

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

Mouse Embryonic Stem Cells

Cat. no. 330231 PAMM-081YR

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 Embryonic Stem Cell RT² Profiler PCR Array profiles the expression of 84 key genes involved in the maintenance of pluripotency and the self-renewal status of embryonic stem cells. Embryonic stem cells (ESC) hold great potential in treating diseases and injuries. However, turning them into a safe therapeutic agent still requires a deeper understanding how the control mechanisms for cell-lineage commitment and differentiation work. Some of this work is performed with ESCs, but similar studies make use of induced pluripotent stem cells (iPSC). The array includes embryonic stem cell-specific genes that maintain their pluripotent and self-renewal characteristics as well as key genes necessary for the first steps of iPSC generation. The array also includes differentiation markers that can be used to monitor the early events of ESC differentiation. A set of controls present on each array enables data analysis using the $\Delta\Delta\text{CT}$ method of relative quantification, assessment of reverse transcription performance, genomic DNA contamination, and PCR performance. Using real-time PCR, research studies can easily and reliably analyze expression of a focused panel of genes involved in embryonic stem cells maintenance and differentiation 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.213025	NM_007392	Acta2	Actin, alpha 2, smooth muscle, aorta
A02	Mm.391503	NM_009645	Aicda	Activation-induced cytidine deaminase
A03	Mm.16773	NM_009654	Alb	Albumin
A04	Mm.288186	NM_007431	Alpl	Alkaline phosphatase, liver/bone/kidney
A05	Mm.4189	NM_009828	Ccna2	Cyclin A2
A06	Mm.423621	NM_009851	Cd44	CD44 antigen
A07	Mm.447553	NM_009861	Cdc42	Cell division cycle 42 homolog (<i>S. cerevisiae</i>)
A08	Mm.281367	NM_007659	Cdk1	Cyclin-dependent kinase 1
A09	Mm.8137	NM_007690	Chd1	Chromodomain helicase DNA binding protein 1
A10	Mm.138792	NM_001081417	Chd7	Chromodomain helicase DNA binding protein 7
A11	Mm.358731	NM_146176	Cnot3	CCR4-NOT transcription complex, subunit 3
A12	Mm.6712	NM_010043	Des	Desmin
B01	Mm.27857	NM_028615	Dppa2	Developmental pluripotency associated 2
B02	Mm.27982	NM_139218	Dppa3	Developmental pluripotency-associated 3
B03	Mm.35597	NM_028610	Dppa4	Developmental pluripotency associated 4
B04	Mm.440500	NM_025274	Dppa5a	Developmental pluripotency associated 5A
B05	Mm.4298	NM_010134	En2	Engrailed 2
B06	Mm.225297	NM_007932	Eng	Endoglin
B07	Mm.235550	NM_011934	Esrrb	Estrogen related receptor, beta
B08	Mm.4829	NM_007959	Etv2	Ets variant gene 2
B09	Mm.473689	NM_008006	Fgf2	Fibroblast growth factor 2
B10	Mm.5055	NM_010203	Fgf5	Fibroblast growth factor 5
B11	Mm.339755	NM_022009	Flii	Flightless 1 homolog (<i>Drosophila</i>)
B12	Mm.335973	NM_008089	Gata1	GATA binding protein 1
C01	Mm.491156	NM_008090	Gata2	GATA binding protein 2
C02	Mm.329287	NM_010258	Gata6	GATA binding protein 6
C03	Mm.299742	NM_008108	Gdf3	Growth differentiation factor 3
C04	Mm.1239	NM_010277	Gfap	Glial fibrillary acidic protein
C05	Mm.129	NM_010351	Gsc	Goosecoid homeobox
C06	Mm.4746	NM_008213	Hand1	Heart and neural crest derivatives expressed transcript 1
C07	Mm.202383	NM_008261	Hnf4a	Hepatic nuclear factor 4, alpha
C08	Mm.209419	NM_010481	Hspa9	Heat shock protein 9
C09	Mm.42242	NM_021459	Isl1	ISL1 transcription factor, LIM/homeodomain
C10	Mm.228930	NM_178637	Kat5	K(lysine) acetyltransferase 5
C11	Mm.4325	NM_010637	Klf4	Kruppel-like factor 4 (gut)
C12	Mm.302567	NM_145833	Lin28a	Lin-28 homolog A (<i>C. elegans</i>)
D01	Mm.445192	NM_010789	Meis1	Meis homeobox 1
D02	Mm.1404	NM_008588	Mesp1	Mesoderm posterior 1
D03	Mm.103647	NM_013729	Mixl1	Mix1 homeobox-like 1 (<i>Xenopus laevis</i>)
D04	Mm.4594	NM_008652	Mybl2	Myeloblastosis oncogene-like 2
D05	Mm.2444	NM_010849	Myc	Myelocytomatosis oncogene
D06	Mm.1526	NM_010866	Myod1	Myogenic differentiation 1
D07	Mm.6047	NM_028016	Nanog	Nanog homeobox
D08	Mm.439182	NM_010875	Ncam1	Neural cell adhesion molecule 1
D09	Mm.331129	NM_016701	Nes	Nestin
D10	Mm.41974	NM_008700	Nkx2-5	NK2 transcription factor related, locus 5 (<i>Drosophila</i>)
D11	Mm.5180	NM_007430	Nr0b1	Nuclear receptor subfamily 0, group B, member 1
D12	Mm.16794	NM_030676	Nr5a2	Nuclear receptor subfamily 5, group A, member 2
E01	Mm.439703	NM_010264	Nr6a1	Nuclear receptor subfamily 6, group A, member 1
E02	Mm.244235	NM_011851	Nt5e	5' nucleotidase, ecto
E03	Mm.37289	NM_016967	Olig2	Oligodendrocyte transcription factor 2
E04	Mm.487292	NM_144841	Otx2	Orthodenticle homolog 2 (<i>Drosophila</i>)
E05	Mm.7916	NM_019458	Paf1	Paf1, RNA polymerase II associated factor, homolog (<i>S. cerevisiae</i>)
E06	Mm.33870	NM_013627	Pax6	Paired box gene 6
E07	Mm.17031	NM_013633	Pou5f1	POU domain, class 5, transcription factor 1
E08	Mm.309380	NM_001081209	Prdm14	PR domain containing 14
E09	Mm.389247	NM_175238	Rif1	Rap1 interacting factor 1 homolog (yeast)

