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

Human Amino Acid Metabolism I

Cat. no. 330231 PAHS-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 Human 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	OXCT2	P4HA1	PDHB
G	PPAT	PRODH	PRODH2	PYCR1	PYCRL	SAT1	SDS	SRM	TAT	TDO2	TPH2	WARS
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.529735	NM_182662	AADAT	Aminoadipate aminotransferase
A02	Hs.431417	NM_001088	AANAT	Aralkylamine N-acetyltransferase
A03	Hs.647097	NM_001091	ABP1	Amiloride binding protein 1 (amine oxidase (copper-containing))
A04	Hs.445040	NM_000016	ACADM	Acyl-CoA dehydrogenase, C-4 to C-12 straight chain
A05	Hs.232375	NM_000019	ACAT1	Acetyl-CoA acetyltransferase 1
A06	Hs.655728	NM_138326	ACMSD	Aminocarboxymuconate semialdehyde decarboxylase
A07	Hs.334707	NM_000666	ACY1	Aminoacylase 1
A08	Hs.502773	NM_018269	ADI1	Acireductone dioxygenase 1
A09	Hs.567583	NM_024758	AGMAT	Agmatine ureohydrolase (agmatinase)
A10	Hs.388004	NM_000687	AHCY	Adenosylhomocysteinase
A11	Hs.500645	NM_002860	ALDH18A1	Aldehyde dehydrogenase 18 family, member A1
A12	Hs.77448	NM_003748	ALDH4A1	Aldehyde dehydrogenase 4 family, member A1
B01	Hs.2533	NM_000696	ALDH9A1	Aldehyde dehydrogenase 9 family, member A1
B02	Hs.159118	NM_001634	AMD1	Adenosylmethionine decarboxylase 1
B03	Hs.406238	NM_001159	AOX1	Aldehyde oxidase 1
B04	Hs.447794	NM_015957	APIP	APAF1 interacting protein
B05	Hs.708024	NM_001172	ARG2	Arginase, type II
B06	Hs.632015	NM_000048	ASL	Argininosuccinate lyase
B07	Hs.160786	NM_000050	ASS1	Argininosuccinate synthase 1
B08	Hs.175905	NM_001698	AUH	AU RNA binding protein/enoyl-CoA hydratase
B09	Hs.512670	NM_001190	BCAT2	Branched chain amino-acid transaminase 2, mitochondrial
B10	Hs.433307	NM_000709	BCKDHA	Branched chain keto acid dehydrogenase E1, alpha polypeptide
B11	Hs.80756	NM_001713	BHMT	Betaine--homocysteine S-methyltransferase
B12	Hs.377010	NM_004341	CAD	Carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase
C01	Hs.502302	NM_001752	CAT	Catalase
C02	Hs.533013	NM_000071	CBS	Cystathionine-beta-synthase
C03	Hs.442378	NM_001801	CDO1	Cysteine dioxygenase, type I
C04	Hs.173724	NM_001823	CKB	Creatine kinase, brain
C05	Hs.149252	NM_001875	CPS1	Carbamoyl-phosphate synthase 1, mitochondrial
C06	Hs.19904	NM_001902	CTH	Cystathionase (cystathionine gamma-lyase)
C07	Hs.154654	NM_000104	CYP1B1	Cytochrome P450, family 1, subfamily B, polypeptide 1
C08	Hs.113227	NM_001917	DAO	D-amino-acid oxidase
C09	Hs.709187	NM_001918	DBT	Dihydrolipoamide branched chain transacylase E2
C10	Hs.359698	NM_000790	DDC	Dopa decarboxylase (aromatic L-amino acid decarboxylase)
C11	Hs.131711	NM_000108	DLD	Dihydrolipoamide dehydrogenase
C12	Hs.202672	NM_001379	DNMT1	DNA (cytosine-5-)-methyltransferase 1
D01	Hs.429879	NM_001966	EHHADH	Enoyl-CoA, hydratase/3-hydroxyacyl CoA dehydrogenase
D02	Hs.18442	NM_021204	ENOPH1	Enolase-phosphatase 1
D03	Hs.81131	NM_000156	GAMT	Guanidinoacetate N-methyltransferase
D04	Hs.75335	NM_001482	GATM	Glycine amidinotransferase (L-arginine:glycine amidinotransferase)
D05	Hs.532699	NM_000159	GCDH	Glutaryl-CoA dehydrogenase
D06	Hs.580300	NM_002056	GFPT1	Glutamine--fructose-6-phosphate transaminase 1
D07	Hs.116448	NM_014905	GLS	Glutaminase
D08	Hs.500409	NM_005271	GLUD1	Glutamate dehydrogenase 1

