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

Mouse Amino Acid Metabolism I

Cat. no. 330231 PAMM-129ZA

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 Mouse Amino Acid Metabolism I RT² Profiler PCR Array profiles the expression of 84 key genes important in biosynthesis and degradation of functional amino acids. Of the 20 amino acids required for protein synthesis, six of them (arginine, cysteine, glutamine, leucine, proline, and tryptophan), collectively known as the functional amino acids, regulate key metabolic pathways involved in cellular growth, and development, as well as other important biological processes such as immunity and reproduction. For example, leucine activates mTOR signaling and increases protein synthesis, leading to lymphocyte proliferation. Therefore, a lack of leucine can compromise immune function. Metabolic pathways interrelated with the biosynthesis and degradation of these amino acids include vitamin and cofactor biosynthesis (such as SAM or S-Adenosyl Methionine) as well as neurotransmitter metabolism (such as glutamate). This array includes genes for mammalian functional amino acid metabolism as well as genes involved in methionine metabolism, important also for nutrient sensing and sulfur metabolism. Using realtime PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in functional amino 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	Aadat	Aanat	Abp1	Acadm	Acat1	Acmsd	Acy1	Adi1	Agmat	Ahcy	Aldh18a1	Aldh4a1
B	Aldh9a1	Amd1	Aox1	Apip	Arg2	Asl	Ass1	Auh	Bcat2	Bckdha	Bhmt	Cad
C	Cat	Cbs	Cdo1	Ckb	Cps1	Cth	Cyp1b1	Dao	Dbt	Ddc	Dld	Dnmt1
D	Ehhadh	Enoph1	Gamt	Gatm	Gcdh	Gfpt1	Gls	Glud1	Got2	Haao	Hmgcl	Hmgcs1
E	Ido1	Inmt	Ivd	Kmo	Kynu	Lap3	Lars	Ldha	Maob	Mat1a	Mccc2	Mpst
F	Mtap	Mtr	Nags	Nit2	Nos2	Oat	Odc1	Ogdhl	Otc	Oxct2a	P4ha1	Pdhb
G	Ppat	Prodh	Prodh2	Pycr1	Pycrl	Sat1	Sds	Srm	Tat	Tdo2	Tph2	Wars
H	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.35020	NM_011834	Aadat	Aminoadipate aminotransferase
A02	Mm.42233	NM_009591	Aanat	Arylalkylamine N-acetyltransferase
A03	Mm.213898	NM_029638	Abp1	Amiloride binding protein 1 (amine oxidase, copper-containing)
A04	Mm.10530	NM_007382	Acadm	Acyl-Coenzyme A dehydrogenase, medium chain
A05	Mm.293233	NM_144784	Acat1	Acetyl-Coenzyme A acetyltransferase 1
A06	Mm.25735	NM_001033041	Acmsd	Amino carboxymuconate semialdehyde decarboxylase
A07	Mm.7165	NM_025371	Acy1	Aminoacylase 1
A08	Mm.291504	NM_134052	Adi1	Acireductone dioxygenase 1
A09	Mm.30032	NM_001081408	Agmat	Agmatine ureohydrolase (agmatinase)
A10	Mm.330692	NM_016661	Ahcy	S-adenosylhomocysteine hydrolase
A11	Mm.233117	NM_019698	Aldh18a1	Aldehyde dehydrogenase 18 family, member A1
A12	Mm.273571	NM_175438	Aldh4a1	Aldehyde dehydrogenase 4 family, member A1
B01	Mm.330055	NM_019993	Aldh9a1	Aldehyde dehydrogenase 9, subfamily A1
B02	Mm.253533	NM_009665	Amd1	S-adenosylmethionine decarboxylase 1
B03	Mm.26787	NM_009676	Aox1	Aldehyde oxidase 1
B04	Mm.24772	NM_019735	Apip	APAF1 interacting protein
B05	Mm.3506	NM_009705	Arg2	Arginase type II
B06	Mm.23869	NM_133768	Asl	Argininosuccinate lyase
B07	Mm.3217	NM_007494	Ass1	Argininosuccinate synthetase 1
B08	Mm.252034	NM_016709	Auh	AU RNA binding protein/enoyl-coenzyme A hydratase
B09	Mm.24210	NM_009737	Bcat2	Branched chain aminotransferase 2, mitochondrial
B10	Mm.25848	NM_007533	Bckdha	Branched chain ketoacid dehydrogenase E1, alpha polypeptide
B11	Mm.329582	NM_016668	Bhmt	Betaine-homocysteine methyltransferase
B12	Mm.305535	NM_023525	Cad	Carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase
C01	Mm.4215	NM_009804	Cat	Catalase
C02	Mm.206417	NM_178224	Cbs	Cystathionine beta-synthase
C03	Mm.241056	NM_033037	Cdo1	Cysteine dioxygenase 1, cytosolic
C04	Mm.16831	NM_021273	Ckb	Creatine kinase, brain
C05	Mm.343942	NM_001080809	Cps1	Carbamoyl-phosphate synthetase 1
C06	Mm.28301	NM_145953	Cth	Cystathionase (cystathionine gamma-lyase)
C07	Mm.214016	NM_009994	Cyp1b1	Cytochrome P450, family 1, subfamily b, polypeptide 1
C08	Mm.20115	NM_010018	Dao	D-amino acid oxidase
C09	Mm.3636	NM_010022	Dbt	Dihydrolipoamide branched chain transacylase E2
C10	Mm.12906	NM_016672	Ddc	Dopa decarboxylase
C11	Mm.3131	NM_007861	Dld	Dihydrolipoamide dehydrogenase
C12	Mm.128580	NM_010066	Dnmt1	DNA methyltransferase (cytosine-5) 1
D01	Mm.28100	NM_023737	Ehhadh	Enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase
D02	Mm.11311	NM_026421	Enoph1	Enolase-phosphatase 1
D03	Mm.7329	NM_010255	Gamt	Guanidinoacetate methyltransferase
D04	Mm.29975	NM_025961	Gatm	Glycine amidinotransferase (L-arginine:glycine amidinotransferase)
D05	Mm.2475	NM_008097	Gcdh	Glutaryl-Coenzyme A dehydrogenase
D06	Mm.19893	NM_013528	Gfpt1	Glutamine fructose-6-phosphate transaminase 1
D07	Mm.440465	NM_001081081	Gls	Glutaminase
D08	Mm.10600	NM_008133	Glud1	Glutamate dehydrogenase 1

