

qBiomarker Somatic Mutation PCR Array

Human c-MET Pathway

Cat. no. 337021 SMH-007

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

c-MET (also known as MET, HGFR) is a membrane receptor essential for embryonic development and wound healing. Hepatocyte growth factor (HGF) is the only known ligand of the c-MET receptor. c-MET is deregulated in many types of human malignancies, including cancers of the kidneys, liver, stomach, breast, and brain. Abnormal MET activation in cancer correlates with poor prognosis, where aberrantly active c-MET triggers tumor growth, angiogenesis and metastasis. c-MET activation triggers several key downstream oncogenic pathways including the Ras-MAPK, PI3K, STAT, beta-catenin, and Notch pathways. The Human c-MET Pathway qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid and accurate profiling of the somatic mutation status of the c-MET gene and additional key genes in two major c-MET downstream signaling pathways: the Ras-MAPK pathway and the PI3K pathway. The utility of individual and multiple somatic mutation status information in identifying key signaling transduction disruptions has been demonstrated in numerous research studies. For example, the mutation status of the EGFR and KRAS genes can predict the physiological response to certain drugs targeting these molecules. The c-MET Pathway qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for studying mutations in the context of the c-MET pathway and has the potential for discovering drug target biomarkers for a variety of human cancers involving the c-MET signaling pathway and downstream effectors. This array covers 83 DNA sequence mutation assays designed to detect the most frequent, functionally verified, and biologically most significant mutations in the c-MET pathway. These mutations were chosen from curated, comprehensive somatic mutation databases and peer-reviewed scientific literature. 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 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	AKT1	33765	c.49G>A	p.E17K	SMPH017162A
A02	BRAF	460	c.1406G>C	p.G469A	SMPH001906A
A03	BRAF	470	c.1789C>G	p.L597V	SMPH001869A
A04	BRAF	1130	c.1798G>A	p.V600M	SMPH001846A
A05	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
A06	BRAF	18443	c.1799T>C	p.V600A	SMPH001845A
A07	BRAF	6137	c.1799T>G	p.V600G	SMPH001912A
A08	MET	710	c.1124A>G	p.N375S	SMPH008326A
A09	MET	29632	c.2942_3082del141	p.L982_D1028del	SMPH008291A
A10	MET	705	c.2962C>T	p.R988C	SMPH008317A
A11	MET	707	c.3029C>T	p.T1010I	SMPH008297A
A12	MET	690	c.3742T>C	p.Y1248H	SMPH008300A
B01	MET	699	c.3743A>G	p.Y1248C	SMPH008303A
B02	MET	700	c.3757T>G	p.Y1253D	SMPH008298A
B03	MET	691	c.3803T>C	p.M1268T	SMPH008293A
B04	MET	706	c.504G>T	p.E168D	SMPH008323A
B05	PTPN11	13020	c.1504T>C	p.S502P	SMPH012393A
B06	PTPN11	13027	c.1508G>C	p.G503A	SMPH012401A
B07	PTPN11	14271	c.1508G>T	p.G503V	SMPH012402A
B08	PTPN11	13028	c.179G>T	p.G60V	SMPH012377A
B09	PTPN11	13011	c.181G>T	p.D61Y	SMPH012376A
B10	PTPN11	13022	c.182A>T	p.D61V	SMPH012385A
B11	PTPN11	13013	c.205G>A	p.E69K	SMPH012378A
B12	PTPN11	13014	c.214G>A	p.A72T	SMPH012384A
C01	PTPN11	13035	c.215C>A	p.A72D	SMPH012386A
C02	PTPN11	13019	c.218C>T	p.T73I	SMPH012398A
C03	PTPN11	13000	c.226G>A	p.E76K	SMPH012382A
C04	PTPN11	13016	c.226G>C	p.E76Q	SMPH012388A
C05	PTPN11	13026	c.227A>C	p.E76A	SMPH012392A
C06	PTPN11	13017	c.227A>G	p.E76G	SMPH012387A
C07	PTPN11	13025	c.227A>T	p.E76V	SMPH012389A
C08	VHL	14290	c.240T>A	p.S80R	SMPH015875A
C09	VHL	17859	c.254T>C	p.L85P	SMPH016010A
C10	VHL	14305	c.266T>A	p.L89H	SMPH016097A
