RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Mesenchymal Stem Cells

Cat. no. 330231 PARN-082ZR

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 Rat Mesenchymal Stem Cell RT² Profiler PCR Array profiles the expression of 84 key genes involved in maintaining pluripotency and self-renewal status. Mesenchymal stem cells (MSC) are multipotent adult stem cells able to differentiate into a variety of cell types such as osteoblasts, chondrocytes, myocytes, adipocytes, and beta-pancreatic islets cells. Because MSC can easily be isolated from a variety of tissues and expanded in vitro, they may serve as a valuable resource for regenerative medicine. However, diverse MSC isolation protocols make it difficult to compare results between laboratories. Examining gene expression profiles with this PCR Array may help you better interpret the nature of the initial MSC isolates and their behavior afterwards. The array includes genes that define the "stemness" of these cells and that maintain their pluripotency and self-renewal characteristics. The array has a collection of genes shown to be MSC-specific markers that distinguish them from embryonic stem cells (ESC). The array also includes differentiation markers that can be used to monitor early MSC differentiation events. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in mesenchymal stem cell maintenance and differentiation with this array.

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

Shipping and storage

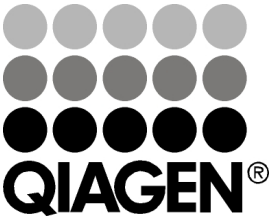
RT² Profiler PCR Arrays in the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

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	Rn.154810	NM_133401	Abcb1a	ATP-binding cassette, sub-family B (MDR/TAP), member 1A
A02	Rn.195319	NM_031004	Acta2	Smooth muscle alpha-actin
A03	Rn.24299	NM_144744	Adipoq	Adiponectin, C1Q and collagen domain containing
A04	Rn.5789	NM_031753	Alcam	Activated leukocyte cell adhesion molecule
A05	Rn.11132	NM_031012	Anpep	Alanyl (membrane) aminopeptidase
A06	Rn.3318	NM_013132	Anxa5	Annexin A5
A07	Rn.11266	NM_012513	Bdnf	Brain-derived neurotrophic factor
A08	Rn.9722	NM_013414	Bglap	Bone gamma-carboxyglutamate (gla) protein
A09	Rn.90931	NM_017178	Bmp2	Bone morphogenetic protein 2
A10	Rn.10318	NM_012827	Bmp4	Bone morphogenetic protein 4
A11	Rn.40476	NM_013107	Bmp6	Bone morphogenetic protein 6
A12	Rn.18030	XM_342591	Bmp7	Bone morphogenetic protein 7
B01	Rn.10562	NM_012922	Casp3	Caspase 3
B02	Rn.1120	NM_012924	Cd44	Cd44 molecule
B03	Rn.2953	NM_053304	Col1a1	Collagen, type I, alpha 1
B04	Rn.44285	XM_340799	Csf2	Colony stimulating factor 2 (granulocyte-macrophage)
B05	Rn.53973	NM_017104	Csf3	Colony stimulating factor 3 (granulocyte)
B06	Rn.112601	NM_053357	Ctnnb1	Catenin (cadherin associated protein), beta 1
B07	Rn.6075	NM_012842	Egf	Epidermal growth factor
B08	Rn.187025	NM_001010968	Eng	Endoglin
B09	Rn.93966	NM_017003	Erbb2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
B10	Rn.44439	NM_012951	Fgf10	Fibroblast growth factor 10
B11	Rn.31808	NM_019305	Fgf2	Fibroblast growth factor 2
B12	Rn.11382	NM_031236	Fut1	Fucosyltransferase 1
C01	Rn.44467	NM_022219	Fut4	Fucosyltransferase 4 (alpha (1,3) fucosyltransferase, myeloid-specific)
C02	Rn.96335	NM_153305	Fzd9	Frizzled homolog 9 (Drosophila)
C03	Rn.44228	NM_019216	Gdf15	Growth differentiation factor 15
C04	Rn.127822	XM_001066344	Gdf5	Growth differentiation factor 5
C05	Rn.49815	NM_001013038	Gdf6	Growth differentiation factor 6
C06	Rn.92437	NM_001170350	Gdf7	Growth differentiation factor 7
C07	Rn.139751	NM_001009657	Hat1	Histone acetyltransferase 1
C08	Rn.1863	NM_001025409	Hdac1	Histone deacetylase 1
C09	Rn.10468	NM_017017	Hgf	Hepatocyte growth factor
C10	Rn.9660	NM_012669	Hnf1a	HNF1 homeobox A
C11	Rn.12	NM_012967	Icam1	Intercellular adhesion molecule 1
C12	Rn.10795	NM_138880	Ifng	Interferon gamma
D01	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
D02	Rn.9868	NM_012854	Il10	Interleukin 10
D03	Rn.9869	NM_031512	Il1b	Interleukin 1 beta
D04	Rn.9873	NM_012589	Il6	Interleukin 6
D05	Rn.989	NM_019130	Ins2	Insulin 2
D06	Rn.161799	XM_215984	Itga6	Integrin, alpha 6
D07	Rn.23339	NM_001106549	Itgav	Integrin, alpha V
D08	Rn.215658	XM_001080404	Itgax	Integrin, alpha X
D09	Rn.25733	NM_017022	Itgb1	Integrin, beta 1
D10	Rn.88804	NM_019147	Jag1	Jagged 1
D11	Rn.88869	NM_013062	Kdr	Kinase insert domain receptor
D12	Rn.44216	NM_021843	Kitlg	KIT ligand
E01	Rn.44379	NM_022196	Lif	Leukemia inhibitory factor
E02	Rn.2694	NM_023983	Mcam	Melanoma cell adhesion molecule
E03	Rn.207359	NM_001191089	Mitf	Microphthalmia-associated transcription factor
E04	Rn.6422	NM_031054	Mmp2	Matrix metallopeptidase 2
E05	Rn.9701	NM_012987	Nes	Nestin
E06	Rn.10980	NM_012610	Ngfr	Nerve growth factor receptor (TNFR superfamily, member 16)
E07	Rn.25046	NM_001105721	Notch1	Notch homolog 1, translocation-associated (Drosophila)
E08	Rn.40132	NM_021576	Nt5e	5' nucleotidase, ecto

