

RT² Profiler PCR Array (Rotor-Gene[®] Format)

Mouse Epigenetic Chromatin Modification Enzymes

Cat. no. 330231 PAMM-085ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

Description

The Mouse Epigenetic Chromatin Modification Enzymes RT² Profiler PCR Array profiles the expression of 84 key genes encoding enzymes known or predicted to modify genomic DNA and histones to regulate chromatin accessibility and therefore gene expression. The *de novo* and maintenance DNA methyltransferases, and the enzymes responsible for demethylation of CpG dinucleotides are represented by the array. Enzymes catalyzing histone acetylation, methylation, phosphorylation, and ubiquitination are also included on the array as well as the enzymes the deacetylases and demethylases. The array also analyzes genes encoding the SET domain proteins, which all contain a homologous domain that demonstrates histone methyltransferase activity in some family members. 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 modifications with this array.

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

Shipping and storage

RT² Profiler PCR Arrays in the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

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.



Sample & Assay Technologies

Array layout

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc™ (plate A1–A12=Rotor-Disc 1–12, plate B1–B12=Rotor-Disc 13–24, etc.). To maintain data analysis compatibility, wells 97–100 do not contain real-time assays but will contain master mix to account for weight balance.

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.130752	NM_138679	Ash1	Ash1 (absent, small, or homeotic)-like (Drosophila)
A02	Mm.209903	NM_009715	Ahf2	Activating transcription factor 2
A03	Mm.249363	NM_011497	Aurka	Aurora kinase A
A04	Mm.3488	NM_011496	Aurkb	Aurora kinase B
A05	Mm.261572	NM_020572	Aurkc	Aurora kinase C
A06	Mm.178115	NM_021531	Carm1	Coactivator-associated arginine methyltransferase 1
A07	Mm.29002	NM_009881	Cdyl	Chromodomain protein, Y chromosome-like
A08	Mm.249560	NM_007575	Ciita	Class II transactivator
A09	Mm.227925	NM_181417	Csrp2bp	Cysteine and glycine-rich protein 2 binding protein
A10	Mm.128580	NM_010066	Dnmt1	DNA methyltransferase (cytosine-5) 1
A11	Mm.5001	NM_007872	Dnmt3a	DNA methyltransferase 3A
A12	Mm.89772	NM_010068	Dnmt3b	DNA methyltransferase 3B
B01	Mm.152371	NM_199322	Dof11	DOT1-like, histone H3 methyltransferase (S. cerevisiae)
B02	Mm.275138	NM_001110017	Dzip3	DAZ interacting protein 3, zinc finger
B03	Mm.24176	NM_172545	Ehmt1	Euchromatic histone methyltransferase 1
B04	Mm.35345	NM_145830	Ehmt2	Euchromatic histone lysine N-methyltransferase 2
B05	Mm.210996	NM_001081222	Esco1	Establishment of cohesion 1 homolog 1 (S. cerevisiae)
B06	Mm.249280	NM_028039	Esco2	Establishment of cohesion 1 homolog 2 (S. cerevisiae)
B07	Mm.272472	NM_026115	Hat1	Histone aminotransferase 1
B08	Mm.202504	NM_008228	Hdac1	Histone deacetylase 1
B09	Mm.203954	NM_199198	Hdac10	Histone deacetylase 10
B10	Mm.206218	NM_144919	Hdac11	Histone deacetylase 11
B11	Mm.19806	NM_008229	Hdac2	Histone deacetylase 2
B12	Mm.20521	NM_010411	Hdac3	Histone deacetylase 3
C01	Mm.318567	NM_207225	Hdac4	Histone deacetylase 4
C02	Mm.22665	NM_010412	Hdac5	Histone deacetylase 5
C03	Mm.29854	NM_010413	Hdac6	Histone deacetylase 6
C04	Mm.384027	NM_019572	Hdac7	Histone deacetylase 7
C05	Mm.328128	NM_027382	Hdac8	Histone deacetylase 8
C06	Mm.310551	NM_024124	Hdac9	Histone deacetylase 9
C07	Mm.218837	NM_020004	Kaf2a	K(lysine) acetyltransferase 2A
C08	Mm.255025	NM_020005	Kaf2b	K(lysine) acetyltransferase 2B
C09	Mm.228930	NM_178637	Kaf5	K(lysine) acetyltransferase 5
C10	Mm.28540	NM_133872	Kdm1a	Lysine (K)-specific demethylase 1A
C11	Mm.234234	NM_172382	Kdm4a	Lysine (K)-specific demethylase 4A
C12	Mm.209059	NM_144787	Kdm4c	Lysine (K)-specific demethylase 4C
D01	Mm.28995	NM_152895	Kdm5b	Lysine (K)-specific demethylase 5B
D02	Mm.142655	NM_013668	Kdm5c	Lysine (K)-specific demethylase 5C
D03	Mm.261201	NM_001017426	Kdm6b	KDM1 lysine (K)-specific demethylase 6B
D04	Mm.332268	NM_001081383	Mll3	Myeloid/lymphoid or mixed-lineage leukemia 3
D05	Mm.205190	NM_026984	Mll5	Myeloid/lymphoid or mixed-lineage leukemia 5
D06	Mm.208868	NM_177239	Mysm1	Myb-like, SWIRM and MPN domains 1
D07	Mm.425492	NM_026370	Myst1	MYST histone acetyltransferase 1
D08	Mm.90213	NM_177619	Myst2	MYST histone acetyltransferase 2
D09	Mm.182776	NM_001081149	Myst3	MYST histone acetyltransferase (monocytic leukemia) 3
D10	Mm.248967	NM_017479	Myst4	MYST histone acetyltransferase monocytic leukemia 4
D11	Mm.301039	NM_010881	Ncoa1	Nuclear receptor coactivator 1
D12	Mm.476883	NM_008679	Ncoa3	Nuclear receptor coactivator 3
E01	Mm.27592	NM_019825	Ncoa6	Nuclear receptor coactivator 6
E02	Mm.143818	NM_021606	Nek6	NIMA (never in mitosis gene a)-related expressed kinase 6
E03	Mm.12964	NM_008739	Nsd1	Nuclear receptor-binding SET-domain protein 1
E04	Mm.260227	NM_011035	Pak1	P21 protein (Cdc42/Rac)-activated kinase 1
E05	Mm.27545	NM_019830	Prmt1	Protein arginine N-methyltransferase 1
E06	Mm.32020	NM_133182	Prmt2	Protein arginine N-methyltransferase 2
E07	Mm.33202	NM_133740	Prmt3	Protein arginine N-methyltransferase 3
E08	Mm.196585	NM_013768	Prmt5	Protein arginine N-methyltransferase 5
E09	Mm.36115	NM_178891	Prmt6	Protein arginine N-methyltransferase 6

