RT² Profiler PCR Array (Rotor-Gene® Format)

Mouse Fatty Acid Metabolism

Cat. no. 330231 PAMM-007ZR

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 Mouse Fatty Acid Metabolism RT² Profiler PCR Array profiles the expression of 84 key genes involved in the regulation and enzymatic pathways of fatty acid metabolism. Cells, particularly in skeletal muscle and adipose tissue, primarily store energy as triacylglycerols and, when needed, break them down again into glycerol and fatty acids for activation and transport into the mitochondria. The process of â-oxidation then metabolizes these activated fatty acids yielding acetyl-CoA, the initial metabolite necessary for the TCA cycle and ketogenesis. During resting states, cells store excess energy by re-synthesizing fatty acids in a process tightly regulated by hormones. Alterations in the expression of genes involved in fatty acid metabolism, such as CRAT, often associate with metabolic syndrome and insulin resistance. These two syndromes are risk factors for multiple diseases including diabetes and obesity as well as other prevalent health problems such as cardiovascular disease. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in fatty acid metabolism 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	Mm.205266	NM_130864	Acaa1a	Acetyl-Coenzyme A acyltransferase 1A
A02	Mm.245724	NM_177470	Acaa2	Acetyl-Coenzyme A acyltransferase 2 (mitochondrial 3-oxoacyl-Coenzyme A thiolase)
A03	Mm.45423	NM_028037	Acad10	Acyl-Coenzyme A dehydrogenase family, member 10
A04	Mm.41274	NM_175324	Acad11	Acyl-Coenzyme A dehydrogenase family, member 11
A05	Mm.260997	NM_172678	Acad9	Acyl-Coenzyme A dehydrogenase family, member 9
A06	Mm.2445	NM_007381	Acadl	Acyl-Coenzyme A dehydrogenase, long-chain
A07	Mm.10530	NM_007382	Acadm	Acyl-Coenzyme A dehydrogenase, medium chain
A08	Mm.18759	NM_007383	Acads	Acyl-Coenzyme A dehydrogenase, short chain
A09	Mm.334274	NM_025826	Acadsb	Acyl-Coenzyme A dehydrogenase, short/branched chain
A10	Mm.18630	NM_017366	Acadvl	Acyl-Coenzyme A dehydrogenase, very long chain
A11	Mm.293233	NM_144784	Acat1	Acetyl-Coenzyme A acetyltransferase 1
A12	Mm.439711	NM_009338	Acat2	Acetyl-Coenzyme A acetyltransferase 2
B01	Mm.275963	NM_028790	Acot12	Acyl-CoA thioesterase 12
B02	Mm.371675	NM_134188	Acot2	Acyl-CoA thioesterase 2
B03	Mm.202331	NM_134246	Acot3	Acyl-CoA thioesterase 3
B04	Mm.49245	NM_172580	Acot6	Acyl-CoA thioesterase 6
B05	Mm.296191	NM_133348	Acot7	Acyl-CoA thioesterase 7
B06	Mm.277878	NM_133240	Acot8	Acyl-CoA thioesterase 8
B07	Mm.268710	NM_019736	Acot9	Acyl-CoA thioesterase 9
B08	Mm.356689	NM_015729	Acox1	Acyl-Coenzyme A oxidase 1, palmitoyl
B09	Mm.28700	NM_053115	Acox2	Acyl-Coenzyme A oxidase 2, branched chain
B10	Mm.291503	NM_030721	Acox3	Acyl-Coenzyme A oxidase 3, pristanoyl
B11	Mm.20592	NM_053178	Acsbg1	Acyl-CoA synthetase bubblegum family member 1
B12	Mm.179421	NM_001039114	Acsbg2	Acyl-CoA synthetase bubblegum family member 2
C01	Mm.210323	NM_007981	Acsl1	Acyl-CoA synthetase long-chain family member 1
C02	Mm.427252	NM_001033606	Acsl3	Acyl-CoA synthetase long-chain family member 3
C03	Mm.391337	NM_019477	Acsl4	Acyl-CoA synthetase long-chain family member 4
C04	Mm.292056	NM_027976	Acsl5	Acyl-CoA synthetase long-chain family member 5
C05	Mm.267478	NM_144823	Acsl6	Acyl-CoA synthetase long-chain family member 6
C06	Mm.268448	NM_146197	Acsm2	Acyl-CoA synthetase medium-chain family member 2
C07	Mm.334199	NM_016870	Acsm3	Acyl-CoA synthetase medium-chain family member 3
C08	Mm.240412	NM_178414	Acsm4	Acyl-CoA synthetase medium-chain family member 4
C09	Mm.185183	NM_178758	Acsm5	Acyl-CoA synthetase medium-chain family member 5
C10	Mm.284446	NM_009656	Aldh2	Aldehyde dehydrogenase 2, mitochondrial
C11	Mm.293470	NM_175177	Bdh1	3-hydroxybutyrate dehydrogenase, type 1
C12	Mm.45121	NM_027208	Bdh2	3-hydroxybutyrate dehydrogenase, type 2
D01	Mm.18522	NM_013495	Cpt1a	Carnitine palmitoyltransferase 1a, liver
D02	Mm.227738	NM_009948	Cpt1b	Carnitine palmitoyltransferase 1b, muscle
D03	Mm.231465	NM_153679	Cpt1c	Carnitine palmitoyltransferase 1c
D04	Mm.307620	NM_009949	Cpt2	Carnitine palmitoyltransferase 2
D05	Mm.20396	NM_007760	Crat	Carnitine acetyltransferase
D06	Mm.28197	NM_023733	Crot	Carnitine O-octanoyltransferase
D07	Mm.393293	NM_026172	Decr1	2,4-dienoyl CoA reductase 1, mitochondrial
D08	Mm.292869	NM_011933	Decr2	2-4-dienoyl-Coenzyme A reductase 2, peroxisomal
D09	Mm.24452	NM_053119	Echs1	Enoyl Coenzyme A hydratase, short chain, 1, mitochondrial
D10	Mm.28883	NM_011868	Eci2	Enoyl-Coenzyme A delta isomerase 2
D11	Mm.28100	NM_023737	Ehhadh	Enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
D12	Mm.22126	NM_017399	Fabp1	Fatty acid binding protein 1, liver
E01	Mm.28398	NM_007980	Fabp2	Fatty acid binding protein 2, intestinal
E02	Mm.388886	NM_010174	Fabp3	Fatty acid binding protein 3, muscle and heart
E03	Mm.582	NM_024406	Fabp4	Fatty acid binding protein 4, adipocyte
E04	Mm.741	NM_010634	Fabp5	Fatty acid binding protein 5, epidermal
E05	Mm.142716	NM_008375	Fabp6	Fatty acid binding protein 6, ileal (gastrotropin)
E06	Mm.2475	NM_008097	Gcdh	Glutaryl-Coenzyme A dehydrogenase
E07	Mm.61206	NM_010294	Gk2	Glycerol kinase 2
E08	Mm.252391	NM_010271	Gpd1	Glycerol-3-phosphate dehydrogenase 1 (soluble)

