

# RT<sup>2</sup> Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

## Mouse TGFb / BMP Signaling Pathway

Cat. no. 330231 PAMM-035ZA

For pathway expression analysis

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



Sample & Assay Technologies

## Description

The Mouse TGF $\beta$  / BMP Signaling Pathway RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 genes related to TGF $\beta$  / BMP-mediated signal transduction. The array includes members of the TGF $\beta$  superfamily of cytokines and their receptors. SMAD and SMAD target genes are included. Related genes including adhesion and extracellular molecules and transcription factors are included. Some of the genes involved in downstream cellular and developmental processes are also represented. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to TGF $\beta$  / BMP-mediated signal transduction with this array.

For further details, consult the *RT<sup>2</sup> Profiler PCR Array Handbook*.

## Shipping and storage

RT<sup>2</sup> 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. RT<sup>2</sup> Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

For long term storage, keep plates at  $-20^{\circ}\text{C}$ .

**Note:** Ensure that you have the correct RT<sup>2</sup> Profiler PCR Array format for your real-time cycler (see table above).

**Note:** Open the package and store the products appropriately immediately on receipt.

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## Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT<sup>2</sup> Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
<b>A</b>	<i>Acvr1</i>	<i>Acvr2a</i>	<i>Acvr1l</i>	<i>Amh</i>	<i>Amhr2</i>	<i>Afh4</i>	<i>Bambi</i>	<i>Bglap2</i>	<i>Bmp1</i>	<i>Bmp2</i>	<i>Bmp3</i>	<i>Bmp4</i>
<b>B</b>	<i>Bmp5</i>	<i>Bmp6</i>	<i>Bmp7</i>	<i>Bmper</i>	<i>Bmpr1a</i>	<i>Bmpr1b</i>	<i>Bmpr2</i>	<i>Cdkn1a</i>	<i>Cdkn1b</i>	<i>Cdkn2b</i>	<i>Chrd</i>	<i>Col1a1</i>
<b>C</b>	<i>Col1a2</i>	<i>Dcn</i>	<i>Dlx2</i>	<i>Emp1</i>	<i>Eng</i>	<i>Fos</i>	<i>Fst</i>	<i>Gadd45b</i>	<i>Gdf1</i>	<i>Gdf2</i>	<i>Gdf3</i>	<i>Gdf5</i>
<b>D</b>	<i>Gdf6</i>	<i>Gdf7</i>	<i>Gsc</i>	<i>Herpud1</i>	<i>Id1</i>	<i>Id2</i>	<i>lfrd1</i>	<i>Igf1</i>	<i>Igfbp3</i>	<i>Il6</i>	<i>Inha</i>	<i>Inhba</i>
<b>E</b>	<i>Jun</i>	<i>Junb</i>	<i>Lefty1</i>	<i>Ltbp1</i>	<i>Ltbp2</i>	<i>Ltbp4</i>	<i>Mecom</i>	<i>Myc</i>	<i>Nodal</i>	<i>Nog</i>	<i>Pdgfb</i>	<i>Plau</i>
<b>F</b>	<i>Runx1</i>	<i>Serpine1</i>	<i>Smad1</i>	<i>Smad2</i>	<i>Smad3</i>	<i>Smad4</i>	<i>Smad5</i>	<i>Smad7</i>	<i>Smurf1</i>	<i>Sox4</i>	<i>Stat1</i>	<i>Tgfb1</i>
<b>G</b>	<i>Tgfb1</i>	<i>Tgfb1l1</i>	<i>Tgfb2</i>	<i>Tgfb3</i>	<i>Tgfb3l</i>	<i>Tgfb3r1</i>	<i>Tgfb3r2</i>	<i>Tgfb3r3</i>	<i>Tgfb3rap1</i>	<i>Thbs1</i>	<i>Tnfrsf10</i>	<i>Tsc22d1</i>
<b>H</b>	<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: RT<sup>2</sup> Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.689	NM_007394	<i>Acvr1</i>	Activin A receptor, type 1
