

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

Horse Mesenchymal Stem Cell

Cat. no. 330231 PAEC-082ZR

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 Horse 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 initial MSC isolates and their subsequent behavior. 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 MSC-specific marker genes which distinguish MSC 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.



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	Eca.12665	XM_001492023	ABCB1	ATP-binding cassette, sub-family B (MDR/TAP), member 1
A02	Eca.4371	XM_001917528	ACAN	Aggrecan
A03	N/A	XM_001497713	ACTA1	Actin, alpha 1, skeletal muscle
A04	N/A	XM_001503035	ACTA2	Actin, alpha 2, smooth muscle, aorta
A05	N/A	XM_001503380	ALCAM	Activated leukocyte cell adhesion molecule
A06	Eca.16119	XM_003363579	ANPEP	Alanyl (membrane) aminopeptidase
A07	Eca.12477	NM_001081787	BDNF	Brain-derived neurotrophic factor
A08	Eca.1530	XM_001493895	BMP2	Bone morphogenetic protein 2
A09	Eca.12760	NM_001163970	BMP4	Bone morphogenetic protein 4
A10	Eca.12936	XM_001493686	BMP6	Bone morphogenetic protein 6
A11	Eca.17234	NM_001195158	BMP7	Bone morphogenetic protein 7
A12	N/A	XM_001500907	BMPRIA	Bone morphogenetic protein receptor, type IA
B01	Eca.2296	NM_001163961	CASP3	Caspase 3, apoptosis-related cysteine peptidase
B02	Eca.16842	NM_001085435	CD44	CD44 molecule (Indian blood group)
B03	Eca.1955	XM_001499586	COL1A1	Collagen, type I, alpha 1
B04	Eca.5282	NM_001081764	COL2A1	Collagen, type II, alpha 1
B05	Eca.426	NM_001081860	CSF3	Colony stimulating factor 3 (granulocyte)
B06	Eca.16809	NM_001122762	CTNNB1	Catenin (cadherin-associated protein), beta 1, 88kDa
B07	N/A	XM_001500078	ENG	Endoglin
B08	N/A	XM_001501105	ERBB2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
B09	Eca.12651	NM_001195221	FGF2	Fibroblast growth factor 2 (basic)
B10	Eca.13387	NM_001082520	GDF5	Growth differentiation factor 5
B11	N/A	XM_001915579	GDF6	Growth differentiation factor 6
B12	Eca.10972	NM_001081882	GM-CSF	Granulocyte-macrophage colony-stimulating-factor
C01	Eca.721	NM_001081949	IFNG	Interferon, gamma
C02	Eca.12985	NM_001082498	IGF1	Insulin-like growth factor 1 (somatomedin C)
C03	Eca.13090	NM_001082490	IL10	Interleukin 10
C04	Eca.13475	NM_001082526	IL1B	Interleukin 1, beta
C05	Eca.12956	NM_001082496	IL6	Interleukin 6 (interferon, beta 2)
C06	N/A	XM_001495066	ITGA6	Integrin, alpha 6
C07	Eca.16157	XM_001498530	ITGAV	Integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)
C08	Eca.16159	NM_001114177	ITGAX	Integrin, alpha X (complement component 3 receptor 4 subunit)
C09	Eca.1720	XM_001492665	ITGB1	Integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)
C10	N/A	XM_001495238	JAG1	Jagged 1
C11	N/A	XM_001493724	KAT2B	K(lysine) acetyltransferase 2B
C12	Eca.12647	XM_001916946	KDR	Kinase insert domain receptor (a type III receptor tyrosine kinase)
D01	Eca.12984	NM_001163962	KITLG	KIT ligand
D02	N/A	XM_001487849	LOC100049848	Hepatocyte growth factor-like
D03	N/A	XM_001492411	LOC100051258	Peroxisome proliferator-activated receptor gamma-like
D04	N/A	XM_001488389	LOC100052565	Uncharacterized protein C12orf43 homolog
D05	N/A	XM_001498109	LOC100052655	Fibroblast growth factor 10-like
D06	Eca.16383	XM_001497759	LOC100053343	Transforming protein RhoA-like
D07	N/A	XM_001917269	LOC100054499	Galactoside 2-alpha-L-fucosyltransferase 1-like
D08	N/A	XM_001489519	LOC100055254	Zinc finger protein 42 homolog
D09	Eca.5947	XM_001918179	LOC100057208	Collagen alpha-1(I)X chain-like
D10	N/A	XM_001496805	LOC100060077	Insulin-like