Position	UniGene	GenBank	Symbol	Description
E10	Mm.251804	NM_145404	Prmt7	Protein arginine N-methyltransferase 7
E11	Mm.39750	NM_201371	Prmt8	Protein arginine N-methyltransferase 8
E12	Mm.482250	NM_011277	Rnf2	Ring finger protein 2
F01	Mm.24765	NM_182999	Rnf20	Ring finger protein 20
F02	Mm.328476	NM_148945	Rps6ka3	Ribosomal protein S6 kinase polypeptide 3
F03	Mm.220417	NM_153587	Rps6ka5	Ribosomal protein S6 kinase, polypeptide 5
F04	Mm.435494	NM_178029	Setd1a	SET domain containing 1A
F05	Mm.250391	XM_003085353	Setd1b	SET domain containing 1B
F06	Mm.288949	NM_001081340	Setd2	SET domain containing 2
F07	Mm.159185	NM_028262	Setd3	SET domain containing 3
F08	Mm.10628	NM_145482	Setd4	SET domain containing 4
F09	Mm.367159	NM_028385	Setd5	SET domain containing 5
F10	Mm.261321	NM_001035123	Setd6	SET domain containing 6
F11	Mm.192111	NM_080793	Setd7	SET domain containing (lysine methyltransferase) 7
F12	Mm.137966	NM_030241	Setd8	SET domain containing (lysine methyltransferase) 8
G01	Mm.181009	NM_018877	Setdb1	SET domain, bifurcated 1
G02	Mm.217269	NM_001081024	Setdb2	SET domain, bifurcated 2
G03	Mm.234274	NM_009762	Smyd1	SET and MYND domain containing 1
G04	Mm.222338	NM_027188	Smyd3	SET and MYND domain containing 3
G05	Mm.9244	NM_011514	Suv39h1	Suppressor of variegation 3-9 homolog 1 (Drosophila)
G06	Mm.278578	NM_144871	Suv420h1	Suppressor of variegation 4-20 homolog 1 (Drosophila)
G07	Mm.395649	NM_019668	Ube2a	Ubiquitin-conjugating enzyme E2A, RAD6 homolog (S. cerevisiae)
G08	Mm.384918	NM_009458	Ube2b	Ubiquitin-conjugating enzyme E2B, RAD6 homolog (S. cerevisiae)
G09	Mm.152941	NM_024258	Usp16	Ubiquitin specific peptidase 16
G10	Mm.27510	NM_013919	Usp21	Ubiquitin specific peptidase 21
G11	Mm.30602	NM_001004143	Usp22	Ubiquitin specific peptidase 22
G12	Mm.19892	NM_001081102	Whsc1	Wolf-Hirschhorn syndrome candidate 1 (human)
H01	Mm.328431	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H05	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90 alpha (cytosolic), class B member 1
H06	N/A	SA_00106	MGDC	Mouse 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 ROX™ FAST Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the Rotor-Gene Q and other Rotor-Gene cyclers	330620

* 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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