RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Amino Acid Metabolism II

Cat. no. 330231 PARN-130ZR

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 Rat 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*.

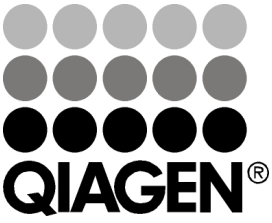
Shipping and storage

RT² Profiler PCR Arrays in 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	Rn.11133	NM_017193	Aadat	Aminoadipate aminotransferase
A02	Rn.17217	NM_001106798	Aasdhppt	Aminoadipate-semialdehyde dehydrogenase-phosphopantetheinyl transferase
A03	Rn.198671	NM_001100963	Aass	Aminoadipate-semialdehyde synthase
A04	Rn.10090	NM_031003	Abat	4-aminobutyrate aminotransferase
A05	Rn.54493	NM_022935	Abp1	Amiloride binding protein 1 (amine oxidase, copper-containing)
A06	Rn.3786	NM_130433	Acaa2	Acetyl-Coenzyme A acyltransferase 2
A07	Rn.6302	NM_016986	Acadm	Acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain
A08	Rn.1167	NM_022512	Acads	Acyl-Coenzyme A dehydrogenase, C-2 to C-3 short chain
A09	Rn.44423	NM_013084	Acadsb	Acyl-Coenzyme A dehydrogenase, short/branched chain
A10	Rn.203063	NM_001006995	Acat3	Acetyl-Coenzyme A acetyltransferase 3
A11	Rn.137460	NM_001106475	Adh6a	Alcohol dehydrogenase 6A (class V)
A12	Rn.23276	NM_001130503	Adsl	Adenylosuccinate lyase
B01	Rn.9047	NM_001105975	Adss	Adenylosuccinate synthase
B02	Rn.9931	NM_030656	Agxt	Alanine-glyoxylate aminotransferase
B03	Rn.97126	NM_024484	Alas1	Aminolevulinate, delta-, synthase 1
B04	Rn.101781	NM_032416	Aldh2	Aldehyde dehydrogenase 2 family (mitochondrial)
B05	Rn.162510	NM_001006998	Aldh3b1	Aldehyde dehydrogenase 3 family, member B1
B06	Rn.10070	XM_214478	Aldh5a1	Aldehyde dehydrogenase 5 family, member A1
B07	Rn.2098	NM_031057	Aldh6a1	Aldehyde dehydrogenase 6 family, member A1
B08	Rn.162376	NM_001014004	Amt	Aminomethyltransferase
B09	Rn.198327	NM_031582	Aoc3	Amine oxidase, copper containing 3 (vascular adhesion protein 1)
B10	Rn.206058	NM_001107689	Ash1l	Ash1 (absent, small, or homeotic)-like (Drosophila)
B11	Rn.11172	NM_013079	Asns	Asparagine synthetase
B12	Rn.21677	NM_024399	Aspa	Aspartoacylase
C01	Rn.16333	NM_022629	Bbox1	Butyrobetaine (gamma), 2-oxoglutarate dioxygenase (gamma-butyrobetaine hydroxylase) 1
C02	Rn.8273	NM_017253	Bcat1	Branched chain aminotransferase 1, cytosolic
C03	Rn.15623	NM_019267	Bckdhb	Branched chain keto acid dehydrogenase E1, beta polypeptide
C04	Rn.11406	NM_030850	Bhmt	Betaine-homocysteine methyltransferase
C05	Rn.22857	NM_198731	Chdh	Choline dehydrogenase
C06	Rn.15548	NM_001007687	Cndp1	Carnosine dipeptidase 1 (metallopeptidase M20 family)
C07	Rn.220	NM_012531	Comt	Catechol-O-methyltransferase
C08	Rn.81058	NM_053626	Dao	D-amino-acid oxidase
C09	Rn.87166	NM_013158	Dbh	Dopamine beta-hydroxylase (dopamine beta-monooxygenase)
C10	Rn.198610	NM_053312	Dbt	Dihydrolipoamide branched chain transacylase E2
C11	Rn.11064	NM_012545	Ddc	Dopa decarboxylase (aromatic L-amino acid decarboxylase)
C12	Rn.86962	NM_199385	Dld	Dihydrolipoamide dehydrogenase
D01	Rn.99702	NM_001006981	Dlst	Dihydrolipoamide S-succinyltransferase (E2 component of 2-oxo-glutarate complex)
D02	Rn.3646	NM_139102	Dmgdh	Dimethylglycine dehydrogenase
D03	Rn.6847	NM_078623	Echs1	Enoyl Coenzyme A hydratase, short chain, 1, mitochondrial
D04	Rn.9195	NM_017181	Fah	Fumarylacetoacetate hydrolase
D05	Rn.20140	NM_053567	Ftcd	Formiminotransferase cyclodeaminase
D06	Rn.29951	NM_012563	Gad2	Glutamate decarboxylase 2
D07	Rn.43940	NM_001024277	Gcat	Glycine C-acetyltransferase (2-amino-3-ketobutyrate-coenzyme A ligase)
D08	Rn.99039	NM_001108896	Gcdh	Glutaryl-Coenzyme A dehydrogenase
D09	Rn.17101	NM_001107583	Gldc	Glycine dehydrogenase (decarboxylating)
D10	Rn.11142	NM_017084	Gnmt	Glycine N-methyltransferase
D11	Rn.5819	NM_012571	Got1	Glutamic-oxaloacetic transaminase 1, soluble (aspartate aminotransferase 1)
D12	Rn.6318	NM_031039	Gpt	Glutamic-pyruvate transaminase (alanine aminotransferase)
E01	Rn.92789	NM_057186	Hadh	Hydroxyacyl-Coenzyme A dehydrogenase
E02	Rn.11253	NM_133618	Hadhb	Hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydratase (trifunctional protein), beta subunit
E03	Rn.48653	NM_017016	Hdc	Histidine decarboxylase
E04	Rn.24631	NM_001012145	Hgd	Homogentisate 1, 2-dioxygenase
E05	Rn.73	NM_022243	Hibadh	3-hydroxyisobutyrate dehydrogenase
E06	Rn.8745	NM_001013112	Hibch	3-hydroxyisobutyryl-Coenzyme A hydrolase

