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

Rat Adipogenesis

Cat. no. 330231 PARN-049ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² 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
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Rat Adipogenesis RT² Profiler PCR Array profiles the expression of 84 key genes involved in the differentiation and maintenance of mature adipocytes. Preadipocytes differentiate into mature adipocytes and generally form adipose tissue in response to a positive energy balance. Adipose tissue not only stores energy, but is also a dynamic endocrine organ, important for hormone and cytokine (adipokine) secretion. White adipose tissue (WAT), located in abdominal and subcutaneous deposits in mammals, performs the majority of energy storage and adipokine secretion. Brown adipose tissue (BAT) mediates non-shivering thermogenesis, well-known to protect infants from cold exposure. Recent studies have also discovered significant BAT deposits in adults, which may play an important role in obesity and energy balance, leading to potential therapeutic options for metabolic syndrome and diabetes. The differentiation and maintenance of these two types of adipose tissue is interrelated, involving multiple signaling pathways and transcription factors whose expression varies over time. This array includes the major genes implicated in WAT and BAT adipogenesis, such as hormones, adipokines, enzymes, transcription factors (particularly PPAR gamma and the C/EBP family) and signal transduction ligands, essential for studying the complex interactions between WAT and BAT. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in adipogenesis 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	Acacb	Adipoq	Adrb2	Agt	Angpt2	Axin1	Bmp2	Bmp4	Bmp7	Ccnd1	Cdk4	Cdkn1a
B	Cdkn1b	Cebpa	Cebpb	Cebpd	Cfd	Creb1	Ddit3	Dio2	Dkk1	Dlk1	E2f1	Egr2
C	Fabp4	Fasn	Fgf1	Fgf10	Fgf2	Fos	Foxc2	Gata2	Gata3	Hes1	Insr	Irs1
D	Irs2	Jun	Klf15	Klf2	Klf3	Klf4	Lep	Lipe	Lmna	Lpl	Lrp5	Mapk14
E	Ncoa2	Ncor1	Ncor2	Nr0b2	Nr1h3	Nrf1	Ppara	Ppard	Pparg	Ppargc1a	Ppargc1b	Rb1
F	Retn	Runx1t1	Rxra	Sfrp1	Sfrp5	Shh	Sirt1	Sirt2	Sirt3	Slc2a4	Src	Srebf1
G	Stat5a	Taz	Tcf7l2	Tsc22d3	Twist1	Ucp1	Vdr	Wnt1	Wnt10b	Wnt3a	Wnt5a	Wnt5b
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.162151	NM_053922	Acacb	Acetyl-Coenzyme A carboxylase beta
A02	Rn.24299	NM_144744	Adipoq	Adiponectin, C1Q and collagen domain containing
A03	Rn.10206	NM_012492	Adrb2	Adrenergic, beta-2-, receptor, surface
A04	Rn.6319	NM_134432	Agt	Angiotensinogen (serpin peptidase inhibitor, clade A, member 8)
A05	Rn.138360	NM_134454	Angpt2	Angiopoietin 2
A06	Rn.31781	NM_024405	Axin1	Axin 1
A07	Rn.90931	NM_017178	Bmp2	Bone morphogenetic protein 2
A08	Rn.10318	NM_012827	Bmp4	Bone morphogenetic protein 4
A09	Rn.18030	XM_342591	Bmp7	Bone morphogenetic protein 7
A10	Rn.22279	NM_171992	Ccnd1	Cyclin D1
A11	Rn.6115	NM_053593	Cdk4	Cyclin-dependent kinase 4
A12	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B01	Rn.29897	NM_031762	Cdkn1b	Cyclin-dependent kinase inhibitor 1B
B02	Rn.204833	NM_012524	Cebpa	CCAAT/enhancer binding protein (C/EBP), alpha
B03	Rn.6479	NM_024125	Cebpb	CCAAT/enhancer binding protein (C/EBP), beta
B04	Rn.202620	NM_013154	Cebpd	CCAAT/enhancer binding protein (C/EBP), delta
B05	Rn.16172	NM_001077642	Cfd	Complement factor D (adipsin)
B06	Rn.90061	NM_031017	Creb1	CAMP responsive element binding protein 1
B07	Rn.11183	NM_024134	Ddit3	DNA-damage inducible transcript 3
B08	Rn.88380	NM_031720	Dio2	Deiodinase, iodothyronine, type II
B09	Rn.214343	NM_001106350	Dkk1	Dickkopf homolog 1 (Xenopus laevis)
B10	Rn.14547	NM_053744	Dlk1	Delta-like 1 homolog (Drosophila)
B11	Rn.72471	NM_001100778	E2f1	E2F transcription factor 1
B12	Rn.89235	NM_053633	Egr2	Early growth response 2
C01	Rn.4258	NM_053365	Fabp4	Fatty acid binding protein 4, adipocyte
C02	Rn.9486	NM_017332	Fasn	Fatty acid synthase
C03	Rn.88013	NM_012846	Fgf1	Fibroblast growth factor 1
C04	Rn.44439	NM_012951	Fgf10	Fibroblast growth factor 10
C05	Rn.31808	NM_019305	Fgf2	Fibroblast growth factor 2
C06	Rn.103750	NM_022197	Fos	FBJ osteosarcoma oncogene
C07	Rn.216723	NM_001101680	Foxc2	Forkhead box C2
C08	Rn.34322	NM_033442	Gata2	GATA binding protein 2
C09	Rn.92350	NM_133293	Gata3	GATA binding protein 3
C10	Rn.19727	NM_024360	Hes1	Hairy and enhancer of split 1 (Drosophila)
C11	Rn.9876	NM_017071	Insr	Insulin receptor
C12	Rn.10476	NM_012969	Irs1	Insulin receptor substrate 1
D01	Rn.10718	NM_001168633	Irs2	Insulin receptor substrate 2
D02	Rn.93714	NM_021835	Jun	Jun oncogene
D03	Rn.22556	NM_053536	Klf15	Kruppel-like factor 15
D04	Rn.92653	NM_001007684	Klf2	Kruppel-like factor 2 (lung)
D05	Rn.218431	NM_001105742	Klf3	Kruppel-like factor 3 (basic)
D06	Rn.7719	NM_053713	Klf4	Kruppel-like factor 4 (gut)
D07	Rn.44444	NM_013076	Lep	Leptin
D08	Rn.10566	NM_012859	Lipe	Lipase, hormone sensitive
D09	Rn.44161	NM_001002016	Lmna	Lamin A

