

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

Mouse TGFb Signaling Targets

Cat. no. 330231 PAMM-235ZA

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 Mouse TGF β Signaling Targets RT² Profiler PCR Array profiles the expression of 84 key genes responsive to TGF β signal transduction. The TGF β superfamily comprises 4 signaling pathways: TGF β , Bone Morphogenic Protein (BMP), Activin, and Nodal. These pathways regulate multiple cellular processes, such as development and differentiation, cellular proliferation and migration, apoptosis, and cell cycle regulation. Pathway stimulation by TGF β ligands (TGF β s, BMPs, Growth Differentiation Factors, and others) activate the SMAD transcription factors, which translocate into the nucleus to interact with additional transcription factors and activate specific target genes. Dysregulation of the TGF β signal transduction pathway is associated with diseases such as fibrosis or cancer. Hundreds of TGF β target genes have been identified using experimental techniques such as expression studies and chromatin immunoprecipitation (ChIP) as well as bioinformatic analysis of predicted transcription factor binding sites. This array includes TGF β signaling transcription factors and highly relevant target genes identified by multiple studies. Results obtained with this array can be used to analyze activation or inhibition of TGF β signaling. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in TGF β -related cellular processes 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	<i>Acta2</i>	<i>Acvr1</i>	<i>Acvr1l</i>	<i>Agt</i>	<i>Aip1l</i>	<i>Ar</i>	<i>Atf3</i>	<i>Atf4</i>	<i>Bach1</i>	<i>Bcl2l1</i>	<i>Bdnf</i>	<i>Bhlhe40</i>
B	<i>Brd2</i>	<i>Cdc6</i>	<i>Cdkn1b</i>	<i>Cebpb</i>	<i>Creb1</i>	<i>Crebbp</i>	<i>Cryab</i>	<i>Ctnnb1</i>	<i>Dnaja1</i>	<i>E2f4</i>	<i>Emp1</i>	<i>Eng</i>
C	<i>Ep300</i>	<i>Ephb2</i>	<i>Fn1</i>	<i>Fos</i>	<i>Furin</i>	<i>Gadd45b</i>	<i>Gli2</i>	<i>Glf2i</i>	<i>Herpud1</i>	<i>Hes1</i>	<i>Hey1</i>	<i>Hmox1</i>
D	<i>Id1</i>	<i>Id2</i>	<i>Id3</i>	<i>Ilfrd1</i>	<i>Il10</i>	<i>Klf10</i>	<i>Map3k7</i>	<i>Mapk14</i>	<i>Mapk8</i>	<i>Mbd1</i>	<i>Mmp2</i>	<i>Mx2</i>
E	<i>Myc</i>	<i>Myod1</i>	<i>Nfib</i>	<i>Nfkbia</i>	<i>Notch1</i>	<i>Pdgfra</i>	<i>Plg</i>	<i>Ppara</i>	<i>Ptgs2</i>	<i>Pthlh</i>	<i>Plk2</i>	<i>Plk2b</i>
F	<i>Rad21</i>	<i>Rara</i>	<i>Rbl1</i>	<i>Rhoa</i>	<i>Rhob</i>	<i>Runx1</i>	<i>S100a8</i>	<i>Serpine1</i>	<i>Shh</i>	<i>Smad1</i>	<i>Smad3</i>	<i>Smad5</i>
G	<i>Smad6</i>	<i>Snai1</i>	<i>Sox4</i>	<i>Sp1</i>	<i>Srebf2</i>	<i>Tgfb2</i>	<i>Tgfb2</i>	<i>Thbs1</i>	<i>Tnfrsf10</i>	<i>Txnip</i>	<i>Vegfa</i>	<i>Vwf1</i>
H	<i>Actb</i>	<i>B2m</i>	<i>Gapdh</i>	<i>Gusb</i>	<i>Hsp90ab1</i>	<i>MGDC</i>	<i>RTC</i>	<i>RTC</i>	<i>RTC</i>	<i>PPC</i>	<i>PPC</i>	<i>PPC</i>