Position	UniGene	GenBank	Symbol	Description
D09	Mm.230169	NM_010325	Got2	Glutamate oxaloacetate transaminase 2, mitochondrial
D10	Mm.30100	NM_025325	Haao	3-hydroxyanthranilate 3,4-dioxygenase
D11	Mm.482102	NM_008254	Hmgcl	3-hydroxy-3-methylglutaryl-Coenzyme A lyase
D12	Mm.61526	NM_145942	Hmgcs1	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1
E01	Mm.392	NM_008324	Ido1	Indoleamine 2,3-dioxygenase 1
E02	Mm.299	NM_009349	Inmt	Indolethylamine N-methyltransferase
E03	Mm.6635	NM_019826	Ivd	Isovaleryl coenzyme A dehydrogenase
E04	Mm.27217	NM_133809	Kmo	Kynurenine 3-monooxygenase (kynurenine 3-hydroxylase)
E05	Mm.105278	NM_027552	Kynu	Kynureninase (L-kynurenine hydrolase)
E06	Mm.286830	NM_024434	Lap3	Leucine aminopeptidase 3
E07	Mm.312170	NM_134137	Lars	Leucyl-tRNA synthetase
E08	Mm.29324	NM_010699	Ldha	Lactate dehydrogenase A
E09	Mm.241656	NM_172778	Maob	Monoamine oxidase B
E10	Mm.14064	NM_133653	Mat1a	Methionine adenosyltransferase I, alpha
E11	Mm.137327	NM_030026	Mccc2	Methylcrotonoyl-Coenzyme A carboxylase 2 (beta)
E12	Mm.294215	NM_138670	Mpst	Mercaptopyruvate sulfurtransferase
F01	Mm.28500	NM_024433	Mtap	Methylthioadenosine phosphorylase
F02	Mm.40335	NM_001081128	Mtr	5-methyltetrahydrofolate-homocysteine methyltransferase
F03	Mm.31686	NM_178053	Nags	N-acetylglutamate synthase
F04	Mm.383203	NM_023175	Nit2	Nitrilase family, member 2
F05	Mm.2893	NM_010927	Nos2	Nitric oxide synthase 2, inducible
F06	Mm.13694	NM_016978	Oat	Ornithine aminotransferase
F07	Mm.34102	NM_013614	Odc1	Ornithine decarboxylase, structural 1
F08	Mm.318302	NM_001081130	Ogdhl	Oxoglutarate dehydrogenase-like
F09	Mm.2611	NM_008769	Otc	Ornithine transcarbamylase
F10	Mm.270287	NM_022033	Oxct2a	3-oxoacid CoA transferase 2A
F11	Mm.2212	NM_011030	P4ha1	Procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha 1 polypeptide
F12	Mm.301527	NM_024221	Pdhb	Pyruvate dehydrogenase (lipoamide) beta
G01	Mm.202337	NM_172146	Ppat	Phosphoribosyl pyrophosphate amidotransferase
G02	Mm.28456	NM_011172	Prodh	Proline dehydrogenase
G03	Mm.270525	NM_019546	Prodh2	Proline dehydrogenase (oxidase) 2
G04	Mm.127731	NM_144795	Pycr1	Pyrroline-5-carboxylate reductase 1
G05	Mm.250599	NM_025412	Pycrl	Pyrroline-5-carboxylate reductase-like
G06	Mm.2734	NM_009121	Sat1	Spermidine/spermine N1-acetyl transferase 1
G07	Mm.28685	NM_145565	Sds	Serine dehydratase
G08	Mm.10	NM_009272	Srm	Spermidine synthase
G09	Mm.28110	NM_146214	Tat	Tyrosine aminotransferase
G10	Mm.258622	NM_019911	Tdo2	Tryptophan 2,3-dioxygenase
G11	Mm.31597	NM_173391	Tph2	Tryptophan hydroxylase 2
G12	Mm.38433	NM_011710	Wars	Tryptophanyl-tRNA synthetase
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 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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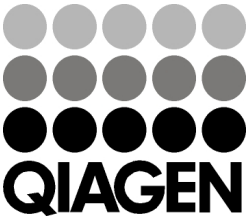

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