

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

Human Adipogenesis

Cat. no. 330231 PAHS-049ZA

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 Human 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	ADIG	ADIPOQ	ADRB2	AGT	ANGPT2	AXIN1	BMP2	BMP4	BMP7	CCND1	CDK4
B	CDKN1A	CDKN1B	CEBPA	CEBPB	CEBPD	CFD	CREB1	DDIT3	DIO2	DKK1	DLK1	E2F1
C	EGR2	FABP4	FASN	FGF1	FGF10	FGF2	FOXC2	FOXO1	GATA2	GATA3	HES1	INSR
D	IRS1	IRS2	JUN	KLF15	KLF2	KLF3	KLF4	LEP	LIPE	LMNA	LPL	LRP5
E	MAPK14	NCOA2	NCOR2	NR0B2	NR1H3	NRF1	PPARA	PPARD	PPARG	PPARGC1A	PPARGC1B	PRDM16
F	RB1	RETN	RUNX1T1	RXRA	SFRP1	SFRP5	SHH	SIRT1	SIRT2	SIRT3	SLC2A4	SRC
G	SREBF1	TAZ	TCF7L2	TSC22D3	TWIST1	UCP1	VDR	WNT1	WNT10B	WNT3A	WNT5A	WNT5B
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.234898	NM_001093	ACACB	Acetyl-CoA carboxylase beta
A02	Hs.368028	NM_001018082	ADIG	Adipogenin
A03	Hs.80485	NM_004797	ADIPOQ	Adiponectin, C1Q and collagen domain containing
A04	Hs.591251	NM_000024	ADRB2	Adrenergic, beta-2-, receptor, surface
A05	Hs.19383	NM_000029	AGT	Angiotensinogen (serpin peptidase inhibitor, clade A, member 8)
A06	Hs.583870	NM_001147	ANGPT2	Angiopoietin 2
A07	Hs.592082	NM_003502	AXIN1	Axin 1
A08	Hs.73853	NM_001200	BMP2	Bone morphogenetic protein 2
A09	Hs.68879	NM_130851	BMP4	Bone morphogenetic protein 4
A10	Hs.473163	NM_001719	BMP7	Bone morphogenetic protein 7
A11	Hs.523852	NM_053056	CCND1	Cyclin D1
A12	Hs.95577	NM_000075	CDK4	Cyclin-dependent kinase 4
B01	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B02	Hs.238990	NM_004064	CDKN1B	Cyclin-dependent kinase inhibitor 1B (p27, Kip1)
B03	Hs.699463	NM_004364	CEBPA	CCAAT/enhancer binding protein (C/EBP), alpha
B04	Hs.517106	NM_005194	CEBPB	CCAAT/enhancer binding protein (C/EBP), beta
B05	Hs.440829	NM_005195	CEBPD	CCAAT/enhancer binding protein (C/EBP), delta
B06	Hs.155597	NM_001928	CFD	Complement factor D (adipsin)
B07	Hs.516646	NM_004379	CREB1	CAMP responsive element binding protein 1
B08	Hs.728989	NM_004083	DDIT3	DNA-damage-inducible transcript 3
B09	Hs.202354	NM_000793	DIO2	Deiodinase, iodothyronine, type II
B10	Hs.40499	NM_012242	DKK1	Dickkopf homolog 1 (Xenopus laevis)
B11	Hs.533717	NM_003836	DLK1	Delta-like 1 homolog (Drosophila)
B12	Hs.654393	NM_005225	E2F1	E2F transcription factor 1
C01	Hs.1395	NM_000399	EGR2	Early growth response 2
C02	Hs.391561	NM_001442	FABP4	Fatty acid binding protein 4, adipocyte
C03	Hs.83190	NM_004104	FASN	Fatty acid synthase
C04	Hs.483635	NM_000800	FGF1	Fibroblast growth factor 1 (acidic)
C05	Hs.664499	NM_004465	FGF10	Fibroblast growth factor 10
C06	Hs.284244	NM_002006	FGF2	Fibroblast growth factor 2 (basic)
C07	Hs.436448	NM_005251	FOXC2	Forkhead box C2 (MFH-1, mesenchyme forkhead 1)
C08	Hs.370666	NM_002015	FOXO1	Forkhead box O1
C09	Hs.367725	NM_032638	GATA2	GATA binding protein 2
C10	Hs.524134	NM_002051	GATA3	GATA binding protein 3
C11	Hs.250666	NM_005524	HES1	Hairy and enhancer of split 1, (Drosophila)
C12	Hs.465744	NM_000208	INSR	Insulin receptor
D01	Hs.471508	NM_005544	IRS1	Insulin receptor substrate 1
D02	Hs.442344	NM_003749	IRS2	Insulin receptor substrate 2
D03	Hs.714791	NM_002228	JUN	Jun proto-oncogene
D04	Hs.272215	NM_014079	KLF15	Kruppel-like factor 15
D05	Hs.715677	NM_016270	KLF2	Kruppel-like factor 2 (lung)
D06	Hs.298658	NM_016531	KLF3	Kruppel-like factor 3 (basic)
D07	Hs.376206	NM_004235	KLF4	Kruppel-like factor 4 (gut)
D08	Hs.194236	NM_000230	LEP	Leptin
D09	Hs.656980	NM_005357	LIPE	Lipase, hormone-sensitive