Position	UniGene	GenBank	Symbol	Description
D10	Rn.3834	NM_012598	Lpl	Lipoprotein lipase
D11	Rn.12698	NM_001106321	Lrp5	Low density lipoprotein receptor-related protein 5
D12	Rn.88085	NM_031020	Mapk14	Mitogen activated protein kinase 14
E01	Rn.49136	NM_031822	Ncoa2	Nuclear receptor coactivator 2
E02	Rn.24948	XM_001077495	Ncor1	Nuclear receptor co-repressor 1
E03	Rn.113362	NM_001108334	Ncor2	Nuclear receptor co-repressor 2
E04	Rn.10712	NM_057133	Nr0b2	Nuclear receptor subfamily 0, group B, member 2
E05	Rn.11209	NM_031627	Nr1h3	Nuclear receptor subfamily 1, group H, member 3
E06	Rn.17159	NM_001100708	Nrf1	Nuclear respiratory factor 1
E07	Rn.9753	NM_013196	Ppara	Peroxisome proliferator activated receptor alpha
E08	Rn.96181	NM_013141	Ppard	Peroxisome proliferator-activated receptor delta
E09	Rn.23443	NM_013124	Pparg	Peroxisome proliferator-activated receptor gamma
E10	Rn.19172	NM_031347	Ppargc1a	Peroxisome proliferator-activated receptor gamma, coactivator 1 alpha
E11	Rn.163382	NM_176075	Ppargc1b	Peroxisome proliferator-activated receptor gamma, coactivator 1 beta
E12	Rn.55115	NM_017045	Rb1	Retinoblastoma 1
F01	Rn.16746	NM_144741	Retn	Resistin
F02	Rn.218117	NM_001108657	Runx1t1	Runt-related transcription factor 1; translocated to, 1 (cyclin D-related)
F03	Rn.108206	NM_012805	Rxra	Retinoid X receptor alpha
F04	Rn.163333	XM_224987	Sfrp1	Secreted frizzled-related protein 1
F05	Rn.40184	NM_001107591	Sfrp5	Secreted frizzled-related protein 5
F06	Rn.10432	NM_017221	Shh	Sonic hedgehog
F07	Rn.219976	NM_001107627	Sirt1	Sirtuin (silent mating type information regulation 2 homolog) 1 (S. cerevisiae)
F08	Rn.59887	NM_001008368	Sirt2	Sirtuin (silent mating type information regulation 2 homolog) 2 (S. cerevisiae)
F09	Rn.24698	NM_001106313	Sirt3	Sirtuin (silent mating type information regulation 2 homolog) 3 (S. cerevisiae)
F10	Rn.1314	NM_012751	Slc2a4	Solute carrier family 2 (facilitated glucose transporter), member 4
F11	Rn.112600	NM_031977	Src	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
F12	Rn.221929	XM_213329	Srebf1	Sterol regulatory element binding transcription factor 1
G01	Rn.154399	NM_017064	Stat5a	Signal transducer and activator of transcription 5A
G02	Rn.7267	NM_001025748	Taz	Tafazzin
G03	Rn.105849	XM_001054844	Tcf7l2	Transcription factor 7-like 2 (T-cell specific, HMG-box)
G04	Rn.21970	NM_031345	Tsc22d3	TSC22 domain family, member 3
G05	Rn.161904	NM_053530	Twist1	Twist homolog 1 (Drosophila)
G06	Rn.10281	NM_012682	Ucp1	Uncoupling protein 1 (mitochondrial, proton carrier)
G07	Rn.10911	NM_017058	Vdr	Vitamin D (1,25- dihydroxyvitamin D3) receptor
G08	Rn.138108	NM_001105714	Wnt1	Wingless-type MMTV integration site family, member 1
G09	Rn.218544	NM_001108111	Wnt10b	Wingless-type MMTV integration site family, member 10B
G10	Rn.218621	XM_220546	Wnt3a	Wingless-type MMTV integration site family, member 3A
G11	Rn.48749	NM_022631	Wnt5a	Wingless-type MMTV integration site family, member 5A
G12	Rn.58724	NM_001100489	Wnt5b	Wingless-type MMTV integration site family, member 5B
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.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² 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
RT² 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
RT² 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.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

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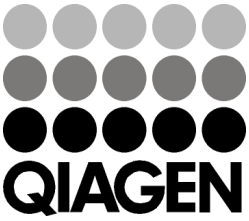

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