RT² Profiler PCR Array (Rotor-Gene® Format)

Mouse Stem Cell Signaling

Cat. no. 330231 PAMM-047ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

Description

The Mouse Stem Cell Signaling RT² Profiler PCR Array profiles the expression of 84 key genes involved in signal transduction pathways important for embryonic stem cell (ESC) and induced pluripotent stem cell (iPSC) maintenance and differentiation. A variety of growth factors maintains pluripotent status and directs differentiation of ESC and iPSC cells. If an initial stem cell line lacks the corresponding signaling effectors recognizing those growth factors, precious time and resources would be wasted attempting to differentiate unresponsive cells. Therefore, evaluating the expression of signaling genes in pluripotent and multipotent stem cells helps researchers screen clones for the presence of the differentiation signaling machinery. The array represents the receptors and transcription factors of the major signaling pathways involved in pluripotent cell maintenance and differentiation, including Fibroblast Growth Factor, Hedgehog, Notch, TGF? and WNT. Monitoring the expression of receptors and co-receptors insures that stem cells can recognize the necessary growth factors or other receptor ligands. Monitoring the expression of transcription factors and co-factors insures that the activated signaling pathway can successfully regulate gene transcription for the desired differentiation program. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of signaling genes involved in ESC and iPSC 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.

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.689	NM_007394	Acvr1	Activin A receptor, type 1
A02	Mm.308467	NM_007395	Acvr1b	Activin A receptor, type 1B
A03	Mm.77751	NM_001033369	Acvr1c	Activin A receptor, type IC
A04	Mm.314338	NM_007396	Acvr2a	Activin receptor IIA
A05	Mm.390239	NM_007397	Acvr2b	Activin receptor IIB
A06	Mm.279542	NM_009612	Acvrl1	Activin A receptor, type II-like 1
A07	Mm.60331	NM_144547	Amhr2	Anti-Mullerian hormone type 2 receptor
A08	Mm.226175	NM_029933	Bcl9	B-cell CLL/lymphoma 9
A09	Mm.370270	NM_030256	Bcl9l	B-cell CLL/lymphoma 9-like
A10	Mm.237825	NM_009758	Bmpr1a	Bone morphogenetic protein receptor, type 1A
A11	Mm.39089	NM_007560	Bmpr1b	Bone morphogenetic protein receptor, type 1B
A12	Mm.7106	NM_007561	Bmpr2	Bone morphogenic protein receptor, type II (serine/threonine kinase)
B01	Mm.20358	NM_007673	Cdx2	Caudal type homeobox 2
B02	Mm.132238	NM_001025432	Crebbp	CREB binding protein
B03	Mm.291928	NM_007614	Ctnnb1	Catenin (cadherin associated protein), beta 1
B04	Mm.153415	NM_007892	E2f5	E2F transcription factor 5
B05	Mm.225297	NM_007932	Eng	Endoglin
B06	Mm.258397	NM_177821	Ep300	E1A binding protein p300
B07	Mm.265716	NM_010206	Fgfr1	Fibroblast growth factor receptor 1
B08	Mm.16340	NM_010207	Fgfr2	Fibroblast growth factor receptor 2
B09	Mm.6904	NM_008010	Fgfr3	Fibroblast growth factor receptor 3
B10	Mm.276715	NM_008011	Fgfr4	Fibroblast growth factor receptor 4
B11	Mm.246003	NM_021457	Fzd1	Frizzled homolog 1 (Drosophila)
B12	Mm.36416	NM_020510	Fzd2	Frizzled homolog 2 (Drosophila)
C01	Mm.214687	NM_021458	Fzd3	Frizzled homolog 3 (Drosophila)
C02	Mm.86755	NM_008055	Fzd4	Frizzled homolog 4 (Drosophila)
C03	Mm.150813	NM_022721	Fzd5	Frizzled homolog 5 (Drosophila)
C04	Mm.4769	NM_008056	Fzd6	Frizzled homolog 6 (Drosophila)
C05	Mm.297906	NM_008057	Fzd7	Frizzled homolog 7 (Drosophila)
C06	Mm.184289	NM_008058	Fzd8	Frizzled homolog 8 (Drosophila)
C07	Mm.6256	NM_010246	Fzd9	Frizzled homolog 9 (Drosophila)
C08	Mm.391450	NM_010296	Gli1	GLI-Kruppel family member GLI1
C09	Mm.273292	NM_001081125	Gli2	GLI-Kruppel family member GLI2
C10	Mm.5098	NM_008130	Gli3	GLI-Kruppel family member GLI3
C11	Mm.4364	NM_010560	Il6st	Interleukin 6 signal transducer
C12	Mm.255219	NM_010703	Lef1	Lymphoid enhancer binding factor 1
D01	Mm.149720	NM_013584	Lifr	Leukemia inhibitory factor receptor
D02	Mm.274581	NM_008513	Lrp5	Low density lipoprotein receptor-related protein 5
D03	Mm.321990	NM_008514	Lrp6	Low density lipoprotein receptor-related protein 6
D04	Mm.269747	NM_019919	Ltbp1	Latent transforming growth factor beta binding protein 1
D05	Mm.3900	NM_013589	Ltbp2	Latent transforming growth factor beta binding protein 2
D06	Mm.182396	NM_008520	Ltbp3	Latent transforming growth factor beta binding protein 3
D07	Mm.272251	NM_175641	Ltbp4	Latent transforming growth factor beta binding protein 4
D08	Mm.218203	NM_021607	Ncstn	Nicastrin
D09	Mm.390057	NM_018823	Nfat5	Nuclear factor of activated T-cells 5
D10	Mm.329560	NM_016791	Nfatc1	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1
D11	Mm.116802	NM_010899	Nfatc2	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 2
D12	Mm.383185	NM_010901	Nfatc3	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 3
E01	Mm.27908	NM_023699	Nfatc4	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 4
E02	Mm.290610	NM_008714	Notch1	Notch gene homolog 1 (Drosophila)
E03	Mm.254017	NM_010928	Notch2	Notch gene homolog 2 (Drosophila)
E04	Mm.439741	NM_008716	Notch3	Notch gene homolog 3 (Drosophila)
E05	Mm.173813	NM_010929	Notch4	Notch gene homolog 4 (Drosophila)
E06	Mm.998	NM_008943	Psen1	Presenilin 1
E07	Mm.330850	NM_011183	Psen2	Presenilin 2
E08	Mm.86557	NM_025498	Psenen	Presenilin enhancer 2 homolog (C. elegans)
E09	Mm.228798	NM_008957	Ptch1	Patched homolog 1