C11	VHL	17658	c.286C>T	p.Q96*	SMPH016181A
C12	VHL	14407	c.388G>C	p.V130L	SMPH015927A
D01	VHL	17735	c.444delT	p.F148fs*11	SMPH015969A
D02	KRAS	553	c.182A>T	p.Q61L	SMPH007544A
D03	KRAS	555	c.183A>T	p.Q61H	SMPH007546A
D04	KRAS	517	c.34G>A	p.G12S	SMPH007533A
D05	KRAS	518	c.34G>C	p.G12R	SMPH007534A
D06	KRAS	516	c.34G>T	p.G12C	SMPH007535A
D07	KRAS	521	c.35G>A	p.G12D	SMPH007531A
D08	KRAS	522	c.35G>C	p.G12A	SMPH007536A
D09	KRAS	520	c.35G>T	p.G12V	SMPH007537A
D10	KRAS	528	c.37G>A	p.G13S	SMPH007543A
D11	KRAS	529	c.37G>C	p.G13R	SMPH007549A
D12	KRAS	527	c.37G>T	p.G13C	SMPH007541A
E01	KRAS	532	c.38G>A	p.G13D	SMPH007538A
E02	HRAS	496	c.181C>A	p.Q61K	SMPH006505A
E03	HRAS	499	c.182A>G	p.Q61R	SMPH006502A
E04	HRAS	498	c.182A>T	p.Q61L	SMPH006503A
E05	HRAS	480	c.34G>A	p.G12S	SMPH006499A
E06	HRAS	481	c.34G>T	p.G12C	SMPH006500A
E07	HRAS	484	c.35G>A	p.G12D	SMPH006507A
E08	HRAS	483	c.35G>T	p.G12V	SMPH006497A
E09	HRAS	486	c.37G>C	p.G13R	SMPH006498A
E10	NRAS	580	c.181C>A	p.Q61K	SMPH010073A
E11	NRAS	582	c.182A>C	p.Q61P	SMPH010096A
E12	NRAS	584	c.182A>G	p.Q61R	SMPH010069A
F01	NRAS	583	c.182A>T	p.Q61L	SMPH010076A
F02	NRAS	563	c.34G>A	p.G12S	SMPH010075A
F03	NRAS	564	c.35G>A	p.G12D	SMPH010071A
F04	NRAS	565	c.35G>C	p.G12A	SMPH010066A
F05	NRAS	569	c.37G>C	p.G13R	SMPH010074A
F06	NRAS	573	c.38G>A	p.G13D	SMPH010070A
F07	NRAS	574	c.38G>T	p.G13V	SMPH010082A
F08	MEK1	99000002	167A>C	Q56P	SMPH017164A
F09	MEK1	99000004	171G>T	K57N	SMPH017166A
F10	MEK1	99000001	199G>A	D67N	SMPH017163A
F11	MEK1	99000003	371C>T	P124L	SMPH017165A
F12	PIK3CA	760	c.1624G>A	p.E542K	SMPH010629A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
G01	PIK3CA	763	c.1633G>A	p.E545K	SMPH010627A
G02	PIK3CA	764	c.1634A>G	p.E545G	SMPH010633A
G03	PIK3CA	765	c.1635G>T	p.E545D	SMPH010638A
G04	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
G05	PIK3CA	776	c.3140A>T	p.H1047L	SMPH010632A
G06	PTEN	5033	c.389G>A	p.R130Q	SMPH011486A
G07	PTEN	5219	c.388C>G	p.R130G	SMPH011480A
G08	PTEN	5152	c.388C>T	p.R130*	SMPH011473A
G09	PTEN	5089	c.517C>T	p.R173C	SMPH011475A
G10	PTEN	5039	c.518G>A	p.R173H	SMPH011472A
G11	PTEN	5154	c.697C>T	p.R233*	SMPH011506A
G12	AKT1	99000005	copy number	copy number	SMPH017167A
H01	BRAF	99000006	copy number	copy number	SMPH017168A
H02	MET	99000022	copy number	copy number	SMPH017184A
H03	PTPN11	99000023	copy number	copy number	SMPH017185A
H04	VHL	99000024	copy number	copy number	SMPH017186A
H05	KRAS	99000008	copy number	copy number	SMPH017170A
H06	HRAS	99000009	copy number	copy number	SMPH017171A
H07	NRAS	99000010	copy number	copy number	SMPH017172A
H08	MEK1	99000011	copy number	copy number	SMPH017173A
H09	PIK3CA	99000012	copy number	copy number	SMPH017174A
H10	PTEN	99000013	copy number	copy number	SMPH017175A
H11	SMPK	99000017	positive PCR control	positive PCR control	SMPH017179A
H12	SMPK	99000017	positive PCR control	positive PCR control	SMPH017179A

Array layout

	1	2	3	4	5	6	7	8	9	10	11	12
A	AKT1	BRAF	BRAF	BRAF	BRAF	BRAF	BRAF	MET	MET	MET	MET	MET
B	MET	MET	MET	MET	PTPN11	PTPN11	PTPN11	PTPN11	PTPN11	PTPN11	PTPN11	PTPN11
C	PTPN11	PTPN11	PTPN11	PTPN11	PTPN11	PTPN11	PTPN11	VHL	VHL	VHL	VHL	VHL
D	VHL	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS	KRAS
E	KRAS	HRAS	HRAS	HRAS	HRAS	HRAS	HRAS	HRAS	HRAS	NRAS	NRAS	NRAS
F	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	NRAS	MEK1	MEK1	MEK1	MEK1	PIK3CA
G	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PIK3CA	PTEN	PTEN	PTEN	PTEN	PTEN	PTEN	AKT1
H	BRAF	MET	PTPN11	VHL	KRAS	HRAS	NRAS	MEK1	PIK3CA	PTEN	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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