Position	UniGene	GenBank	Symbol	Description
D10	Hs.594444	NM_005572	LMNA	Lamin A/C
D11	Hs.180878	NM_000237	LPL	Lipoprotein lipase
D12	Hs.6347	NM_002335	LRP5	Low density lipoprotein receptor-related protein 5
E01	Hs.485233	NM_001315	MAPK14	Mitogen-activated protein kinase 14
E02	Hs.446678	NM_006540	NCOA2	Nuclear receptor coactivator 2
E03	Hs.137510	NM_006312	NCOR2	Nuclear receptor corepressor 2
E04	Hs.427055	NM_021969	NR0B2	Nuclear receptor subfamily 0, group B, member 2
E05	Hs.438863	NM_005693	NR1H3	Nuclear receptor subfamily 1, group H, member 3
E06	Hs.654363	NM_005011	NRF1	Nuclear respiratory factor 1
E07	Hs.103110	NM_005036	PPARA	Peroxisome proliferator-activated receptor alpha
E08	Hs.696032	NM_006238	PPARD	Peroxisome proliferator-activated receptor delta
E09	Hs.162646	NM_015869	PPARG	Peroxisome proliferator-activated receptor gamma
E10	Hs.527078	NM_013261	PPARGC1A	Peroxisome proliferator-activated receptor gamma, coactivator 1 alpha
E11	Hs.591261	NM_133263	PPARGC1B	Peroxisome proliferator-activated receptor gamma, coactivator 1 beta
E12	Hs.99500	NM_199454	PRDM16	PR domain containing 16
F01	Hs.408528	NM_000321	RB1	Retinoblastoma 1
F02	Hs.283091	NM_020415	RETN	Resistin
F03	Hs.368431	NM_175636	RUNX1T1	Runt-related transcription factor 1; translocated to, 1 (cyclin D-related)
F04	Hs.590886	NM_002957	RXRA	Retinoid X receptor, alpha
F05	Hs.713546	NM_003012	SFRP1	Secreted frizzled-related protein 1
F06	Hs.279565	NM_003015	SFRP5	Secreted frizzled-related protein 5
F07	Hs.164537	NM_000193	SHH	Sonic hedgehog
F08	Hs.369779	NM_012238	SIRT1	Sirtuin 1
F09	Hs.466693	NM_012237	SIRT2	Sirtuin 2
F10	Hs.716456	NM_012239	SIRT3	Sirtuin 3
F11	Hs.380691	NM_001042	SLC2A4	Solute carrier family 2 (facilitated glucose transporter), member 4
F12	Hs.195659	NM_005417	SRC	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G01	Hs.592123	NM_004176	SREBF1	Sterol regulatory element binding transcription factor 1
G02	Hs.409911	NM_000116	TAZ	Tafazzin
G03	Hs.593995	NM_030756	TCF7L2	Transcription factor 7-like 2 (T-cell specific, HMG-box)
G04	Hs.716410	NM_004089	TSC22D3	TSC22 domain family, member 3
G05	Hs.66744	NM_000474	TWIST1	Twist homolog 1 (Drosophila)
G06	Hs.249211	NM_021833	UCP1	Uncoupling protein 1 (mitochondrial, proton carrier)
G07	Hs.524368	NM_000376	VDR	Vitamin D (1,25-dihydroxyvitamin D3) receptor
G08	Hs.248164	NM_005430	WNT1	Wingless-type MMTV integration site family, member 1
G09	Hs.91985	NM_003394	WNT10B	Wingless-type MMTV integration site family, member 10B
G10	Hs.336930	NM_033131	WNT3A	Wingless-type MMTV integration site family, member 3A
G11	Hs.696364	NM_003392	WNT5A	Wingless-type MMTV integration site family, member 5A
G12	Hs.306051	NM_032642	WNT5B	Wingless-type MMTV integration site family, member 5B
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human 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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