

qBiomarker Somatic Mutation PCR Array

Human RUNX1 Gene

Cat. no. 337021 SMH-810AA

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 RUNX1 Gene qBiomarker Somatic Mutation PCR Array allows the detection of 20 unique mutations in the human RUNX1 gene. RUNX1, a transcription factor, plays a role in normal hematopoiesis. Previous scientific reports have shown a strong association between mutations in the RUNX1 gene and acute myeloid leukemia. The RUNX1 mutations found in cancer samples are predominately missense point mutations, about half of which occur in its Runt domain, which is responsible for DNA-binding and protein-protein interactions. The DNA sequence mutation assays in the array detect the most frequent mutations in RUNX1 compiled from over 400 reported cancer sample sequences. Each mutation assay is bench-tested for the sensitive detection of a low percentage of mutation-containing DNA in a background of wild-type genomic DNA. The 96-well format of this array profiles the mutation status of 4 samples, while the 384-well array format profiles 16 samples, and each set of plates includes qPCR mastermix. Using real-time PCR, research studies can easily and reliably detect a panel of mutations in the RUNX1 gene with this array.

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	RUNX1	24721	c.592G>A	p.D198N	SMPH013176A
A02	RUNX1	24736	c.319C>T	p.R107C	SMPH013163A
A03	RUNX1	24799	c.593A>G	p.D198G	SMPH013200A
A04	RUNX1	24805	c.602G>A	p.R201Q	SMPH013202A
A05	RUNX1	24751	c.342C>A	p.I114I	SMPH013189A
A06	RUNX1	24731	c.611G>A	p.R204Q	SMPH013182A
A07	RUNX1	24756	c.167T>C	p.L565	SMPH013193A
A08	RUNX1	24769	c.496C>T	p.R166*	SMPH013201A
A09	RUNX1	24720	c.318G>T	p.W106C	SMPH013174A
A10	RUNX1	24728	c.291delC	p.L98fs*24	SMPH013180A
A11	RUNX1	24742	c.496C>G	p.R166G	SMPH013186A
A12	RUNX1	24771	c.601C>T	p.R201*	SMPH013213A
B01	RUNX1	25124	c.610C>T	p.R204*	SMPH013221A
B02	RUNX1	36055	c.497G>A	p.R166Q	SMPH013264A
B03	RUNX1	24716	c.595G>A	p.G199R	SMPH013170A
B04	RUNX1	24719	c.292delC	p.L98fs*24	SMPH013173A
B05	RUNX1	24727	c.205G>C	p.G69R	SMPH013179A
B06	RUNX1	24744	c.253C>A	p.H85N	SMPH013187A
B07	RUNX1	24768	c.494G>T	p.G165V	SMPH013220A
B08	RUNX1	26150	c.223G>T	p.D75Y	SMPH013262A
B09	RUNX1	99000026	copy number	copy number	SMPH017188A
B10	RUNX1	99000026	copy number	copy number	SMPH017188A
B11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
B12	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
C01	RUNX1	24721	c.592G>A	p.D198N	SMPH013176A
C02	RUNX1	24736	c.319C>T	p.R107C	SMPH013163A
C03	RUNX1	24799	c.593A>G	p.D198G	SMPH013200A
C04	RUNX1	24805	c.602G>A	p.R201Q	SMPH013202A
C05	RUNX1	24751	c.342C>A	p.I114I	SMPH013189A
C06	RUNX1	24731	c.611G>A	p.R204Q	SMPH013182A
C07	RUNX1	24756	c.167T>C	p.L565	SMPH013193A
C08	RUNX1	24769	c.496C>T	p.R166*	SMPH013201A
C09	RUNX1	24720	c.318G>T	p.W106C	SMPH013174A
C10	RUNX1	24728	c.291delC	p.L98fs*24	SMPH013180A
C11	RUNX1	24742	c.496C>G	p.R166G	SMPH013186A
C12	RUNX1	24771	c.601C>T	p.R201*	SMPH013213A
D01	RUNX1	25124	c.610C>T	p.R204*	SMPH013221A
D02	RUNX1	36055	c.497G>A	p.R166Q	SMPH013264A
D03	RUNX1	24716	c.595G>A	p.G199R	SMPH013170A
D04	RUNX1	24719	c.292delC	p.L98fs*24	SMPH013173A
D05	RUNX1	24727	c.205G>C	p.G69R	SMPH013179A
D06	RUNX1	24744	c.253C>A	p.H85N	SMPH013187A
D07	RUNX1	24768	c.494G>T	p.G165V	SMPH013220A
D08	RUNX1	26150	c.223G>T	p.D75Y	SMPH013262A
D09	RUNX1	99000026	copy number	copy number	SMPH017188A
D10	RUNX1	99000026	copy number	copy number	SMPH017188A
D11	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
D12	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
E01	RUNX1	24721	c.592G>A	p.D198N	SMPH013176A
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G05	RUNX1	24751	c.342C>A	p.I114I	SMPH013189A
G06	RUNX1	24731	c.611G>A	p.R204Q	SMPH013182A
G07	RUNX1	24756	c.167T>C	p.L56S	SMPH013193A
G08	RUNX1	24769	c.496C>T	p.R166*	SMPH013201A
G09	RUNX1	24720	c.318G>T	p.W106C	SMPH013174A
G10	RUNX1	24728	c.291delC	p.L98fs*24	SMPH013180A
G11	RUNX1	24742	c.496C>G	p.R166G	SMPH013186A
G12	RUNX1	24771	c.601C>T	p.R201*	SMPH013213A
H01	RUNX1	25124	c.610C>T	p.R204*	SMPH013221A
H02	RUNX1	36055	c.497G>A	p.R166Q	SMPH013264A
H03	RUNX1	24716	c.595G>A	p.G199R	SMPH013170A
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H09	RUNX1	99000026	copy number	copy number	SMPH017188A
H10	RUNX1	99000026	copy number	copy number	SMPH017188A
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	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1
B	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	SMPC	SMPC
C	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1
D	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	SMPC	SMPC
E	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1
F	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	SMPC	SMPC
G	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1
H	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	RUNX1	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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