

RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Pig Embryonic Stem Cell

Cat. no. 330231 PASS-081ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm® BioMark™



Sample & Assay Technologies

Description

The Pig 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 formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

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 (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	ACTA2	ALB	ALPL	BMP4	CCNA2	CD44	CDC42	CDK1	CHD1	CHD7	CNOT3	DES
B	DNMT3B	DPPA4	DPPA5	EN2	ENG	ESRRB	ETV2	FGF2	FGF5	FOS	GATA1	GATA2
C	GATA4	GATA6	GBX2	GSC	GDF3	GFAP	hand1	HNF4A	HSPA9	KAT5	KLF4	LEFTY2
D	LIN28A	LOC1005111 33	ISL1	LOC1005171 52	MESP1	MIXL1	MYBL2	MYC	MYOD1	NANOG	NCAM1	NES
E	NIKX2-5	NR0B1	NR5A2	NTSE	OIG2	OTX1	LOC1005141 94	PAX6	POU5F1	PRDM14	LOC1005254 49	RIF1
F	SALL4	TAGLN	SMAD1	SMAD2	SMAD3	SMAD4	SOX15	SOX17	SOX2	SOX3	SOX7	STAT3
G	T	TAT	TBX3	TCF3	TCL1A	TEK	TERT	THAP11	THY1	UTF1	ZFP42	ZFX
H	ACTB	B2M	GAPDH	HPRT1	RPL13A	SGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description	Assay
A01	Ssc.53896	NM_001164650	ACTA2	Actin, alpha 2, smooth muscle, aorta	PPS01475A
A02	Ssc.56897	NM_001005208	ALB	Albumin	PPS00305A
A03	Ssc.4922	XM_013991645	ALPL	Alkaline phosphatase, liver/bone/kidney	PPS04347B
A04	Ssc.16690	NM_001101031	BMP4	Bone morphogenetic protein 4	PPS01776A
A05	Ssc.75629	NM_001177926	CCNA2	Cyclin A2	PPS04751A
A06	Ssc.36853	XM_003122866	CD44	CD44 molecule (Indian blood group)	PPS15136A
A07	Ssc.26948	NM_001078680	CDC42	Cell division cycle 42 (GTP binding protein, 25kDa)	PPS01572A
A08	Ssc.873	NM_001159304	CDK1	Cyclin-dependent kinase 1	PPS03505A
A09	N/A	XM_003123803	CHD1	Chromodomain helicase DNA binding protein 1	PPS07047A
A10	Ssc.97869	XM_003350501	CHD7	Chromodomain helicase DNA binding protein 7	PPS03931A
A11	N/A	XM_005664822	CNOT3	CCR4-NOT transcription complex, subunit 3	PPS06404A
A12	Ssc.24	NM_001001535	DES	Desmin	PPS00134A
B01	N/A	XM_001928593	DNMT3B	DNA (cytosine-5-)-methyltransferase 3 beta	PPS04190A