Position	UniGene	GenBank	Symbol	Description
E10	Mm.491245	NM_175303	Sal14	Sal-like 4 (Drosophila)
E11	Mm.455166	NM_018733	Scn1a	Sodium channel, voltage-gated, type I, alpha
E12	Mm.223717	NM_008539	Smad1	MAD homolog 1 (Drosophila)
F01	Mm.490934	NM_010754	Smad2	MAD homolog 2 (Drosophila)
F02	Mm.7320	NM_016769	Smad3	MAD homolog 3 (Drosophila)
F03	Mm.347499	NM_009235	Sox15	SRY-box containing gene 15
F04	Mm.279103	NM_011441	Sox17	SRY-box containing gene 17
F05	Mm.65396	NM_011443	Sox2	SRY-box containing gene 2
F06	Mm.35784	NM_009237	Sox3	SRY-box containing gene 3
F07	Mm.42162	NM_011446	Sox7	SRY-box containing gene 7
F08	Mm.249934	NM_011486	Stat3	Signal transducer and activator of transcription 3
F09	Mm.913	NM_009309	T	Brachyury
F10	Mm.283283	NM_011526	Tagln	Transgelin
F11	Mm.439685	NM_011527	Tal1	T-cell acute lymphocytic leukemia 1
F12	Mm.28110	NM_146214	Tat	Tyrosine aminotransferase
G01	Mm.219139	NM_011535	Tbx3	T-box 3
G02	Mm.3406	NM_011548	Tcf3	Transcription factor 3
G03	Mm.18154	NM_009337	Tcl1	T-cell lymphoma breakpoint 1
G04	Mm.5090	NM_011562	Tdgf1	Teratocarcinoma-derived growth factor 1
G05	Mm.14313	NM_013690	Tek	Endothelial-specific receptor tyrosine kinase
G06	Mm.10109	NM_009354	Tert	Telomerase reverse transcriptase
G07	Mm.286598	NM_021513	Thap11	THAP domain containing 11
G08	Mm.3951	NM_009382	Thy1	Thymus cell antigen 1, theta
G09	Mm.398345	NM_011588	Trim28	Tripartite motif-containing 28
G10	Mm.10205	NM_009482	Uhf1	Undifferentiated embryonic cell transcription factor 1
G11	Mm.285848	NM_009556	Zfp42	Zinc finger protein 42
G12	Mm.919	NM_011768	Zfx	Zinc finger protein X-linked
H01	Mm.391967	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.304088	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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