Position	UniGene	GenBank	Symbol	Description
D09	Hs.599470	NM_002080	GOT2	Glutamic-oxaloacetic transaminase 2, mitochondrial (aspartate aminotransferase 2)
D10	Hs.368805	NM_012205	HAAO	3-hydroxyanthranilate 3,4-dioxygenase
D11	Hs.533444	NM_000191	HMGCL	3-hydroxymethyl-3-methylglutaryl-CoA lyase
D12	Hs.397729	NM_002130	HMGCS1	3-hydroxy-3-methylglutaryl-CoA synthase 1 (soluble)
E01	Hs.840	NM_002164	IDO1	Indoleamine 2,3-dioxygenase 1
E02	Hs.632629	NM_006774	INMT	Indolethylamine N-methyltransferase
E03	Hs.513646	NM_002225	IVD	Isovaleryl-CoA dehydrogenase
E04	Hs.409081	NM_003679	KMO	Kynurenine 3-monooxygenase (kynurenine 3-hydroxylase)
E05	Hs.470126	NM_003937	KYNU	Kynureninase
E06	Hs.570791	NM_015907	LAP3	Leucine aminopeptidase 3
E07	Hs.432674	NM_020117	LARS	Leucyl-tRNA synthetase
E08	Hs.2795	NM_005566	LDHA	Lactate dehydrogenase A
E09	Hs.654473	NM_000898	MAOB	Monoamine oxidase B
E10	Hs.282670	NM_000429	MAT1A	Methionine adenosyltransferase I, alpha
E11	Hs.604789	NM_022132	MCCC2	Methylcrotonoyl-CoA carboxylase 2 (beta)
E12	Hs.248267	NM_001013436	MPST	Mercaptopyruvate sulfurtransferase
F01	Hs.193268	NM_002451	MTAP	Methylthioadenosine phosphorylase
F02	Hs.498187	NM_000254	MTR	5-methyltetrahydrofolate-homocysteine methyltransferase
F03	Hs.8876	NM_153006	NAGS	N-acetylglutamate synthase
F04	Hs.439152	NM_020202	NIT2	Nitrilase family, member 2
F05	Hs.709191	NM_000625	NOS2	Nitric oxide synthase 2, inducible
F06	Hs.523332	NM_000274	OAT	Ornithine aminotransferase
F07	Hs.467701	NM_002539	ODC1	Ornithine decarboxylase 1
F08	Hs.17860	NM_018245	OGDHL	Oxoglutarate dehydrogenase-like
F09	Hs.117050	NM_000531	OTC	Ornithine carbamoyltransferase
F10	Hs.472491	NM_022120	OXCT2	3-oxoacid CoA transferase 2
F11	Hs.500047	NM_000917	P4HA1	Prolyl 4-hydroxylase, alpha polypeptide I
F12	Hs.161357	NM_000925	PDHB	Pyruvate dehydrogenase (lipoamide) beta
G01	Hs.331420	NM_002703	PPAT	Phosphoribosyl pyrophosphate amidotransferase
G02	Hs.517352	NM_016335	PRODH	Proline dehydrogenase (oxidase) 1
G03	Hs.515366	NM_021232	PRODH2	Proline dehydrogenase (oxidase) 2
G04	Hs.458332	NM_006907	PYCR1	Pyrroline-5-carboxylate reductase 1
G05	Hs.165186	NM_023078	PYCRL	Pyrroline-5-carboxylate reductase-like
G06	Hs.28491	NM_002970	SAT1	Spermidine/spermine N1-acetyltransferase 1
G07	Hs.439023	NM_006843	SDS	Serine dehydratase
G08	Hs.76244	NM_003132	SRM	Spermidine synthase
G09	Hs.161640	NM_000353	TAT	Tyrosine aminotransferase
G10	Hs.183671	NM_005651	TDO2	Tryptophan 2,3-dioxygenase
G11	Hs.376337	NM_173353	TPH2	Tryptophan hydroxylase 2
G12	Hs.497599	NM_004184	WARS	Tryptophanyl-tRNA synthetase
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 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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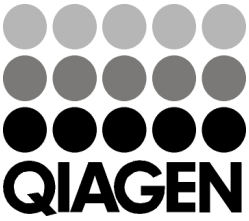

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