A02	Mm.314338	NM_007396	<i>Acvr2a</i>	Activin receptor IIA
A03	Mm.279542	NM_009612	<i>Acvr1l</i>	Activin A receptor, type II-like 1
A04	Mm.376094	NM_007445	<i>Amh</i>	Anti-Mullerian hormone
A05	Mm.60331	NM_144547	<i>Amhr2</i>	Anti-Mullerian hormone type 2 receptor
A06	Mm.641	NM_009716	<i>Afh4</i>	Activating transcription factor 4
A07	Mm.284863	NM_026505	<i>Bambi</i>	BMP and activin membrane-bound inhibitor, homolog ( <i>Xenopus laevis</i> )
A08	Mm.425160	NM_001032298	<i>Bglap2</i>	Bone gamma-carboxyglutamate protein 2
A09	Mm.27757	NM_009755	<i>Bmp1</i>	Bone morphogenetic protein 1
A10	Mm.103205	NM_007553	<i>Bmp2</i>	Bone morphogenetic protein 2
A11	Mm.209571	NM_173404	<i>Bmp3</i>	Bone morphogenetic protein 3
A12	Mm.6813	NM_007554	<i>Bmp4</i>	Bone morphogenetic protein 4
B01	Mm.428950	NM_007555	<i>Bmp5</i>	Bone morphogenetic protein 5
B02	Mm.385759	NM_007556	<i>Bmp6</i>	Bone morphogenetic protein 6
B03	Mm.595	NM_007557	<i>Bmp7</i>	Bone morphogenetic protein 7
B04	Mm.335020	NM_028472	<i>Bmper</i>	BMP-binding endothelial regulator
B05	Mm.237825	NM_009758	<i>Bmpr1a</i>	Bone morphogenetic protein receptor, type 1A
B06	Mm.39089	NM_007560	<i>Bmpr1b</i>	Bone morphogenetic protein receptor, type 1B
B07	Mm.7106	NM_007561	<i>Bmpr2</i>	Bone morphogenetic protein receptor, type II (serine/threonine kinase)
B08	Mm.195663	NM_007669	<i>Cdkn1a</i>	Cyclin-dependent kinase inhibitor 1A (P21)
B09	Mm.2958	NM_009875	<i>Cdkn1b</i>	Cyclin-dependent kinase inhibitor 1B
B10	Mm.423094	NM_007670	<i>Cdkn2b</i>	Cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)
B11	Mm.20457	NM_009893	<i>Chrd</i>	Chordin
B12	Mm.277735	NM_007742	<i>Col1a1</i>	Collagen, type I, alpha 1
C01	Mm.277792	NM_007743	<i>Col1a2</i>	Collagen, type I, alpha 2
C02	Mm.56769	NM_007833	<i>Dcn</i>	Decorin
C03	Mm.3896	NM_010054	<i>Dlx2</i>	Distal-less homeobox 2
C04	Mm.182785	NM_010128	<i>Emp1</i>	Epithelial membrane protein 1
C05	Mm.225297	NM_007932	<i>Eng</i>	Endoglin
C06	Mm.246513	NM_010234	<i>Fos</i>	FBJ osteosarcoma oncogene
C07	Mm.4913	NM_008046	<i>Fst</i>	Follistatin
C08	Mm.1360	NM_008655	<i>Gadd45b</i>	Growth arrest and DNA-damage-inducible 45 beta
C09	Mm.258280	NM_008107	<i>Gdf1</i>	Growth differentiation factor 1
C10	Mm.422844	NM_019506	<i>Gdf2</i>	Growth differentiation factor 2
C11	Mm.299742	NM_008108	<i>Gdf3</i>	Growth differentiation factor 3
C12	Mm.4744	NM_008109	<i>Gdf5</i>	Growth differentiation factor 5
D01	Mm.302555	NM_013526	<i>Gdf6</i>	Growth differentiation factor 6
D02	Mm.271308	NM_013527	<i>Gdf7</i>	Growth differentiation factor 7
D03	Mm.129	NM_010351	<i>Gsc</i>	Gooseoid homeobox
D04	Mm.29151	NM_022331	<i>Herpud1</i>	Homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
D05	Mm.444	NM_010495	<i>Id1</i>	Inhibitor of DNA binding 1
D06	Mm.34871	NM_010496	<i>Id2</i>	Inhibitor of DNA binding 2
D07	Mm.168	NM_013562	<i>lfrd1</i>	Interferon-related developmental regulator 1
D08	Mm.268521	NM_010512	<i>Igf1</i>	Insulin-like growth factor 1