Position	UniGene	GenBank	Symbol	Description
E09	Mm.3711	NM_010274	Gpd2	Glycerol phosphate dehydrogenase 2, mitochondrial
E10	Mm.246682	NM_008194	Gyk	Glycerol kinase
E11	Mm.200497	NM_178878	Hadha	Hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydratase (trifunctional protein), alpha subunit
E12	Mm.482102	NM_008254	Hmgcl	3-hydroxy-3-methylglutaryl-Coenzyme A lyase
F01	Mm.61526	NM_145942	Hmgcs1	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1
F02	Mm.289131	NM_008256	Hmgcs2	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2
F03	Mm.333679	NM_010719	Lipe	Lipase, hormone sensitive
F04	Mm.1514	NM_008509	Lpl	Lipoprotein lipase
F05	Mm.10093	NM_028626	Mcee	Methylmalonyl CoA epimerase
F06	Mm.259884	NM_008650	Mut	Methylmalonyl-Coenzyme A mutase
F07	Mm.270287	NM_022033	Oxct2a	3-oxoacid CoA transferase 2A
F08	Mm.281738	NM_023523	Pecr	Peroxisomal trans-2-enoyl-CoA reductase
F09	Mm.28897	NM_026438	Ppa1	Pyrophosphatase (inorganic) 1
F10	Mm.207004	NM_001013367	Prkaa1	Protein kinase, AMP-activated, alpha 1 catalytic subunit
F11	Mm.48638	NM_178143	Prkaa2	Protein kinase, AMP-activated, alpha 2 catalytic subunit
F12	Mm.458152	NM_031869	Prkab1	Protein kinase, AMP-activated, beta 1 non-catalytic subunit
G01	Mm.31175	NM_182997	Prkab2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
G02	Mm.19111	NM_008854	Prkaca	Protein kinase, cAMP dependent, catalytic, alpha
G03	Mm.16766	NM_011100	Prkacb	Protein kinase, cAMP dependent, catalytic, beta
G04	Mm.6670	NM_016781	Prkag1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
G05	Mm.33649	NM_145401	Prkag2	Protein kinase, AMP-activated, gamma 2 non-catalytic subunit
G06	Mm.166501	NM_153744	Prkag3	Protein kinase, AMP-activated, gamma 3 non-catatlytic subunit
G07	Mm.38165	NM_011977	Slc27a1	Solute carrier family 27 (fatty acid transporter), member 1
G08	Mm.290044	NM_011978	Slc27a2	Solute carrier family 27 (fatty acid transporter), member 2
G09	Mm.45519	NM_011988	Slc27a3	Solute carrier family 27 (fatty acid transporter), member 3
G10	Mm.330113	NM_011989	Slc27a4	Solute carrier family 27 (fatty acid transporter), member 4
G11	Mm.10984	NM_009512	Slc27a5	Solute carrier family 27 (fatty acid transporter), member 5
G12	Mm.258517	NM_001081072	Slc27a6	Solute carrier family 27 (fatty acid transporter), member 6
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.
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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