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

Mouse Amino Acid Metabolism II

Cat. no. 330231 PAMM-130ZA

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 II RT² Profiler PCR Array profiles the expression of 84 key genes important in amino acid biosynthesis and degradation. Of the 20 amino acids required for protein synthesis, mammals synthesize the non-essential amino acids in vivo and must obtain the other essential amino acids from their diet or intestinal flora. The interrelated metabolism of amino acids involves key signaling molecules, vitamins and cofactors. Slight alterations in the expression of these metabolic genes impose potentially adverse consequences on mammalian metabolism. For example, the metabolism of histidine forms histamine, a metabolite central to allergic reactions and vasodilation. Expression levels of the enzyme involved in this reaction, DDC, may be related to allergic sensitivities in affected individuals. Therefore, analysis of genes involved in the biosynthesis and degradation of amino acids unlocks the potential to enhance our understanding of basic biological pathways as well as nutritional status in patients with metabolic disorders or nutritional deprivation. This array includes genes important for the metabolism of alanine, asparagine, aspartic acid, histidine, isoleucine, lysine, phenylalanine, serine, glycine, threonine, tyrosine, and valine. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in 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	Aasdhppt	Aass	Abat	Abp1	Acadm	Acads	Acadsb	Acat2	Adh5	Adsl	Adss
B	Agxt	Alas1	Aldh2	Aldh3b1	Aldh5a1	Aldh6a1	Amdhd1	Amt	Aoc3	Ash1l	Asns	Aspa
C	Bbox1	Bcat1	Bckdha	Bhmt	Chdh	Cndp1	Comt	Dao	Dbh	Dbt	Ddc	Dld
D	Dlst	Dmgdh	Echs1	Fah	Ftcd	Gad2	Gcat	Gcdh	Gldc	Gnmt	Got1	Gpt
E	Hadh	Hadhb	Hdc	Hgd	Hibadh	Hibch	Hnmt	Hpd	Hsd17b10	Iars	Maoa	Mcee
F	Mif	Mut	Ogdh	Pah	Pcca	Pdha2	Phgdh	Pipox	Plod3	Pnmt	Prdx6	Psat1
G	Psph	Sardh	Sds	Shmt2	Srr	Th	Tmlhe	Tpo	Tyr	Tyrp1	Vars2	Wbscr22
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.33970	NM_026276	Aasdhppt	Aminoadipate-semialdehyde dehydrogenase-phosphopantetheinyl transferase
A03	Mm.18651	NM_013930	Aass	Aminoadipate-semialdehyde synthase
A04	Mm.259315	NM_172961	Abat	4-aminobutyrate aminotransferase
A05	Mm.213898	NM_029638	Abp1	Amiloride binding protein 1 (amine oxidase, copper-containing)
A06	Mm.10530	NM_007382	Acadm	Acyl-Coenzyme A dehydrogenase, medium chain
A07	Mm.18759	NM_007383	Acads	Acyl-Coenzyme A dehydrogenase, short chain
A08	Mm.334274	NM_025826	Acadsb	Acyl-Coenzyme A dehydrogenase, short/branched chain
A09	Mm.439711	NM_009338	Acat2	Acetyl-Coenzyme A acetyltransferase 2
A10	Mm.3874	NM_007410	Adh5	Alcohol dehydrogenase 5 (class III), chi polypeptide
A11	Mm.38151	NM_009634	Adsl	Adenylosuccinate lyase
A12	Mm.338021	NM_007422	Adss	Adenylosuccinate synthetase, non muscle
B01	Mm.7457	NM_016702	Agxt	Alanine-glyoxylate aminotransferase
B02	Mm.290578	NM_020559	Alas1	Aminolevulinic acid synthase 1
B03	Mm.284446	NM_009656	Aldh2	Aldehyde dehydrogenase 2, mitochondrial
B04	Mm.109341	NM_026316	Aldh3b1	Aldehyde dehydrogenase 3 family, member B1
B05	Mm.393311	NM_172532	Aldh5a1	Aldhehyde dehydrogenase family 5, subfamily A1
B06	Mm.247510	NM_134042	Aldh6a1	Aldehyde dehydrogenase family 6, subfamily A1
B07	Mm.244518	NM_027908	Amdhd1	Amidohydrolase domain containing 1
B08	Mm.390225	NM_001013814	Amt	Aminomethyltransferase
B09	Mm.67281	NM_009675	Aoc3	Amine oxidase, copper containing 3
B10	Mm.130752	NM_138679	Ash1l	Ash1 (absent, small, or homeotic)-like (Drosophila)
B11	Mm.2942	NM_012055	Asns	Asparagine synthetase
B12	Mm.293574	NM_023113	Aspa	Aspartoacylase
C01	Mm.27335	NM_130452	Bbox1	Butyrobetaine (gamma), 2-oxoglutarate dioxygenase 1 (gamma-butyrobetaine hydroxylase)
C02	Mm.4606	NM_007532	Bcat1	Branched chain aminotransferase 1, cytosolic
C03	Mm.25848	NM_007533	Bckdha	Branched chain ketoacid dehydrogenase E1, alpha polypeptide
C04	Mm.329582	NM_016668	Bhmt	Betaine-homocysteine methyltransferase
C05	Mm.259916	NM_172264	Chdh	Choline dehydrogenase
C06	Mm.23278	NM_177450	Cndp1	Carnosine dipeptidase 1 (metallopeptidase M20 family)
C07	Mm.100940	NM_007744	Comt	Catechol-O-methyltransferase
C08	Mm.20115	NM_010018	Dao	D-amino acid oxidase
C09	Mm.167781	NM_138942	Dbh	Dopamine beta hydroxylase
C10	Mm.3636	NM_010022	Dbt	Dihydrolipoamide branched chain transacylase E2
C11	Mm.12906	NM_016672	Ddc	Dopa decarboxylase
C12	Mm.3131	NM_007861	Dld	Dihydrolipoamide dehydrogenase
D01	Mm.296221	NM_030225	Dlst	Dihydrolipoamide S-succinyltransferase (E2 component of 2-oxo-glutarate complex)
D02	Mm.21789	NM_028772	Dmgdh	Dimethylglycine dehydrogenase precursor
D03	Mm.24452	NM_053119	Echs1	Enoyl Coenzyme A hydratase, short chain, 1, mitochondrial
D04	Mm.3798	NM_010176	Fah	Fumarylacetoacetate hydrolase
D05	Mm.36278	NM_080845	Ftcd	Formiminotransferase cyclodeaminase
D06	Mm.4784	NM_008078	Gad2	Glutamic acid decarboxylase 2
D07	Mm.237085	NM_013847	Gcat	Glycine C-acetyltransferase (2-amino-3-ketobutyrate-coenzyme A ligase)

