RT² Profiler PCR Array (Rotor-Gene® Format)

Human Embryonic Stem Cells

Cat. no. 330231 PAHS-081YR

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 Human 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 ΔΔCT 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

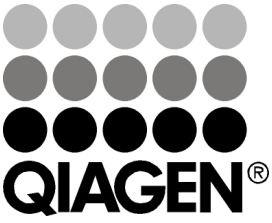
RT² Profiler PCR Arrays in the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

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.



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	Hs.500483	NM_001613	ACTA2	Actin, alpha 2, smooth muscle, aorta
A02	Hs.149342	NM_020661	AICDA	Activation-induced cytidine deaminase
A03	Hs.592379	NM_000477	ALB	Albumin
A04	Hs.75431	NM_000478	ALPL	Alkaline phosphatase, liver/bone/kidney
A05	Hs.58974	NM_001237	CCNA2	Cyclin A2
A06	Hs.502328	NM_000610	CD44	CD44 molecule (Indian blood group)
A07	Hs.467637	NM_001791	CDC42	Cell division cycle 42 (GTP binding protein, 25kDa)
A08	Hs.732435	NM_001786	CDK1	Cyclin-dependent kinase 1
A09	Hs.643465	NM_001270	CHD1	Chromodomain helicase DNA binding protein 1
A10	Hs.733236	NM_017780	CHD7	Chromodomain helicase DNA binding protein 7
A11	Hs.343571	NM_014516	CNOT3	CCR4-NOT transcription complex, subunit 3
A12	Hs.594952	NM_001927	DES	Desmin
B01	Hs.351113	NM_138815	DPPA2	Developmental pluripotency associated 2
B02	Hs.131358	NM_199286	DPPA3	Developmental pluripotency associated 3
B03	Hs.317659	NM_018189	DPPA4	Developmental pluripotency associated 4
B04	Hs.125331	NM_001025290	DPPA5	Developmental pluripotency associated 5
B05	Hs.134989	NM_001427	EN2	Engrailed homeobox 2
B06	Hs.76753	NM_000118	ENG	Endoglin
B07	Hs.435845	NM_004452	ESRRB	Estrogen-related receptor beta
B08	Hs.194061	NM_014209	ETV2	Ets variant 2
B09	Hs.284244	NM_002006	FGF2	Fibroblast growth factor 2 (basic)
B10	Hs.37055	NM_004464	FGF5	Fibroblast growth factor 5
B11	Hs.513984	NM_002018	FLII	Flightless I homolog (Drosophila)
B12	Hs.765	NM_002049	GATA1	GATA binding protein 1 (globin transcription factor 1)
C01	Hs.367725	NM_032638	GATA2	GATA binding protein 2
C02	Hs.741506	NM_005257	GATA6	GATA binding protein 6
C03	Hs.86232	NM_020634	GDF3	Growth differentiation factor 3
C04	Hs.514227	NM_002055	GFAP	Glial fibrillary acidic protein
C05	Hs.440438	NM_173849	GSC	Goosecoid homeobox
C06	Hs.152531	NM_004821	HAND1	Heart and neural crest derivatives expressed 1
C07	Hs.116462	NM_178849	HNF4A	Hepatocyte nuclear factor 4, alpha
C08	Hs.184233	NM_004134	HSPA9	Heat shock 70kDa protein 9 (mortalin)
C09	Hs.505	NM_002202	ISL1	ISL LIM homeobox 1
C10	Hs.397010	NM_006388	KAT5	K(lysine) acetyltransferase 5
C11	Hs.376206	NM_004235	KLF4	Kruppel-like factor 4 (gut)
C12	Hs.86154	NM_024674	LIN28A	Lin-28 homolog A (C. elegans)
D01	Hs.603755	NM_002398	MEIS1	Meis homeobox 1
D02	Hs.447531	NM_018670	MESP1	Mesoderm posterior 1 homolog (mouse)
D03	Hs.282079	NM_031944	MIXL1	Mix paired-like homeobox
D04	Hs.179718	NM_002466	MYBL2	V-myb myeloblastosis viral oncogene homolog (avian)-like 2
D05	Hs.202453	NM_002467	MYC	V-myc myelocytomatosis viral oncogene homolog (avian)
D06	Hs.181768	NM_002478	MYOD1	Myogenic differentiation 1
D07	Hs.635882	NM_024865	NANOG	Nanog homeobox
D08	Hs.711235	NM_000615	NCAM1	Neural cell adhesion molecule 1
D09	Hs.527971	NM_006617	NES	Nestin
D10	Hs.54473	NM_004387	NKX2-5	NK2 homeobox 5
D11	Hs.268490	NM_000475	NR0B1	Nuclear receptor subfamily 0, group B, member 1
D12	Hs.33446	NM_003822	NR5A2	Nuclear receptor subfamily 5, group A, member 2
E01	Hs.20131	NM_001489	NR6A1	Nuclear receptor subfamily 6, group A, member 1
E02	Hs.153952	NM_002526	NT5E	5'-nucleotidase, ecto (CD73)
E03	Hs.732068	NM_005806	OLIG2	Oligodendrocyte lineage transcription factor 2
E04	Hs.741558	NM_021728	OTX2	Orthodenticle homeobox 2
E05	Hs.466714	NM_019088	PAF1	Paf1, RNA polymerase II associated factor, homolog (S. cerevisiae)
E06	Hs.611376	NM_000280	PAX6	Paired box 6
E07	Hs.249184	NM_002701	POU5F1	POU class 5 homeobox 1
E08	Hs.736037	NM_024504	PRDM14	PR domain containing 14
E09	Hs.735592	NM_018151	RIF1	RAP1 interacting factor homolog (yeast)

