH010073A
D11	NRAS	582	c.182A>C	p.Q61P	SMPH010096A
D12	NRAS	584	c.182A>G	p.Q61R	SMPH010069A
E01	NRAS	583	c.182A>T	p.Q61L	SMPH010076A
E02	NRAS	586	c.183A>C	p.Q61H	SMPH010072A
E03	NRAS	585	c.183A>T	p.Q61H	SMPH010068A
E04	NRAS	563	c.34G>A	p.G12S	SMPH010075A
E05	NRAS	562	c.34G>T	p.G12C	SMPH010078A
E06	NRAS	564	c.35G>A	p.G12D	SMPH010071A
E07	NRAS	565	c.35G>C	p.G12A	SMPH010066A
E08	NRAS	566	c.35G>T	p.G12V	SMPH010067A
E09	NRAS	569	c.37G>C	p.G13R	SMPH010074A
E10	NRAS	573	c.38G>A	p.G13D	SMPH010070A
E11	NRAS	574	c.38G>T	p.G13V	SMPH010082A
E12	PIK3CA	776	c.3140A>T	p.H1047L	SMPH010632A
F01	PTPN11	13011	c.181G>T	p.D61Y	SMPH012376A
F02	PTPN11	13013	c.205G>A	p.E69K	SMPH012378A
F03	PTPN11	13015	c.215C>T	p.A72V	SMPH012390A
F04	PTPN11	13000	c.226G>A	p.E76K	SMPH012382A
F05	TP53	10648	c.524G>A	p.R175H	SMPH014921A
F06	TP53	10705	c.586C>T	p.R196*	SMPH014949A
F07	TP53	10654	c.637C>T	p.R213*	SMPH014928A
F08	TP53	10725	c.701A>G	p.Y234C	SMPH014944A
F09	TP53	6932	c.733G>A	p.G245S	SMPH014940A
F10	TP53	10656	c.742C>T	p.R248W	SMPH014929A
F11	TP53	10662	c.743G>A	p.R248Q	SMPH014902A
F12	TP53	10659	c.817C>T	p.R273C	SMPH014907A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
G01	TP53	10660	c.818G>A	p.R273H	SMPH014913A
G02	TP53	10701	c.824G>T	p.C275F	SMPH014991A
G03	TP53	10704	c.844C>T	p.R282W	SMPH014941A
G04	ABL1	99000065	copy number	copy number	SMPH017227A
G05	ATM	99000031	copy number	copy number	SMPH017193A
G06	BRAF	99000006	copy number	copy number	SMPH017168A
G07	CDKN2A	99000032	copy number	copy number	SMPH017194A
G08	CRLF2	99000029	copy number	copy number	SMPH017191A
G09	CTNNB1	99000042	copy number	copy number	SMPH017204A
G10	EZH2	99000067	copy number	copy number	SMPH017229A
G11	FBXW7	99000063	copy number	copy number	SMPH017225A
G12	FGFR3	99000020	copy number	copy number	SMPH017182A
H01	FLT3	99000015	copy number	copy number	SMPH017177A
H02	HRAS	99000009	copy number	copy number	SMPH017171A
H03	JAK2	99000025	copy number	copy number	SMPH017187A
H04	KIT	99000021	copy number	copy number	SMPH017183A
H05	KRAS	99000008	copy number	copy number	SMPH017170A
H06	NOTCH1	99000059	copy number	copy number	SMPH017221A
H07	NRAS	99000010	copy number	copy number	SMPH017172A
H08	PIK3CA	99000012	copy number	copy number	SMPH017174A
H09	PTPN11	99000023	copy number	copy number	SMPH017185A
H10	TP53	99000041	copy number	copy number	SMPH017203A
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	ABL1	ABL1	ABL1	ATM	ATM	ATM	BRAF	BRAF	CDKN2A	CRLF2	CTNNB1	CTNNB1
B	CTNNB1	CTNNB1	EZH2	EZH2	EZH2	FBXW7	FBXW7	FBXW7	FBXW7	FGFR3	FGFR3	FLT3
C	FLT3	HRAS	JAK2	JAK2	JAK2	KIT	KIT	KRAS	KRAS	KRAS	KRAS	KRAS
D	KRAS	NOTCH1	NOTCH1	NOTCH1	NOTCH1	NOTCH1	NOTCH1	NOTCH1	NOTCH1	NRAS	NRAS	NRAS
E	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	PIK3CA
F	PTPN11	PTPN11	PTPN11	PTPN11	TP53	TP53	TP53	TP53	TP53	TP53	TP53	TP53
G	TP53	TP53	TP53	ABL1	ATM	BRAF	CDKN2A	CRLF2	CTNNB1	EZH2	FBXW7	FGFR3
H	FLT3	HRAS	JAK2	KIT	KRAS	NOTCH1	NRAS	PIK3CA	PTPN11	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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