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

Chicken Fatty Acid Metabolism

Cat. no. 330231 PAGG-007ZA

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 Chicken 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 β-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. A set of controls present on each array enables data analysis using the ΔΔCT method of relative quantification, assessment of reverse transcription performance, genomic DNA contamination, and PCR performance. 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 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	ACAA1	ACAA2	ACACA	ACAD10	ACAD11	ACAD8	ACAD9	ACADL	ACADS	ACADSB	ACAT1	ACAT2
B	ACOT12	ACOT7	ACOT8	ACOT9	ACOX1	ACOX2	ACOX3	ACSBG1	ACSBG2	ACSL1	ACSL3	ACSL4
C	ACSL5	ACSL6	ACSM3	ACSM4	ACSM5	ADH6	ALDH2	BDH1	BDH2	CPT1A	CPT2	CRAT
D	CROT	DECR1	ECHS1	ECI2	EHHADH	ELOVL3	ELOVL4	FABP1	FABP2	FABP3	FABP4	FABP5
E	FABP6	FABP7	FADS1	FADS2	FASN	GK	GK5	GPD1	GPD2	HADHA	HMGCL	HMGCS1
F	HMGCS2	LOC423222	LOC771098	LPL	MCAT	MCEE	ME1	MUT	OLAH	OXSM	PECR	PPA1
G	PRKAA1	PRKAA2	PRKAB1	PRKAB2	PRKACB	PRKAG1	PRKAG2	PRKAG3	SLC27A1	SLC27A2	SLC27A4	SLC27A6
H	ACTB	H6PD	HMBS	RPL4	UBC	GGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Gga.7576	NM_001197288	ACAA1	Acetyl-Coenzyme A acyltransferase 1 (peroxisomal 3-oxoacyl-Coenzyme A thiolase)
A02	Gga.4465	NM_001006571	ACAA2	Acetyl-Coenzyme A acyltransferase 2 (mitochondrial 3-oxoacyl-Coenzyme A thiolase)
A03	Gga.1480	NM_205505	ACACA	Acetyl-Coenzyme A carboxylase alpha
A04	Gga.27747	XM_415170	ACAD10	Acyl-Coenzyme A dehydrogenase family, member 10
A05	Gga.8980	NM_001006367	ACAD11	Acyl-CoA dehydrogenase family, member 11
A06	Gga.16393	XM_417879	ACAD8	Acyl-Coenzyme A dehydrogenase family, member 8
A07	Gga.22451	NM_001006136	ACAD9	Acyl-Coenzyme A dehydrogenase family, member 9
A08	Gga.6159	NM_001006511	ACADL	Acyl-Coenzyme A dehydrogenase, long chain
A09	Gga.16136	NM_001006193	ACADS	Acyl-Coenzyme A dehydrogenase, C-2 to C-3 short chain
A10	Gga.19133	NM_001031240	ACADSB	Acyl-CoA dehydrogenase, short/branched chain
A11	Gga.3173	XM_417162	ACAT1	Acetyl-Coenzyme A acetyltransferase 1 (acetoacetyl Coenzyme A thiolase)
A12	Gga.20086	NM_001039287	ACAT2	Acetyl-Coenzyme A acetyltransferase 2 (acetoacetyl Coenzyme A thiolase)