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.213025	NM_007392	<i>Acta2</i>	Actin, alpha 2, smooth muscle, aorta
A02	Mm.689	NM_007394	<i>Acvr1</i>	Activin A receptor, type 1
A03	Mm.279542	NM_009612	<i>Acvr1l</i>	Activin A receptor, type II-like 1
A04	Mm.301626	NM_007428	<i>Agt</i>	Angiotensinogen (serpin peptidase inhibitor, clade A, member 8)
A05	Mm.95707	NM_053245	<i>Aip1l</i>	Aryl hydrocarbon receptor-interacting protein-like 1
A06	Mm.39005	NM_013476	<i>Ar</i>	Androgen receptor
A07	Mm.2706	NM_007498	<i>Atf3</i>	Activating transcription factor 3
A08	Mm.641	NM_009716	<i>Atf4</i>	Activating transcription factor 4
A09	Mm.26147	NM_007520	<i>Bach1</i>	BTB and CNC homology 1
A10	Mm.238213	NM_009743	<i>Bcl2l1</i>	Bcl2-like 1
A11	Mm.1442	NM_007540	<i>Bdnf</i>	Brain derived neurotrophic factor
A12	Mm.2436	NM_011498	<i>Bhlhe40</i>	Basic helix-loop-helix family, member e40
B01	Mm.3444	NM_010238	<i>Brd2</i>	Bromodomain containing 2
B02	Mm.20912	NM_011799	<i>Cdc6</i>	Cell division cycle 6 homolog (S. cerevisiae)
B03	Mm.2958	NM_009875	<i>Cdkn1b</i>	Cyclin-dependent kinase inhibitor 1B
B04	Mm.439656	NM_009883	<i>Cebpb</i>	CCAAT/enhancer binding protein (C/EBP), beta
B05	Mm.453295	NM_133828	<i>Creb1</i>	CAMP responsive element binding protein 1
B06	Mm.132238	NM_001025432	<i>Crebbp</i>	CREB binding protein
B07	Mm.178	NM_009964	<i>Cryab</i>	Crystallin, alpha B
B08	Mm.291928	NM_007614	<i>Ctnnb1</i>	Catenin (cadherin associated protein), beta 1
B09	Mm.27897	NM_008298	<i>Dnaja1</i>	DnaJ (Hsp40) homolog, subfamily A, member 1
B10	Mm.34554	NM_148952	<i>E2f4</i>	E2F transcription factor 4
B11	Mm.182785	NM_010128	<i>Emp1</i>	Epithelial membrane protein 1
B12	Mm.225297	NM_007932	<i>Eng</i>	Endoglin
C01	Mm.258397	NM_177821	<i>Ep300</i>	E1A binding protein p300
C02	Mm.250981	NM_010142	<i>Ephb2</i>	Eph receptor B2
C03	Mm.193099	NM_010233	<i>Fn1</i>	Fibronectin 1
C04	Mm.246513	NM_010234	<i>Fos</i>	FBJ osteosarcoma oncogene
C05	Mm.5241	NM_011046	<i>Furin</i>	Furin (paired basic amino acid cleaving enzyme)
C06	Mm.1360	NM_008655	<i>Gadd45b</i>	Growth arrest and DNA-damage-inducible 45 beta
C07	Mm.273292	NM_001081125	<i>Gli2</i>	GLI-Kruppel family member GLI2
C08	Mm.261570	NM_010365	<i>Glf2i</i>	General transcription factor II I
C09	Mm.29151	NM_022331	<i>Herpud1</i>	Homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
C10	Mm.390859	NM_008235	<i>Hes1</i>	Hairy and enhancer of split 1 (Drosophila)
C11	Mm.29581	NM_010423	<i>Hey1</i>	Hairy/enhancer-of-split related with YRPW motif 1
C12	Mm.276389	NM_010442	<i>Hmox1</i>	Heme oxygenase (decycling) 1
D01	Mm.444	NM_010495	<i>Id1</i>	Inhibitor of DNA binding 1
D02	Mm.34871	NM_010496	<i>Id2</i>	Inhibitor of DNA binding 2
D03	Mm.110	NM_008321	<i>Id3</i>	Inhibitor of DNA binding 3
D04	Mm.168	NM_013562	<i>Ilfrd1</i>	Interferon-related developmental regulator 1
D05	Mm.874	NM_010548	<i>Il10</i>	Interleukin 10
D06	Mm.4292	NM_013692	<i>Klf10</i>	Kruppel-like factor 10
D07	Mm.258589	NM_172688	<i>Map3k7</i>	Mitogen-activated protein kinase kinase kinase 7
D08	Mm.311337	NM_011951	<i>Mapk14</i>	Mitogen-activated protein kinase 14

