

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

Rat Osteogenesis

Cat. no. 330231 PARN-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™



Description

The Rat 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>Col6a1</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>
D	<i>Fgf2</i>	<i>Fgfr1</i>	<i>Fgfr2</i>	<i>Fh1</i>	<i>Fn1</i>	<i>Gdf10</i>	<i>Gli1</i>	<i>Icam1</i>	<i>Igf1</i>	<i>Igf1r</i>	<i>Ihh</i>	<i>Ilga2</i>
E	<i>Ilga3</i>	<i>Ilgam</i>	<i>Ilgav</i>	<i>Ilgb1</i>	<i>Mmp10</i>	<i>Mmp2</i>	<i>Mmp8</i>	<i>Mmp9</i>	<i>Nfk1</i>	<i>Nog</i>	<i>Pdgfra</i>	<i>Phex</i>
F	<i>Runx2</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>Tgfb1</i>	<i>Tgfb2</i>	<i>Tgfb3</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>Hprt1</i>	<i>Ldha</i>	<i>Rplp1</i>	<i>RGDC</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	Rn.87899	NM_024486	<i>Acvr1</i>	Activin A receptor, type I
A02	Rn.32083	NM_012898	<i>Ahsg</i>	Alpha-2-HS-glycoprotein
A03	Rn.82764	NM_013059	<i>Alpl</i>	Alkaline phosphatase, liver/bone/kidney
A04	Rn.3318	NM_013132	<i>Anxa5</i>	Annexin A5
A05	Rn.9722	NM_013414	<i>Bglap</i>	Bone gamma-carboxyglutamate (gla) protein
A06	Rn.783	NM_017087	<i>Bgn</i>	Biglycan
A07	Rn.9305	NM_031323	<i>Bmp1</i>	Bone morphogenetic protein 1
A08	Rn.90931	NM_017178	<i>Bmp2</i>	Bone morphogenetic protein 2
A09	Rn.208979	NM_017105	<i>Bmp3</i>	Bone morphogenetic protein 3
A10	Rn.10318	NM_012827	<i>Bmp4</i>	Bone morphogenetic protein 4
A11	Rn.135799	NM_001108168	<i>Bmp5</i>	Bone morphogenetic protein 5
A12	Rn.40476	NM_013107	<i>Bmp6</i>	Bone morphogenetic protein 6
B01	Rn.18030	XM_342591	<i>Bmp7</i>	Bone morphogenetic protein 7
B02	Rn.88925	NM_030849	<i>Bmpr1a</i>	Bone morphogenetic protein receptor, type IA
B03	Rn.215592	NM_001024259	<i>Bmpr1b</i>	Bone morphogenetic protein receptor, type IB
B04	Rn.59276	NM_080407	<i>Bmpr2</i>	Bone morphogenetic protein receptor, type II (serine/threonine kinase)
B05	Rn.102418	NM_031561	<i>Cd36</i>	CD36 molecule (thrombospondin receptor)
B06	Rn.8900	NM_053392	<i>Cdh11</i>	Cadherin 11
B07	Rn.29459	NM_057134	<i>Chrd</i>	Chordin
B08	Rn.217522	XM_001053056	<i>Col10a1</i>	Collagen, type X, alpha 1
B09	Rn.99441	NM_001130548	<i>Col14a1</i>	Collagen, type XIV, alpha 1
B10	Rn.2953	NM_053304	<i>Col1a1</i>	Collagen, type I, alpha 1
B11	Rn.107239	NM_053356	<i>Col1a2</i>	Collagen, type I, alpha 2
B12	Rn.10124	NM_012929	<i>Col2a1</i>	Collagen, type II, alpha 1
C01	Rn.3247	NM_032085	<i>Col3a1</i>	Collagen, type III, alpha 1
C02	Rn.53801	NM_001135009	<i>Col4a1</i>	Collagen, type IV, alpha 1
C03	Rn.117	NM_134452	<i>Col5a1</i>	Collagen, type V, alpha 1
C04	Rn.107165	XM_215375	<i>Col6a1</i>	Collagen, type VI, alpha 1
C05	Rn.10343	NM_012834	<i>Comp</i>	Cartilage oligomeric matrix protein
C06	Rn.83632	NM_023981	<i>Csf1</i>	Colony stimulating factor 1 (macrophage)
C07	Rn.44285	XM_340799	<i>Csf2</i>	Colony stimulating factor 2 (granulocyte-macrophage)
C08	Rn.53973	NM_017104	<i>Csf3</i>	Colony stimulating factor 3 (granulocyte)
C09	Rn.5598	NM_031560	<i>Ctsk</i>	Cathepsin K
C10	Rn.11248	NM_012943	<i>Dlx5</i>	Distal-less homeobox 5
C11	Rn.6075	NM_012842	<i>Egf</i>	Epidermal growth factor
C12	Rn.88013	NM_012846	<i>Fgf1</i>	Fibroblast growth factor 1
D01	Rn.31808	NM_019305	<i>Fgf2</i>	Fibroblast growth factor 2
D02	Rn.9797	NM_024146	<i>Fgfr1</i>	Fibroblast growth factor receptor 1
D03	Rn.12732	NM_001109892	<i>Fgfr2</i>	Fibroblast growth factor receptor 2
D04	Rn.10239	NM_019306	<i>Fh1</i>	Fms-related tyrosine kinase 1
D05	Rn.1604	NM_019143	<i>Fn1</i>	Fibronectin 1
D06	Rn.8707	NM_024375	<i>Gdf10</i>	Growth differentiation factor 10
D07	Rn.219157	XM_345832	<i>Gli1</i>	GLI family zinc finger 1
D08	Rn.12	NM_012967	<i>Icam1</i>	Intercellular adhesion molecule 1
D09	Rn.6282	NM_178866	<i>Igf1</i>	Insulin-like growth factor 1

