

RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Human Epigenetic Chromatin Remodeling Factors

Cat. no. 330231 PAHS-086ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm® BioMark™



Description

The Human Epigenetic Chromatin Remodeling Factors RT² Profiler PCR Array profiles the expression of 84 key genes involved in recognizing chromatin modifications and remodeling chromatin to regulate chromatin accessibility and therefore gene expression. Many of these genes contain the chromodomain responsible for ATP hydrolysis-dependent chromatin reorganization. Chromodomain proteins either activate or repress transcription depending on their additional domains and the proteins they recruit. Chromobox domain proteins recognize methylated histone lysine residues and mediate transcriptional repression. Bromodomains and plant homeodomains (PHD) respectively bind acetylated and methylated histone lysine residues and seem to work cooperatively. Other genes on this array, such as the Inhibitor of Growth (ING) family, associate with and modulate histone acetyltransferase and deacetylase complex activity, while still others directly bind methylated CpG DNA. During the development of stem cells to terminally differentiated cells, altered expression occurs for many of these genes to control chromatin dynamics. These genes also exhibit different expression profiles in tumor cells relative to normal cells, suggesting a role for chromatin modification and remodeling in oncogenesis. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in epigenetic chromatin remodeling with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² Profiler PCR Arrays in formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

For long term storage, keep plates at -20°C .

Note: Ensure that you have the correct RT² Profiler PCR Array format for your real-time cycler (see table above).

Note: Open the package and store the products appropriately immediately on receipt.

Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	ARID1A	ASXL1	BAZ1A	BAZ1B	BAZ2A	BAZ2B	BMI1	BPTF	BRD1	BRD2	BRD3	BRD4
B	BRD7	BRD8	BRDT	BRPF1	BRPF3	BRWD1	BRWD3	CBX1	CBX3	CBX4	CBX5	CBX6
C	CBX7	CBX8	CDYL	CDYL2	CHD1	CHD2	CHD3	CHD4	CHD5	CHD6	CHD7	CHD8
D	CHD9	CTBP1	CTBP2	CTCF	EED	EZH2	HINFP	ING1	ING2	ING3	ING4	ING5
E	INO80	MBD1	MBD2	MBD3	MBD4	MECP2	MTA1	MTA2	NAB2	NSD1	PBRM1	PCGF1
F	PCGF2	PCGF3	PCGF5	PCGF6	PHC1	PHC2	PHF1	PHF13	PHF2	PHF21A	PHF21B	PHF3
G	PHF5A	PHF6	PHF7	RING1	RNF2	SMARCA2	SMARCA4	SPEN	SUZ12	TRIM27	WDR11	ZMYND8
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.468972	NM_006015	ARID1A	AT rich interactive domain 1A (SWI-like)
A02	Hs.374043	NM_015338	ASXL1	Additional sex combs like 1 (Drosophila)
A03	Hs.509140	NM_182648	BAZ1A	Bromodomain adjacent to zinc finger domain, 1A
A04	Hs.728963	NM_032408	BAZ1B	Bromodomain adjacent to zinc finger domain, 1B
A05	Hs.314263	NM_013449	BAZ2A	Bromodomain adjacent to zinc finger domain, 2A
A06	Hs.470369	NM_013450	BAZ2B	Bromodomain adjacent to zinc finger domain, 2B
A07	Hs.380403	NM_005180	BMI1	BMI1 polycomb ring finger oncogene
A08	Hs.444200	NM_182641	BPTF	Bromodomain PHD finger transcription factor
A09	Hs.127950	NM_014577	BRD1	Bromodomain containing 1
A10	Hs.75243	NM_005104	BRD2	Bromodomain containing 2
A11	Hs.522472	NM_007371	BRD3	Bromodomain containing 3
A12	Hs.187763	NM_014299	BRD4	Bromodomain containing 4
B01	Hs.437894	NM_013263	BRD7	Bromodomain containing 7
B02	Hs.519337	NM_006696	BRD8	Bromodomain containing 8
B03	Hs.482520	NM_001726	BRDT	Bromodomain, testis-specific
B04	Hs.1004	NM_004634	BRPF1	Bromodomain and PHD finger containing, 1
B05	Hs.520096	NM_015695	BRPF3	Bromodomain and PHD finger containing, 3
B06	Hs.654740	NM_018963	BRWD1	Bromodomain and WD repeat domain containing 1
B07	Hs.170667	NM_153252	BRWD3	Bromodomain and WD repeat domain containing 3
B08	Hs.77254	NM_006807	CBX1	Chromobox homolog 1
B09	Hs.381189	NM_007276	CBX3	Chromobox homolog 3
B10	Hs.714363	NM_003655	CBX4	Chromobox homolog 4
B11	Hs.349283	NM_012117	CBX5	Chromobox homolog 5
B12	Hs.592201	NM_014292	CBX6	Chromobox homolog 6
C01	Hs.356416	NM_175709	CBX7	Chromobox homolog 7
C02	Hs.387258	NM_020649	CBX8	Chromobox homolog 8
C03	Hs.269092	NM_004824	CDYL	Chromodomain protein, Y-like
C04	Hs.373908	NM_152342	CDYL2	Chromodomain protein, Y-like 2
C05	Hs.643465	NM_001270	CHD1	Chromodomain helicase DNA binding protein 1
C06	Hs.220864	NM_001271	CHD2	Chromodomain helicase DNA binding protein 2
C07	Hs.25601	NM_001005273	CHD3	Chromodomain helicase DNA binding protein 3
C08	Hs.162233	NM_001273	CHD4	Chromodomain helicase DNA binding protein 4
C09	Hs.522898	NM_015557	CHD5	Chromodomain helicase DNA binding protein 5
C10	Hs.371979	NM_032221	CHD6	Chromodomain helicase DNA binding protein 6
C11	Hs.20395	NM_017780	CHD7	Chromodomain helicase DNA binding protein 7
C12	Hs.530698	NM_020920	CHD8	Chromodomain helicase DNA binding protein 8
D01	Hs.59159	NM_025134	CHD9	Chromodomain helicase DNA binding protein 9
D02	Hs.208597	NM_001328	CTBP1	C-terminal binding protein 1
D03	Hs.501345	NM_022802	CTBP2	C-terminal binding protein 2
D04	Hs.368367	NM_006565	CTCF	CCCTC-binding factor (zinc finger protein)
D05	Hs.503510	NM_003797	EED	Embryonic ectoderm development
D06	Hs.444082	NM_004456	EZH2	Enhancer of zeste homolog 2 (Drosophila)
D07	Hs.504091	NM_198971	HINFP	Histone H4 transcription factor
D08	Hs.46700	NM_005537	ING1	Inhibitor of growth family, member 1
D09	Hs.107153	NM_001564	ING2	Inhibitor of growth family, member 2