Position	UniGene	GenBank	Symbol	Description
D09	Mm.21495	NM_016700	Mapk8	Mitogen-activated protein kinase 8
D10	Mm.22522	NM_013594	Mbd1	Methyl-CpG binding domain protein 1
D11	Mm.29564	NM_008610	Mmp2	Matrix metalloproteinase 2
D12	Mm.1763	NM_013601	Msx2	Homeobox, msh-like 2
E01	Mm.2444	NM_010849	Myc	Myelocytomatosis oncogene
E02	Mm.1526	NM_010866	Myod1	Myogenic differentiation 1
E03	Mm.317947	NM_008687	Nfib	Nuclear factor I/B
E04	Mm.170515	NM_010907	Nfkbia	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
E05	Mm.290610	NM_008714	Notch1	Notch gene homolog 1 (Drosophila)
E06	Mm.2675	NM_008808	Pdgfra	Platelet derived growth factor, alpha
E07	Mm.971	NM_008877	Plg	Plasminogen
E08	Mm.212789	NM_011144	Ppara	Peroxisome proliferator activated receptor alpha
E09	Mm.292547	NM_011198	Ptgs2	Prostaglandin-endoperoxide synthase 2
E10	Mm.28440	NM_008970	Pthlh	Parathyroid hormone-like peptide
E11	Mm.254494	NM_007982	Plk2	PTK2 protein tyrosine kinase 2
E12	Mm.21613	NM_172498	Plk2b	PTK2 protein tyrosine kinase 2 beta
F01	Mm.182628	NM_009009	Rad21	RAD21 homolog (S. pombe)
F02	Mm.439744	NM_009024	Rara	Retinoic acid receptor, alpha
F03	Mm.244671	NM_011249	Rbl1	Retinoblastoma-like 1 (p107)
F04	Mm.757	NM_016802	Rhoa	Ras homolog gene family, member A
F05	Mm.687	NM_007483	Rhob	Ras homolog gene family, member B
F06	Mm.4081	NM_009821	Runx1	Runt related transcription factor 1
F07	Mm.21567	NM_013650	S100a8	S100 calcium binding protein A8 (calgranulin A)
F08	Mm.250422	NM_008871	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
F09	Mm.57202	NM_009170	Shh	Sonic hedgehog
F10	Mm.223717	NM_008539	Smad1	MAD homolog 1 (Drosophila)
F11	Mm.7320	NM_016769	Smad3	MAD homolog 3 (Drosophila)
F12	Mm.272920	NM_008541	Smad5	MAD homolog 5 (Drosophila)
G01	Mm.325757	NM_008542	Smad6	MAD homolog 6 (Drosophila)
G02	Mm.2093	NM_011427	Snai1	Snail homolog 1 (Drosophila)
G03	Mm.240627	NM_009238	Sox4	SRY-box containing gene 4
G04	Mm.4618	NM_013672	Sp1	Trans-acting transcription factor 1
G05	Mm.38016	NM_033218	Srebf2	Sterol regulatory element binding factor 2
G06	Mm.18213	NM_009367	Tgfb2	Transforming growth factor, beta 2
G07	Mm.172346	NM_009371	Tgfb2	Transforming growth factor, beta receptor II
G08	Mm.4159	NM_011580	Thbs1	Thrombospondin 1
G09	Mm.1062	NM_009425	Tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10
G10	Mm.410189	NM_023719	Txnip	Thioredoxin interacting protein
G11	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
G12	Mm.20916	NM_011716	Wfs1	Wolfram syndrome 1 homolog (human)
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.
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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