Position	UniGene	GenBank	Symbol	Description
E09	Rn.83600	NM_181363	Nudt6	Nudix (nucleoside diphosphate linked moiety X)-type motif 6
E10	Rn.98311	NM_031525	Pdgfrb	Platelet derived growth factor receptor, beta polypeptide
E11	Rn.59136	NM_001006602	Pigs	Phosphatidylinositol glycan anchor biosynthesis, class S
E12	Rn.161748	NM_001009178	Pou5f1	POU class 5 homeobox 1
F01	Rn.23443	NM_013124	Pparg	Peroxisome proliferator-activated receptor gamma
F02	Rn.144589	NM_021751	Prom1	Prominin 1
F03	Rn.2809	NM_013081	Ptk2	PTK2 protein tyrosine kinase 2
F04	Rn.90166	NM_001109887	Ptprc	Protein tyrosine phosphatase, receptor type, C
F05	Rn.13503	NM_001109598	RGD1309707	Similar to RIKEN cDNA 4930431E10
F06	Rn.107401	NM_057132	Rhoa	Ras homolog gene family, member A
F07	Rn.214214	NM_053470	Runx2	Runt-related transcription factor 2
F08	Rn.74591	NM_001009713	Slc17a5	Solute carrier family 17 (anion/sugar transporter), member 5
F09	Rn.9774	NM_019275	Smad4	SMAD family member 4
F10	Rn.92843	NM_001107061	Smurf2	SMAD specific E3 ubiquitin protein ligase 2
F11	Rn.219221	NM_001109181	Sox2	SRY (sex determining region Y)-box 2
F12	Rn.95086	XM_343981	Sox9	SRY-box containing gene 9
G01	Rn.6327	NM_001009964	Tbx5	T-box 5
G02	Rn.48802	NM_053423	Tert	Telomerase reverse transcriptase
G03	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G04	Rn.7018	NM_013174	Tgfb3	Transforming growth factor, beta 3
G05	Rn.108198	NM_012673	Thy1	Thy-1 cell surface antigen
G06	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G07	Rn.11267	NM_012889	Vcam1	Vascular cell adhesion molecule 1
G08	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G09	Rn.2710	NM_031140	Vim	Vimentin
G10	Rn.35561	XM_342759	Vwf	Von Willebrand factor
G11	Rn.218621	XM_220546	Wnt3a	Wingless-type MMTV integration site family, member 3A
G12	Rn.122867	XM_224882	Zfp42	Zinc finger protein 42
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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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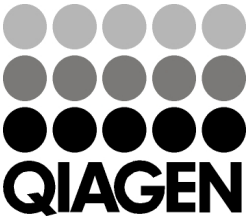

Sample & Assay Technologies