

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

Mouse Osteogenesis

Cat. no. 330231 PAMM-026ZA

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 Osteogenesis RT² Profiler PCR Array profiles the expression of 84 genes related to osteogenic differentiation. This array contains genes functioning in the development of the skeletal system as well as bone mineral metabolism. Growth factors and genes mediating osteogenesis and related cell growth, proliferation, and differentiation processes are included. Also represented are the extracellular matrix molecules and cell adhesion molecules involved in bone development. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to osteogenic 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	<i>Acvr1</i>	<i>Ahsg</i>	<i>Alpl</i>	<i>Anxa5</i>	<i>Bglap</i>	<i>Bgn</i>	<i>Bmp1</i>	<i>Bmp2</i>	<i>Bmp3</i>	<i>Bmp4</i>	<i>Bmp5</i>	<i>Bmp6</i>
B	<i>Bmp7</i>	<i>Bmpr1a</i>	<i>Bmpr1b</i>	<i>Bmpr2</i>	<i>Cd36</i>	<i>Cdh11</i>	<i>Chrd</i>	<i>Col10a1</i>	<i>Col14a1</i>	<i>Col1a1</i>	<i>Col1a2</i>	<i>Col2a1</i>
C	<i>Col3a1</i>	<i>Col4a1</i>	<i>Col5a1</i>	<i>Comp</i>	<i>Csf1</i>	<i>Csf2</i>	<i>Csf3</i>	<i>Ctsk</i>	<i>Dlx5</i>	<i>Egf</i>	<i>Fgf1</i>	<i>Fgf2</i>
D	<i>Fgfr1</i>	<i>Fgfr2</i>	<i>Flt1</i>	<i>Fn1</i>	<i>Gdf10</i>	<i>Gli1</i>	<i>Icam1</i>	<i>Igf1</i>	<i>Igf1r</i>	<i>Ilhh</i>	<i>Itga2</i>	<i>Itga2b</i>
E	<i>Itga3</i>	<i>Itgam</i>	<i>Itgav</i>	<i>Itgb1</i>	<i>Mmp10</i>	<i>Mmp2</i>	<i>Mmp8</i>	<i>Mmp9</i>	<i>Nfkb1</i>	<i>Nog</i>	<i>Pdgfra</i>	<i>Phex</i>
F	<i>Ruvr2</i>	<i>Serpinh1</i>	<i>Smad1</i>	<i>Smad2</i>	<i>Smad3</i>	<i>Smad4</i>	<i>Smad5</i>	<i>Sost</i>	<i>Sox9</i>	<i>Sp7</i>	<i>Spp1</i>	<i>Tgfb1</i>
G	<i>Tgfb2</i>	<i>Tgfb3</i>	<i>Tgfb1r</i>	<i>Tgfb2r</i>	<i>Tgfb3r</i>	<i>Tnf</i>	<i>Tnfrsf11</i>	<i>Twist1</i>	<i>Vcam1</i>	<i>Vdr</i>	<i>Vegfa</i>	<i>Vegfb</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.689	NM_007394	<i>Acvr1</i>	Activin A receptor, type 1
A02	Mm.197554	NM_013465	<i>Ahsg</i>	Alpha-2-HS-glycoprotein
A03	Mm.288186	NM_007431	<i>Alpl</i>	Alkaline phosphatase, liver/bone/kidney
A04	Mm.1620	NM_009673	<i>Anxa5</i>	Annexin A5
A05	Mm.389459	NM_007541	<i>Bglap</i>	Bone gamma carboxyglutamate protein
A06	Mm.2608	NM_007542	<i>Bgn</i>	Biglycan
A07	Mm.27757	NM_009755	<i>Bmp1</i>	Bone morphogenetic protein 1
A08	Mm.103205	NM_007553	<i>Bmp2</i>	Bone morphogenetic protein 2
A09	Mm.209571	NM_173404	<i>Bmp3</i>	Bone morphogenetic protein 3
A10	Mm.6813	NM_007554	<i>Bmp4</i>	Bone morphogenetic protein 4
A11	Mm.428950	NM_007555	<i>Bmp5</i>	Bone morphogenetic protein 5
A12	Mm.385759	NM_007556	<i>Bmp6</i>	Bone morphogenetic protein 6
B01	Mm.595	NM_007557	<i>Bmp7</i>	Bone morphogenetic protein 7
B02	Mm.237825	NM_009758	<i>Bmpr1a</i>	Bone morphogenetic protein receptor, type 1A
B03	Mm.39089	NM_007560	<i>Bmpr1b</i>	Bone morphogenetic protein receptor, type 1B
B04	Mm.7106	NM_007561	<i>Bmpr2</i>	Bone morphogenic protein receptor, type II (serine/threonine kinase)
B05	Mm.18628	NM_007643	<i>Cd36</i>	CD36 antigen
B06	Mm.1571	NM_009866	<i>Cdh11</i>	Cadherin 11
B07	Mm.20457	NM_009893	<i>Chrd</i>	Chordin
B08	Mm.443177	NM_009925	<i>Col10a1</i>	Collagen, type X, alpha 1
B09	Mm.297859	NM_181277	<i>Col14a1</i>	Collagen, type XIV, alpha 1
B10	Mm.277735	NM_007742	<i>Col1a1</i>	Collagen, type I, alpha 1
B11	Mm.277792	NM_007743	<i>Col1a2</i>	Collagen, type I, alpha 2
B12	Mm.2423	NM_031163	<i>Col2a1</i>	Collagen, type II, alpha 1
C01	Mm.249555	NM_009930	<i>Col3a1</i>	Collagen, type III, alpha 1
C02	Mm.738	NM_009931	<i>Col4a1</i>	Collagen, type IV, alpha 1
C03	Mm.7281	NM_015734	<i>Col5a1</i>	Collagen, type V, alpha 1
C04	Mm.45071	NM_016685	<i>Comp</i>	Cartilage oligomeric matrix protein
C05	Mm.795	NM_007778	<i>Csf1</i>	Colony stimulating factor 1 (macrophage)
C06	Mm.4922	NM_009969	<i>Csf2</i>	Colony stimulating factor 2 (granulocyte-macrophage)
C07	Mm.1238	NM_009971	<i>Csf3</i>	Colony stimulating factor 3 (granulocyte)
C08	Mm.272085	NM_007802	<i>Ctsk</i>	Cathepsin K
C09	Mm.4873	NM_198854	<i>Dlx5</i>	Distal-less homeobox 5
C10	Mm.252481	NM_010113	<i>Egf</i>	Epidermal growth factor
C11	Mm.241282	NM_010197	<i>Fgf1</i>	Fibroblast growth factor 1
C12	Mm.473689	NM_008006	<i>Fgf2</i>	Fibroblast growth factor 2
D01	Mm.265716	NM_010206	<i>Fgfr1</i>	Fibroblast growth factor receptor 1
D02	Mm.16340	NM_010207	<i>Fgfr2</i>	Fibroblast growth factor receptor 2
D03	Mm.389712	NM_010228	<i>Flt1</i>	FMS-like tyrosine kinase 1
D04	Mm.193099	NM_010233	<i>Fn1</i>	Fibronectin 1
D05	Mm.432071	NM_145741	<i>Gdf10</i>	Growth differentiation factor 10
D06	Mm.391450	NM_010296	<i>Gli1</i>	GLI-Kruppel family member GLI1
D07	Mm.435508	NM_010493	<i>Icam1</i>	Intercellular adhesion molecule 1
D08	Mm.268521	NM_010512	<i>Igf1</i>	Insulin-like growth factor 1
D09	Mm.275742	NM_010513	<i>Igf1r</i>	Insulin-like growth factor I receptor