Position	UniGene	GenBank	Symbol	Description
E07	Rn.13145	NM_031044	Hnmt	Histamine N-methyltransferase
E08	Rn.3664	NM_017233	Hpd	4-hydroxyphenylpyruvate dioxygenase
E09	Rn.2700	NM_031682	Hsd17b10	Hydroxysteroid (17-beta) dehydrogenase 10
E10	Rn.61745	NM_001100572	Iars	Isoleucyl-tRNA synthetase
E11	Rn.17983	NM_001011956	Lcmt2	Leucine carboxyl methyltransferase 2
E12	Rn.163443	NM_033653	Maoa	Monoamine oxidase A
F01	Rn.3420	NM_001106341	Mcee	Methylmalonyl CoA epimerase
F02	Rn.2661	NM_031051	Mif	Macrophage migration inhibitory factor
F03	Rn.54738	XM_001067239	Mut	Methylmalonyl-Coenzyme A mutase
F04	Rn.38202	NM_001106062	Ogdhl	Oxoglutarate dehydrogenase-like
F05	Rn.1652	NM_012619	Pah	Phenylalanine hydroxylase
F06	Rn.6033	NM_019330	Pcca	Propionyl-coenzyme A carboxylase, alpha polypeptide
F07	Rn.11126	NM_053994	Pdha2	Pyruvate dehydrogenase (lipoamide) alpha 2
F08	Rn.6872	NM_031620	Phgdh	Phosphoglycerate dehydrogenase
F09	Rn.163169	NM_001012009	Pipox	Pipecolic acid oxidase
F10	Rn.90152	NM_178101	Plod3	Procollagen-lysine, 2-oxoglutarate 5-dioxygenase 3
F11	Rn.42	NM_053576	Prdx6	Peroxiredoxin 6
F12	Rn.100813	NM_198738	Psat1	Phosphoserine aminotransferase 1
G01	Rn.8734	NM_001009679	Psph	Phosphoserine phosphatase
G02	Rn.89832	NM_053664	Sardh	Sarcosine dehydrogenase
G03	Rn.9918	NM_053962	Sds	Serine dehydratase
G04	Rn.9214	NM_001008322	Shmt2	Serine hydroxymethyltransferase 2 (mitochondrial)
G05	Rn.220332	NM_198757	Srr	Serine racemase
G06	Rn.11082	NM_012740	Th	Tyrosine hydroxylase
G07	Rn.3607	NM_133387	Tmlhe	Trimethyllysine hydroxylase, epsilon
G08	Rn.91199	NM_019353	Tpo	Thyroid peroxidase
G09	Rn.38928	NM_001107535	Tyr	Tyrosinase
G10	Rn.40774	NM_001106664	Tyrp1	Tyrosinase-related protein 1
G11	Rn.12314	NM_213563	Vars2	Valyl-tRNA synthetase 2, mitochondrial (putative)
G12	Rn.163205	NM_001135743	Wbscr22	Williams Beuren syndrome chromosome region 22
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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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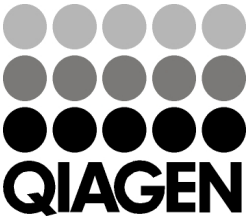

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