Position	UniGene	GenBank	Symbol	Description
D09	Mm.29254	NM_008343	Igfbp3	Insulin-like growth factor binding protein 3
D10	Mm.1019	NM_031168	Il6	Interleukin 6
D11	Mm.1100	NM_010564	Inha	Inhibin alpha
D12	Mm.8042	NM_008380	Inhba	Inhibin beta-A
E01	Mm.275071	NM_010591	Jun	Jun oncogene
E02	Mm.1167	NM_008416	Junb	Jun-B oncogene
E03	Mm.378911	NM_010094	Lefty1	Left right determination factor 1
E04	Mm.269747	NM_019919	Ltbp1	Latent transforming growth factor beta binding protein 1
E05	Mm.3900	NM_013589	Ltbp2	Latent transforming growth factor beta binding protein 2
E06	Mm.272251	NM_175641	Ltbp4	Latent transforming growth factor beta binding protein 4
E07	Mm.56965	NM_007963	Mecom	MDS1 and EVI1 complex locus
E08	Mm.2444	NM_010849	Myc	Myelocytomatosis oncogene
E09	Mm.57195	NM_013611	Nodal	Nodal
E10	Mm.135266	NM_008711	Nog	Noggin
E11	Mm.144089	NM_011057	Pdgfb	Platelet derived growth factor, B polypeptide
E12	Mm.4183	NM_008873	Plau	Plasminogen activator, urokinase
F01	Mm.4081	NM_009821	Runx1	Runt related transcription factor 1
F02	Mm.250422	NM_008871	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
F03	Mm.223717	NM_008539	Smad1	MAD homolog 1 (Drosophila)
F04	Mm.391091	NM_010754	Smad2	MAD homolog 2 (Drosophila)
F05	Mm.7320	NM_016769	Smad3	MAD homolog 3 (Drosophila)
F06	Mm.100399	NM_008540	Smad4	MAD homolog 4 (Drosophila)
F07	Mm.272920	NM_008541	Smad5	MAD homolog 5 (Drosophila)
F08	Mm.34407	NM_001042660	Smad7	MAD homolog 7 (Drosophila)
F09	Mm.27735	NM_029438	Smurf1	SMAD specific E3 ubiquitin protein ligase 1
F10	Mm.240627	NM_009238	Sox4	SRY-box containing gene 4
F11	Mm.277406	NM_009283	Stat1	Signal transducer and activator of transcription 1
F12	Mm.5090	NM_011562	Tdgf1	Teratocarcinoma-derived growth factor 1
G01	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G02	Mm.3248	NM_009365	Tgfb1i1	Transforming growth factor beta 1 induced transcript 1
G03	Mm.18213	NM_009367	Tgfb2	Transforming growth factor, beta 2
G04	Mm.3992	NM_009368	Tgfb3	Transforming growth factor, beta 3
G05	Mm.14455	NM_009369	Tgfb3i	Transforming growth factor, beta induced
G06	Mm.197552	NM_009370	Tgfb3r1	Transforming growth factor, beta receptor I
G07	Mm.172346	NM_009371	Tgfb3r2	Transforming growth factor, beta receptor II
G08	Mm.200775	NM_011578	Tgfb3r3	Transforming growth factor, beta receptor III
G09	Mm.246069	NM_001013025	Tgfbrap1	Transforming growth factor, beta receptor associated protein 1
G10	Mm.4159	NM_011580	Thbs1	Thrombospondin 1
G11	Mm.1062	NM_009425	Tnfrsf10	Tumor necrosis factor (ligand) superfamily, member 10
G12	Mm.153272	NM_009366	Tsc22d1	TSC22 domain family, member 1
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, RT<sup>2</sup> Profiler PCR Arrays should be used together with the RT<sup>2</sup> First Strand Kit for cDNA synthesis and RT<sup>2</sup> SYBR<sup>®</sup> Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT <sup>2</sup> First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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.

RT<sup>2</sup> 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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