B02	N/A	XM_005654065	DPPA4	Developmental pluripotency associated 4	PPS15673A
B03	Ssc.3153	NM_001160273	DPPA5	Developmental pluripotency associated 5	PPS04570A
B04	N/A	XM_003134527	EN2	Engrailed homeobox 2	PPS09980A
B05	Ssc.80004	NM_214031	ENG	Endoglin	PPS00436A
B06	N/A	XM_001928051	ESRRB	Estrogen-related receptor beta	PPS02234A
B07	N/A	XM_013998338	ETV2	Ets variant 2	PPS71607A
B08	Ssc.17772	XM_013978917	FGF2	Fibroblast growth factor 2 (basic)	PPS00943A
B09	N/A	XM_003129367	FGF5	Fibroblast growth factor 5	PPS10633A
B10	Ssc.1555	NM_001123113	FOS	FBJ murine osteosarcoma viral oncogene homolog	PPS02085A
B11	N/A	NM_001278767	GATA1	GATA binding protein 1 (globin transcription factor 1)	PPS07236A
B12	Ssc.4743	NM_213879	GATA2	GATA binding protein 2	PPS00258A
C01	Ssc.54237	NM_214293	GATA4	GATA binding protein 4	PPS00862A
C02	Ssc.2258	NM_214328	GATA6	Transcription factor GATA-6	PPS00904A
C03	N/A	XM_003133755	GBX2	Gastrulation brain homeobox 2	PPS05411A
C04	Ssc.72109	XM_003482313	GSC	Goosecoid protein	PPS00659A
C05	N/A	XM_003126512	GDF3	Growth differentiation factor 3	PPS09498A
C06	Ssc.5137	NM_001244397	GFAP	Glial fibrillary acidic protein	PPS00012A
C07	Ssc.96071	NM_001014428	hand1	Heart and neural crest derivatives expressed 1	PPS01325A
C08	Ssc.19208	NM_001044571	HNF4A	Hepatocyte nuclear factor 4, alpha	PPS01486A
C09	Ssc.44322	XM_005661695	HSPA9	Heat shock 70kDa protein 9 (mortalin)	PPS06437A
C10	Ssc.49660	NM_001243915	KAT5	K(lysine) acetyltransferase 5	PPS09908A
C11	Ssc.9984	NM_001031782	KLF4	Kruppel-like factor 4 (gut)	PPS01365A
C12	Ssc.78498	NM_001195346	LEFTY2	Left-right determination factor 2	PPS04708A
D01	Ssc.70783	NM_001123133	LIN28A	Lin-28 homolog A (C. elegans)	PPS02025A
D02	N/A	XM_005655687	LOC100511 133	Developmental pluripotency-associated protein 3-like	PPS09568A
D03	Ssc.62680	XM_003133934	ISL1	Insulin gene enhancer protein ISL-1-like	PPS09684A
D04	N/A	XM_005662507	LOC100517	Meis homeobox 1	PPS12055A