Position	UniGene	GenBank	Symbol	Description
D10	Rn.10957	NM_052807	Igf1r	Insulin-like growth factor 1 receptor
D11	Rn.8711	NM_053384	Ihh	Indian hedgehog
D12	Rn.83597	XM_345156	Itga2	Integrin, alpha 2
E01	Rn.154664	NM_001108292	Itga3	Integrin, alpha 3
E02	Rn.54465	NM_012711	Itgam	Integrin, alpha M
E03	Rn.23339	NM_001106549	Itgav	Integrin, alpha V
E04	Rn.25733	NM_017022	Itgb1	Integrin, beta 1
E05	Rn.9946	NM_133514	Mmp10	Matrix metalloproteinase 10
E06	Rn.6422	NM_031054	Mmp2	Matrix metalloproteinase 2
E07	Rn.44474	NM_022221	Mmp8	Matrix metalloproteinase 8
E08	Rn.10209	NM_031055	Mmp9	Matrix metalloproteinase 9
E09	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E10	Rn.10154	NM_012990	Nog	Noggin
E11	Rn.10999	NM_012801	Pdgfra	Platelet-derived growth factor alpha polypeptide
E12	Rn.37861	NM_013004	Phex	Phosphate regulating endopeptidase homolog, X-linked
F01	Rn.214214	NM_053470	Runx2	Runt-related transcription factor 2
F02	Rn.98199	NM_017173	Serpinh1	Serine (or cysteine) peptidase inhibitor, clade H, member 1
F03	Rn.10635	NM_013130	Smad1	SMAD family member 1
F04	Rn.2755	NM_019191	Smad2	SMAD family member 2
F05	Rn.10636	NM_013095	Smad3	SMAD family member 3
F06	Rn.9774	NM_019275	Smad4	SMAD family member 4
F07	Rn.146857	NM_021692	Smad5	SMAD family member 5
F08	Rn.95369	NM_030584	Sost	Sclerostosis
F09	Rn.95086	XM_343981	Sox9	SRY-box containing gene 9
F10	Rn.92200	NM_181374	Sp7	Sp7 transcription factor
F11	Rn.8871	NM_012881	Spp1	Secreted phosphoprotein 1
F12	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G01	Rn.24539	NM_031131	Tgfb2	Transforming growth factor, beta 2
G02	Rn.7018	NM_013174	Tgfb3	Transforming growth factor, beta 3
G03	Rn.44402	NM_012775	Tgfb1	Transforming growth factor, beta receptor 1
G04	Rn.9954	NM_031132	Tgfb2	Transforming growth factor, beta receptor II
G05	Rn.9953	NM_017256	Tgfb3	Transforming growth factor, beta receptor III
G06	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G07	Rn.64517	NM_057149	Tnfsf11	Tumor necrosis factor (ligand) superfamily, member 11
G08	Rn.161904	NM_053530	Twist1	Twist homolog 1 (Drosophila)
G09	Rn.11267	NM_012889	Vcam1	Vascular cell adhesion molecule 1
G10	Rn.10911	NM_017058	Vdr	Vitamin D (1,25-dihydroxyvitamin D3) receptor
G11	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G12	Rn.198550	NM_053549	Vegfb	Vascular endothelial growth factor B
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2-microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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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