Position	UniGene	GenBank	Symbol	Description
E10	Mm.33873	NM_001083342	Ptchd2	Patched domain containing 2
E11	Mm.22521	NM_026869	Pygo2	Pygopus 2
E12	Mm.244671	NM_011249	Rbl1	Retinoblastoma-like 1 (p107)
F01	Mm.235580	NM_011250	Rbl2	Retinoblastoma-like 2
F02	Mm.473794	NM_009036	Rbpjl	Recombination signal binding protein for immunoglobulin kappa J region-like
F03	Mm.333943	NM_177740	Rgma	RGM domain family, member A
F04	Mm.223717	NM_008539	Smad1	MAD homolog 1 (Drosophila)
F05	Mm.391091	NM_010754	Smad2	MAD homolog 2 (Drosophila)
F06	Mm.7320	NM_016769	Smad3	MAD homolog 3 (Drosophila)
F07	Mm.100399	NM_008540	Smad4	MAD homolog 4 (Drosophila)
F08	Mm.272920	NM_008541	Smad5	MAD homolog 5 (Drosophila)
F09	Mm.325757	NM_008542	Smad6	MAD homolog 6 (Drosophila)
F10	Mm.34407	NM_001042660	Smad7	MAD homolog 7 (Drosophila)
F11	Mm.244353	NM_019483	Smad9	MAD homolog 9 (Drosophila)
F12	Mm.29279	NM_176996	Smo	Smoothened homolog (Drosophila)
G01	Mm.4618	NM_013672	Sp1	Trans-acting transcription factor 1
G02	Mm.249934	NM_011486	Stat3	Signal transducer and activator of transcription 3
G03	Mm.41210	NM_015752	Sufu	Suppressor of fused homolog (Drosophila)
G04	Mm.31630	NM_009331	Tcf7	Transcription factor 7, T-cell specific
G05	Mm.440067	NM_009332	Tcf7l1	Transcription factor 7-like 1 (T-cell specific, HMG box)
G06	Mm.139815	NM_009333	Tcf7l2	Transcription factor 7-like 2, T-cell specific, HMG-box
G07	Mm.197552	NM_009370	Tgfbr1	Transforming growth factor, beta receptor I
G08	Mm.172346	NM_009371	Tgfbr2	Transforming growth factor, beta receptor II
G09	Mm.200775	NM_011578	Tgfbr3	Transforming growth factor, beta receptor III
G10	Mm.246069	NM_001013025	Tgfbrap1	Transforming growth factor, beta receptor associated protein 1
G11	Mm.36148	NM_033509	Vangl2	Vang-like 2 (van gogh, Drosophila)
G12	Mm.440702	NM_015753	Zeb2	Zinc finger E-box binding homeobox 2
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.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² 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.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

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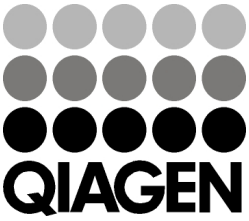

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