Position	UniGene	GenBank	Symbol	Description
D08	Mm.2475	NM_008097	Gcdh	Glutaryl-Coenzyme A dehydrogenase
D09	Mm.274852	NM_138595	Gldc	Glycine decarboxylase
D10	Mm.29395	NM_010321	Gnmt	Glycine N-methyltransferase
D11	Mm.19039	NM_010324	Got1	Glutamate oxaloacetate transaminase 1, soluble
D12	Mm.30130	NM_182805	Gpt	Glutamic pyruvic transaminase, soluble
E01	Mm.260164	NM_008212	Hadh	Hydroxyacyl-Coenzyme A dehydrogenase
E02	Mm.291463	NM_145558	Hadhb	Hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydratase (trifunctional protein), beta subunit
E03	Mm.18603	NM_008230	Hdc	Histidine decarboxylase
E04	Mm.157442	NM_013547	Hgd	Homogentisate 1, 2-dioxygenase
E05	Mm.286458	NM_145567	Hibadh	3-hydroxyisobutyrate dehydrogenase
E06	Mm.222063	NM_146108	Hibch	3-hydroxyisobutyryl-Coenzyme A hydrolase
E07	Mm.33120	NM_080462	Hnmt	Histamine N-methyltransferase
E08	Mm.439709	NM_008277	Hpd	4-hydroxyphenylpyruvic acid dioxygenase
E09	Mm.6994	NM_016763	Hsd17b10	Hydroxysteroid (17-beta) dehydrogenase 10
E10	Mm.21118	NM_172015	Iars	Isoleucine-tRNA synthetase
E11	Mm.21108	NM_173740	Maoa	Monoamine oxidase A
E12	Mm.10093	NM_028626	Mcee	Methylmalonyl CoA epimerase
F01	Mm.2326	NM_010798	Mif	Macrophage migration inhibitory factor
F02	Mm.259884	NM_008650	Mut	Methylmalonyl-Coenzyme A mutase
F03	Mm.276348	NM_010956	Ogdh	Oxoglutarate dehydrogenase (lipoamide)
F04	Mm.263539	NM_008777	Pah	Phenylalanine hydroxylase
F05	Mm.23876	NM_144844	Pcca	Propionyl-Coenzyme A carboxylase, alpha polypeptide
F06	Mm.4223	NM_008811	Pdha2	Pyruvate dehydrogenase E1 alpha 2
F07	Mm.16898	NM_016966	Phgdh	3-phosphoglycerate dehydrogenase
F08	Mm.8543	NM_008952	Pipox	Pipecolic acid oxidase
F09	Mm.251003	NM_011962	Plod3	Procollagen-lysine, 2-oxoglutarate 5-dioxygenase 3
F10	Mm.57030	NM_008890	Pnmt	Phenylethanolamine-N-methyltransferase
F11	Mm.186185	NM_007453	Prdx6	Peroxiredoxin 6
F12	Mm.289936	NM_177420	Psat1	Phosphoserine aminotransferase 1
G01	Mm.271784	NM_133900	Psph	Phosphoserine phosphatase
G02	Mm.278467	NM_138665	Sardh	Sarcosine dehydrogenase
G03	Mm.28685	NM_145565	Sds	Serine dehydratase
G04	Mm.29890	NM_028230	Shmt2	Serine hydroxymethyltransferase 2 (mitochondrial)
G05	Mm.131443	NM_013761	Srr	Serine racemase
G06	Mm.1292	NM_009377	Th	Tyrosine hydroxylase
G07	Mm.394228	NM_138758	Tmlhe	Trimethyllysine hydroxylase, epsilon
G08	Mm.4991	NM_009417	Tpo	Thyroid peroxidase
G09	Mm.238127	NM_011661	Tyr	Tyrosinase
G10	Mm.30438	NM_031202	Tyrp1	Tyrosinase-related protein 1
G11	Mm.32002	NM_175137	Vars2	Valyl-tRNA synthetase 2, mitochondrial (putative)
G12	Mm.439878	NM_025375	Wbscr22	Williams Beuren syndrome chromosome region 22
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.

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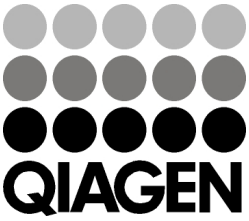

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