Position	UniGene	GenBank	Symbol	Description
D10	Hs.489811	NM_198267	ING3	Inhibitor of growth family, member 3
D11	Hs.524210	NM_016162	ING4	Inhibitor of growth family, member 4
D12	Hs.645460	NM_032329	ING5	Inhibitor of growth family, member 5
E01	Hs.292949	NM_017553	INO80	INO80 homolog (<i>S. cerevisiae</i>)
E02	Hs.405610	NM_015844	MBD1	Methyl-CpG binding domain protein 1
E03	Hs.25674	NM_003927	MBD2	Methyl-CpG binding domain protein 2
E04	Hs.178728	NM_003926	MBD3	Methyl-CpG binding domain protein 3
E05	Hs.35947	NM_003925	MBD4	Methyl-CpG binding domain protein 4
E06	Hs.200716	NM_004992	MECP2	Methyl CpG binding protein 2 (Rett syndrome)
E07	Hs.525629	NM_004689	MTA1	Metastasis associated 1
E08	Hs.173043	NM_004739	MTA2	Metastasis associated 1 family, member 2
E09	Hs.159223	NM_005967	NAB2	NGFI-A binding protein 2 (EGR1 binding protein 2)
E10	Hs.106861	NM_022455	NSD1	Nuclear receptor binding SET domain protein 1
E11	Hs.189920	NM_018165	PBRM1	Polybromo 1
E12	Hs.316750	NM_032673	PCGF1	Polycomb group ring finger 1
F01	Hs.371617	NM_007144	PCGF2	Polycomb group ring finger 2
F02	Hs.144309	NM_006315	PCGF3	Polycomb group ring finger 3
F03	Hs.500512	NM_032373	PCGF5	Polycomb group ring finger 5
F04	Hs.335808	NM_032154	PCGF6	Polycomb group ring finger 6
F05	Hs.305985	NM_004426	PHC1	Polyhomeotic homolog 1 (<i>Drosophila</i>)
F06	Hs.524271	NM_198040	PHC2	Polyhomeotic homolog 2 (<i>Drosophila</i>)
F07	Hs.166204	NM_002636	PHF1	PHD finger protein 1
F08	Hs.516079	NM_153812	PHF13	PHD finger protein 13
F09	Hs.211441	NM_005392	PHF2	PHD finger protein 2
F10	Hs.502458	NM_016621	PHF21A	PHD finger protein 21A
F11	Hs.254097	NM_138415	PHF21B	PHD finger protein 21B
F12	Hs.348921	NM_015153	PHF3	PHD finger protein 3
G01	Hs.474980	NM_032758	PHF5A	PHD finger protein 5A
G02	Hs.356501	NM_032458	PHF6	PHD finger protein 6
G03	Hs.372719	NM_173341	PHF7	PHD finger protein 7
G04	Hs.631989	NM_002931	RING1	Ring finger protein 1
G05	Hs.591490	NM_007212	RNF2	Ring finger protein 2
G06	Hs.298990	NM_003070	SMARCA2	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 2
G07	Hs.327527	NM_003072	SMARCA4	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4
G08	Hs.558463	NM_015001	SPEN	Spen homolog, transcriptional regulator (<i>Drosophila</i>)
G09	Hs.462732	NM_015355	SUZ12	Suppressor of zeste 12 homolog (<i>Drosophila</i>)
G10	Hs.440382	NM_006510	TRIM27	Tripartite motif containing 27
G11	Hs.144447	NM_018117	WDR11	WD repeat domain 11
G12	Hs.446240	NM_183048	ZMYND8	Zinc finger, MYND-type containing 8
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human Genomic DNA Contamination
H07	N/A	SA_00104	RTC	Reverse Transcription Control
H08	N/A	SA_00104	RTC	Reverse Transcription Control
H09	N/A	SA_00104	RTC	Reverse Transcription Control
H10	N/A	SA_00103	PPC	Positive PCR Control
H11	N/A	SA_00103	PPC	Positive PCR Control
H12	N/A	SA_00103	PPC	Positive PCR Control

Related products

For optimal performance, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT² SYBR[®] Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² SYBR Green qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT ² SYBR Green ROX™ qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT ² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* Larger kit sizes available; please inquire.

RT² Profiler 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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