B01	N/A	XM_429179	ACOT12	Acyl-CoA thioesterase 12
B02	Gga.5995	XM_417533	ACOT7	Acyl-CoA thioesterase 7
B03	Gga.4688	XM_001234145	ACOT8	Acyl-CoA thioesterase 8
B04	Gga.17540	NM_001012823	ACOT9	Acyl-CoA thioesterase 9
B05	Gga.39153	NM_001006205	ACOX1	Acyl-CoA oxidase 1, palmitoyl
B06	Gga.29984	XM_414406	ACOX2	Acyl-Coenzyme A oxidase 2, branched chain
B07	Gga.31056	XM_420814	ACOX3	Acyl-Coenzyme A oxidase 3, pristanoyl
B08	Gga.12240	XM_413747	ACSBG1	Acyl-CoA synthetase bubblegum family member 1
B09	Gga.22498	NM_001012846	ACSBG2	Acyl-CoA synthetase bubblegum family member 2
B10	Gga.18942	NM_001012578	ACSL1	Acyl-CoA synthetase long-chain family member 1
B11	Gga.31297	XM_422625	ACSL3	Acyl-CoA synthetase long-chain family member 3
B12	Gga.42258	XM_420317	ACSL4	Acyl-CoA synthetase long-chain family member 4
C01	Gga.7847	NM_001031237	ACSL5	Acyl-CoA synthetase long-chain family member 5
C02	N/A	XM_414640	ACSL6	Acyl-CoA synthetase long-chain family member 6
C03	Gga.7804	XM_424601	ACSM3	Acyl-CoA synthetase medium-chain family member 3
C04	Gga.40096	XM_424595	ACSM4	Acyl-CoA synthetase medium-chain family member 4
C05	Gga.13676	XM_424596	ACSM5	Acyl-CoA synthetase medium-chain family member 5
C06	Gga.3415	NM_205092	ADH6	Alcohol dehydrogenase 6 (class V)
C07	Gga.8366	XM_415171	ALDH2	Aldehyde dehydrogenase 2 family (mitochondrial)
C08	Gga.5444	NM_001006547	BDH1	3-hydroxybutyrate dehydrogenase, type 1
C09	Gga.2925	XM_420669	BDH2	3-hydroxybutyrate dehydrogenase, type 2
C10	Gga.9299	NM_001012898	CPT1A	Carnitine palmitoyltransferase 1A (liver)
C11	Gga.22581	XM_001234342	CPT2	Carnitine palmitoyltransferase II
C12	Gga.23989	XM_415478	CRAT	Carnitine acetyltransferase
D01	Gga.9995	XM_418635	CROT	Carnitine O-octanoyltransferase
D02	Gga.9634	XM_418328	DECR1	2,4-dienoyl CoA reductase 1, mitochondrial
D03	Gga.7253	XM_001234151	ECHS1	Enoyl CoA hydratase, short chain, 1, mitochondrial
D04	Gga.11390	XM_001231828	ECI2	Enoyl-CoA delta isomerase 2
D05	Gga.7542	XM_422690	EHHADH	Enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
D06	N/A	XM_001234270	ELOVL3	Elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)-like 3
D07	Gga.10344	NM_001197309	ELOVL4	Elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)-like 4