Position	UniGene	GenBank	Symbol	Description
D11	Eca.1171	XM_001493058	LOC100060960	Transcription factor IIIA-like
D12	N/A	XM_001495425	LOC100064555	Intestinal-type alkaline phosphatase-like
E01	Eca.915	XM_001499936	LOC100070281	Histone deacetylase 1-like
E02	N/A	XM_001501493	LOC100071665	Beta-type platelet-derived growth factor receptor-like
E03	Eca.2917	XM_001503130	LOC100072241	Annexin A5-like
E04	N/A	XM_003362885	LOC100073236	POU domain, class 5, transcription factor 2-like
E05	N/A	XM_003365488	LOC100629131	Leukemia inhibitory factor-like
E06	N/A	XM_003363842	LOC100630695	Telomerase reverse transcriptase-like
E07	N/A	XM_001917594	MCAM	Melanoma cell adhesion molecule
E08	Eca.12983	NM_001163874	MITF	Microphthalmia-associated transcription factor
E09	Eca.12657	XM_001493281	MMP2	Matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
E10	N/A	XM_001504953	MYOD1	Myogenic differentiation 1
E11	N/A	XM_001915709	NES	Neslin
E12	N/A	XM_001498582	NOTCH1	Notch 1
F01	N/A	XM_001500115	NT5E	5'-nucleotidase, ecto (CD73)
F02	N/A	XM_001504143	PIGS	Phosphatidylinositol glycan anchor biosynthesis, class S
F03	N/A	XM_001498679	PROM1	Prominin 1
F04	N/A	XM_001499837	PTK2	PTK2 protein tyrosine kinase 2
F05	Eca.12926	XM_003364560	PTPRC	Protein tyrosine phosphatase, receptor type, C
F06	Eca.13032	XM_001502519	RUNX2	Run1-related transcription factor 2
F07	Eca.12623	NM_001081866	SLC2A4	Solute carrier family 2 (facilitated glucose transporter), member 4
F08	Eca.12965	XM_001496822	SMAD3	SMAD family member 3
F09	Eca.12964	XM_003365557	SMAD4	SMAD family member 4
F10	N/A	XM_001494542	SMURF1	SMAD specific E3 ubiquitin protein ligase 1
F11	N/A	XM_001917106	SMURF2	SMAD specific E3 ubiquitin protein ligase 2
F12	Eca.16902	XM_003363345	SOX2	SRY (sex determining region Y)-box 2
G01	Eca.5281	XM_001498424	SOX9	SRY (sex determining region Y)-box 9
G02	N/A	XM_001918214	SREBF1	Sterol regulatory element binding transcription factor 1
G03	N/A	XM_001489960	TBX5	T-box 5
G04	Eca.6371	NM_001081849	TGFB1	Transforming growth factor, beta 1
G05	N/A	XM_001492687	TGFB3	Transforming growth factor, beta 3
G06	Eca.14475	XM_001503225	THY1	Thy-1 cell surface antigen
G07	Eca.13019	NM_001081819	TNF	Tumor necrosis factor
G08	Eca.14427	NM_001101650	VCAM	Vascular cell adhesion molecule
G09	Eca.12648	NM_001081821	VEGFA	Vascular endothelial growth factor A
G10	Eca.13250	NM_001243145	VIM	Vimentin
G11	N/A	NM_001242566	VWF	Von Willebrand factor
G12	N/A	XM_001487899	WNT3	Wingless-type MMTV integration site family, member 3
H01	Eca.15483	NM_001081838	ACTB	Actin, beta
H02	Eca.13489	NM_001082502	B2M	Beta-2-microglobulin
H03	Eca.487	NM_001163856	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Eca.12727	XM_001490189	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Eca.13629	XM_001492042	LOC100056766	60S ribosomal protein L32-like
H06	N/A horse	SA_00139	EGDC	Horse 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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