Position	UniGene	GenBank	Symbol	Description
E10	Hs.517113	NM_020436	SALL4	Sal-like 4 (Drosophila)
E11	Hs.22654	NM_006920	SCN1A	Sodium channel, voltage-gated, type I, alpha subunit
E12	Hs.604588	NM_005900	SMAD1	SMAD family member 1
F01	Hs.705764	NM_005901	SMAD2	SMAD family member 2
F02	Hs.742270	NM_005902	SMAD3	SMAD family member 3
F03	Hs.95582	NM_006942	SOX15	SRY (sex determining region Y)-box 15
F04	Hs.98367	NM_022454	SOX17	SRY (sex determining region Y)-box 17
F05	Hs.732963	NM_003106	SOX2	SRY (sex determining region Y)-box 2
F06	Hs.157429	NM_005634	SOX3	SRY (sex determining region Y)-box 3
F07	Hs.709543	NM_031439	SOX7	SRY (sex determining region Y)-box 7
F08	Hs.463059	NM_003150	STAT3	Signal transducer and activator of transcription 3 (acute-phase response factor)
F09	Hs.742027	NM_003181	T	T, brachyury homolog (mouse)
F10	Hs.410977	NM_003186	TAGLN	Transgelin
F11	Hs.737706	NM_003189	TAL1	T-cell acute lymphocytic leukemia 1
F12	Hs.161640	NM_000353	TAT	Tyrosine aminotransferase
G01	Hs.744016	NM_016569	TBX3	T-box 3
G02	Hs.657044	NM_003200	TCF3	Transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47)
G03	Hs.2484	NM_021966	TCL1A	T-cell leukemia/lymphoma 1A
G04	Hs.385870	NM_003212	TDGF1	Teratocarcinoma-derived growth factor 1
G05	Hs.89640	NM_000459	TEK	TEK tyrosine kinase, endothelial
G06	Hs.492203	NM_198253	TERT	Telomerase reverse transcriptase
G07	Hs.632200	NM_020457	THAP11	THAP domain containing 11
G08	Hs.644697	NM_006288	THY1	Thy-1 cell surface antigen
G09	Hs.467408	NM_005762	TRIM28	Tripartite motif containing 28
G10	Hs.458406	NM_003577	UTF1	Undifferentiated embryonic cell transcription factor 1
G11	Hs.335787	NM_174900	ZFP42	Zinc finger protein 42 homolog (mouse)
G12	Hs.336681	NM_003410	ZFX	Zinc finger protein, X-linked
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.544577	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human 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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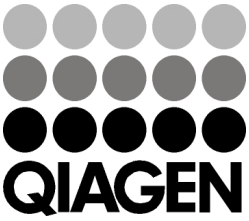

Sample & Assay Technologies