RT² Profiler PCR Array (Rotor-Gene® Format)

Human Adipogenesis

Cat. no. 330231 PAHS-049ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

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 the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

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

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc™ (plate A1–A12=Rotor-Disc 1–12, plate B1–B12=Rotor-Disc 13–24, etc.). To maintain data analysis compatibility, wells 97–100 do not contain real-time assays but will contain master mix to account for weight balance.

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
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

Position	UniGene	GenBank	Symbol	Description
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.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² SYBR Green ROX™ FAST Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the Rotor-Gene Q and other Rotor-Gene cyclers	330620

* 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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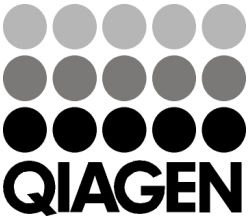

Sample & Assay Technologies