Position	UniGene	GenBank	Symbol	Description
D08	Gga.3688	NM_204192	FABP1	Fatty acid binding protein 1, liver
D09	Gga.6516	NM_001007923	FABP2	Fatty acid binding protein 2, intestinal
D10	Gga.12266	NM_001030889	FABP3	Fatty acid binding protein 3, muscle and heart (mammary-derived growth inhibitor)
D11	Gga.4939	NM_204290	FABP4	Fatty acid binding protein 4, adipocyte
D12	Gga.3323	NM_001006346	FABP5	Fatty acid binding protein 5
E01	Gga.8972	XM_414486	FABP6	Fatty acid binding protein 6, ileal (gastrotropin)
E02	Gga.4318	NM_205308	FABP7	Fatty acid binding protein 7, brain
E03	Gga.13371	XM_421052	FADS1	Fatty acid desaturase 1
E04	Gga.47702	NM_001160428	FADS2	Fatty acid desaturase 2
E05	Gga.33829	NM_205155	FASN	Fatty acid synthase
E06	Gga.11825	XM_416788	GK	Glycerol kinase
E07	Gga.22519	NM_001031306	GK5	Glycerol kinase 5 (putative)
E08	Gga.34629	XM_422110	GPD1	Glycerol-3-phosphate dehydrogenase 1 (soluble)
E09	Gga.11036	XM_422168	GPD2	Glycerol-3-phosphate dehydrogenase 2 (mitochondrial)
E10	Gga.8616	NM_205056	HADHA	Hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydratase (trifunctional protein), alpha subunit
E11	Gga.2537	NM_001198714	HMGCL	3-hydroxymethyl-3-methylglutaryl-Coenzyme A lyase
E12	Gga.42190	NM_205411	HMGCS1	3-hydroxy-3-methylglutaryl-CoA synthase 1 (soluble)
F01	Gga.2523	XM_422225	HMGCS2	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial)
F02	Gga.27752	XM_421146	LOC423222	Similar to Peroxisomal acyl-coenzyme A thioester hydrolase 2a (Peroxisomal long-chain acyl-coA thioesterase 2) (ZAP128)
F03	Gga.43079	XM_001231725	LOC771098	Similar to glutaryl-Coenzyme A dehydrogenase
F04	Gga.1152	NM_205282	LPL	Lipoprotein lipase
F05	Gga.7347	XM_425506	MCAT	Malonyl CoA:ACP acyltransferase (mitochondrial)
F06	Gga.6114	XM_413770	MCEE	Methylmalonyl CoA epimerase
F07	Gga.1132	NM_204303	ME1	Malic enzyme 1, NADP(+)-dependent, cytosolic
F08	Gga.33981	XM_420055	MUT	Methylmalonyl Coenzyme A mutase
F09	Gga.10281	XM_418634	OLAH	Oleoyl-ACP hydrolase
F10	Gga.35811	XM_418755	OXSM	3-oxoacyl-ACP synthase, mitochondrial
F11	Gga.22449	NM_001006522	PECR	Peroxisomal trans-2-enoyl-CoA reductase
F12	Gga.4740	XM_001232699	PPA1	Pyrophosphatase (inorganic) 1
G01	Gga.33723	NM_001039603	PRKAA1	Protein kinase, AMP-activated, alpha 1 catalytic subunit
G02	Gga.33715	NM_001039605	PRKAA2	Protein kinase, AMP-activated, alpha 2 catalytic subunit
G03	Gga.7310	NM_001039912	PRKAB1	Protein kinase, AMP-activated, beta 1 non-catalytic subunit
G04	Gga.8821	NM_001044662	PRKAB2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
G05	Gga.18003	XM_422379	PRKACB	Protein kinase, cAMP-dependent, catalytic, beta
G06	Gga.29061	NM_001034827	PRKAG1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
G07	Gga.4517	NM_001030965	PRKAG2	Protein kinase, AMP-activated, gamma 2 non-catalytic subunit
G08	Gga.22949	NM_001031258	PRKAG3	Protein kinase, AMP-activated, gamma 3 non-catalytic subunit
G09	Gga.33727	NM_001039602	SLC27A1	Solute carrier family 27 (fatty acid transporter), member 1
G10	Gga.45125	XM_424010	SLC27A2	Solute carrier family 27 (fatty acid transporter), member 2
G11	Gga.8457	XM_415504	SLC27A4	Solute carrier family 27 (fatty acid transporter), member 4
G12	N/A	XM_001233247	SLC27A6	Solute carrier family 27 (fatty acid transporter), member 6
H01	Gga.6076	NM_205518	ACTB	Actin, beta
H02	Gga.44427	XM_425746	H6PD	Hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)
H03	Gga.8480	XM_417846	HMBS	Hydroxymethylbilane synthase
H04	Gga.4523	NM_001007479	RPL4	Ribosomal protein L4
H05	Gga.39142	XM_001234599	UBC	Ubiquitin C
H06	N/A	SA_00517	GGDC	Chicken 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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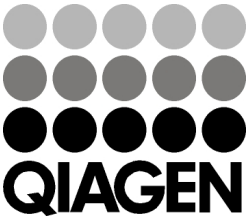

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