Position	UniGene	GenBank	Symbol	Description
D10	Mm.439736	NM_010544	lhh	Indian hedgehog
D11	Mm.5007	NM_008396	Itga2	Integrin alpha 2
D12	Mm.26646	NM_010575	Itga2b	Integrin alpha 2b
E01	Mm.57035	NM_013565	Itga3	Integrin alpha 3
E02	Mm.262106	NM_008401	Itgam	Integrin alpha M
E03	Mm.227	NM_008402	Itgav	Integrin alpha V
E04	Mm.263396	NM_010578	Itgb1	Integrin beta 1 (fibronectin receptor beta)
E05	Mm.14126	NM_019471	Mmp10	Matrix metalloproteinase 10
E06	Mm.29564	NM_008610	Mmp2	Matrix metalloproteinase 2
E07	Mm.16415	NM_008611	Mmp8	Matrix metalloproteinase 8
E08	Mm.4406	NM_013599	Mmp9	Matrix metalloproteinase 9
E09	Mm.256765	NM_008689	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1, p105
E10	Mm.135266	NM_008711	Nog	Noggin
E11	Mm.2675	NM_008808	Pdgfra	Platelet derived growth factor, alpha
E12	Mm.2529	NM_011077	Phex	Phosphate regulating gene with homologies to endopeptidases on the X chromosome (hypophosphatemia, vitamin D resistant rickets)
F01	Mm.391013	NM_009820	Runx2	Runt related transcription factor 2
F02	Mm.22708	NM_009825	Serpinh1	Serine (or cysteine) peptidase inhibitor, clade H, 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.265602	NM_024449	Sost	Sclerostin
F09	Mm.286407	NM_011448	Sox9	SRY-box containing gene 9
F10	Mm.263284	NM_130458	Sp7	Sp7 transcription factor 7
F11	Mm.288474	NM_009263	Spp1	Secreted phosphoprotein 1
F12	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G01	Mm.18213	NM_009367	Tgfb2	Transforming growth factor, beta 2
G02	Mm.3992	NM_009368	Tgfb3	Transforming growth factor, beta 3
G03	Mm.197552	NM_009370	Tgfb1	Transforming growth factor, beta receptor I
G04	Mm.172346	NM_009371	Tgfb2	Transforming growth factor, beta receptor II
G05	Mm.200775	NM_011578	Tgfb3	Transforming growth factor, beta receptor III
G06	Mm.1293	NM_013693	Tnf	Tumor necrosis factor
G07	Mm.249221	NM_011613	Tnfrsf11	Tumor necrosis factor (ligand) superfamily, member 11
G08	Mm.3280	NM_011658	Twist1	Twist homolog 1 (Drosophila)
G09	Mm.76649	NM_011693	Vcam1	Vascular cell adhesion molecule 1
G10	Mm.245084	NM_009504	Vdr	Vitamin D receptor
G11	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
G12	Mm.15607	NM_011697	Vegfb	Vascular endothelial growth factor B
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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