Position	UniGene	GenBank	Symbol	Description	Assay
			152		
D05	N/A	XM_001925990	MESP1	Mesoderm posterior 1 homolog (mouse)	PPS08928A
D06	N/A	XM_003482780	MIXL1	Mix paired-like homeobox	PPS71608A
D07	Ssc.38821	NM_001244469	MYBL2	V-myb myeloblastosis viral oncogene homolog (avian)-like 2	PPS03959A
D08	Ssc.21433	NM_001005154	MYC	V-myc myelocytomatosis viral oncogene homolog (avian)	PPS01222A
D09	Ssc.22906	NM_001002824	MYOD1	Myogenic differentiation 1	PPS01078A
D10	Ssc.42681	NM_001129971	NANOG	Nanog homeobox	PPS04337A
D11	Ssc.3051	XM_005667343	NCAM1	Neural cell adhesion molecule 1	PPS11403A
D12	N/A	XM_005663265	NES	Nestin	PPS02895A
E01	Ssc.48242	XM_003134041	NKX2-5	NK2 homeobox 5	PPS13690A
E02	Ssc.14500	NM_214387	NR0B1	Nuclear receptor subfamily 0, group B, member 1	PPS00980A
E03	Ssc.42200	NM_001267893	NR5A2	Nuclear receptor subfamily 5, group A, member 2	PPS14565A
E04	Ssc.47657	XM_001927095	NT5E	5'-nucleotidase, ecto (CD73)	PPS09410A
E05	Ssc.21792	XM_003358929	OLIG2	Oligodendrocyte lineage transcription factor 2	PPS08178A
E06	N/A	XM_003125096	OTX1	Orthodenticle homeobox 1	PPS13348A
E07	Ssc.24777	XM_003359387	LOC100514194	Paf1, RNA polymerase II associated factor, homolog (S. cerevisiae)	PPS05353A
E08	Ssc.33027	NM_001244173	PAX6	Paired box 6	PPS10826A
E09	Ssc.29069	NM_001113060	POU5F1	POU class 5 homeobox 1	PPS01919A
E10	N/A	XM_003125600	PRDM14	PR domain containing 14	PPS06107A
E11	N/A	XM_003123002	LOC100525449	REX1, RNA exonuclease 1 homolog (S. cerevisiae)	PPS71610A
E12	N/A	XM_003133824	RIF1	RAP1 interacting factor homolog (yeast)	PPS05565A
F01	Ssc.71497	NM_001114673	SALL4	Sal-like 4 (Drosophila)	PPS01985A
F02	Ssc.11913	NM_001244150	TAGLN	Transgelin	PPS00364A
F03	Ssc.11757	NM_213965	SMAD1	SMAD family member 1	PPS00359A
F04	Ssc.45636	NM_001256148	SMAD2	SMAD family member 2	PPS03354A
F05	Ssc.15913	NM_214137	SMAD3	SMAD family member 3	PPS00587A
F06	Ssc.249	NM_214072	SMAD4	SMAD family member 4	PPS00481A
F07	Ssc.61757	XM_003131946	SOX15	SRY (sex determining region Y)-box 15	PPS14086A
F08	N/A	XM_001928376	SOX17	SRY (sex determining region Y)-box 17	PPS08566A
F09	Ssc.42849	NM_001123197	SOX2	SRY (sex determining region Y)-box 2	PPS01082A
F10	N/A	XM_003360464	SOX3	SRY (sex determining region Y)-box 3	PPS17445A
F11	N/A	XM_003359052	SOX7	SRY (sex determining region Y)-box 7	PPS03525A
F12	Ssc.3409	NM_001044580	STAT3	Signal transducer and activator of transcription 3 (acute-phase response factor)	PPS01492A
G01	Ssc.97578	XM_001928144	T	T, brachyury homolog (mouse)	PPS00761A
G02	Ssc.52306	XM_003126884	TAT	Tyrosine aminotransferase	PPS04993A
G03	N/A	XM_001927997	TBX3	T-box 3	PPS02505A
G04	N/A	XM_005661419	TCF3	Transcription factor 3	PPS71609A
G05	N/A	XM_005656461	TCL1A	T-cell leukemia/lymphoma 1A	PPS09039A
G06	Ssc.4753	XM_013993491	TEK	TEK tyrosine kinase, endothelial	PPS00137A
G07	Ssc.42685	NM_001244300	TERT	Telomerase reverse transcriptase	PPS71605A
G08	Ssc.2853	NM_001246182	THAP11	THAP domain containing 11	PPS06403A
G09	Ssc.20133	NM_001146129	THY1	Thy-1 cell surface antigen	PPS04524A
G10	N/A	XM_001925612	UTF1	Undifferentiated embryonic cell transcription factor 1	PPS09437A
G11	N/A	XM_001927029	ZFP42	Zinc finger protein 42 homolog (mouse)	PPS01619A
G12	Ssc.97572	XM_003134981	ZFX	Zinc finger protein, X-linked	PPS00619A
H01	Ssc.10316	XM_003124280	ACTB	Actin, beta	PPS71698A
H02	Ssc.73773	NM_213978	B2M	Beta-2-microglobulin	PPS00376A
H03	Ssc.16135	NM_001206359	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase	PPS00192A
H04	Ssc.4158	NM_001032376	HPRT1	Hypoxanthine phosphoribosyltransferase 1	PPS00668B
H05	Ssc.27927	NM_001244068	RPL13A	Ribosomal protein L13a	PPS01574A
H06	N/A	SA_00133	SGDC	Pig Genomic DNA Contamination	PPS71596A
H07	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H08	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H09	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H10	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A
H11	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A
H12	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A

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 qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT ² SYBR Green ROX™ qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT ² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* 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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