RT² Profiler PCR Array (Rotor-Gene® Format)

Human Glucose Metabolism

Cat. no. 330231 PAHS-006ZR

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 Human Glucose Metabolism RT² Profiler PCR Array profiles the expression of 84 key genes involved in the regulation and enzymatic pathways of glucose and glycogen metabolism. Glycolysis, the TCA cycle and the pentose phosphate pathways break down glucose from carbohydrates into the metabolites necessary for energy production, and gluconeogenesis stores excess energy as glucose. Cells, particularly in skeletal muscle and the liver, store excess glucose as the polysaccharide glycogen, and quickly metabolize it again when necessary. Changes in glucose metabolism gene expression are common in cancerous tissues. Specifically, tumors often show decreased oxidative phosphorylation, even in the presence of sufficient oxygen, due to enhanced transcription of glycolytic genes and/or reduced transcription of TCA cycle genes. In addition, the pathological consequences of diabetes and obesity involve gene expression changes in glucose metabolic pathways. In one notable example, PCK1 overexpression in mice leads to obesity. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in glucose metabolism with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

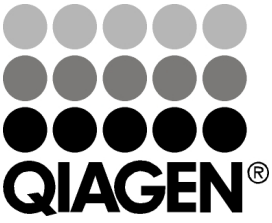
Shipping and storage

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.



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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	Hs.387567	NM_001096	ACLY	ATP citrate lyase
A02	Hs.567229	NM_002197	ACO1	Aconitase 1, soluble
A03	Hs.643610	NM_001098	ACO2	Aconitase 2, mitochondrial
A04	Hs.904	NM_000028	AGL	Amylo-alpha-1, 6-glucosidase, 4-alpha-glucanotransferase
A05	Hs.513490	NM_000034	ALDOA	Aldolase A, fructose-bisphosphate
A06	Hs.530274	NM_000035	ALDOB	Aldolase B, fructose-bisphosphate
A07	Hs.155247	NM_005165	ALDOC	Aldolase C, fructose-bisphosphate
A08	Hs.198365	NM_001724	BPGM	2,3-bisphosphoglycerate mutase
A09	Hs.430606	NM_004077	CS	Citrate synthase
A10	Hs.335551	NM_001931	DLAT	Dihydrolipoamide S-acetyltransferase
A11	Hs.131711	NM_000108	DLD	Dihydrolipoamide dehydrogenase
A12	Hs.525459	NM_001933	DLST	Dihydrolipoamide S-succinyltransferase (E2 component of 2-oxo-glutarate complex)
B01	Hs.517145	NM_001428	ENO1	Enolase 1, (alpha)
B02	Hs.511915	NM_001975	ENO2	Enolase 2 (gamma, neuronal)
B03	Hs.224171	NM_001976	ENO3	Enolase 3 (beta, muscle)
B04	Hs.494496	NM_000507	FBP1	Fructose-1,6-bisphosphatase 1
B05	Hs.61255	NM_003837	FBP2	Fructose-1,6-bisphosphatase 2
B06	Hs.592490	NM_000143	FH	Fumarate hydratase
B07	Hs.212293	NM_000151	G6PC	Glucose-6-phosphatase, catalytic subunit
B08	Hs.294005	NM_138387	G6PC3	Glucose 6 phosphatase, catalytic, 3
B09	Hs.461047	NM_000402	G6PD	Glucose-6-phosphate dehydrogenase
B10	Hs.435012	NM_138801	GALM	Galactose mutarotase (aldose 1-epimerase)
B11	Hs.436062	NM_000158	GBE1	Glucan (1,4-alpha-), branching enzyme 1
B12	Hs.1270	NM_000162	GCK	Glucokinase (hexokinase 4)
C01	Hs.466471	NM_000175	GPI	Glucose-6-phosphate isomerase
C02	Hs.466828	NM_019884	GSK3A	Glycogen synthase kinase 3 alpha
C03	Hs.445733	NM_002093	GSK3B	Glycogen synthase kinase 3 beta
C04	Hs.386225	NM_002103	GYS1	Glycogen synthase 1 (muscle)
C05	Hs.82614	NM_021957	GYS2	Glycogen synthase 2 (liver)
C06	Hs.463511	NM_004285	H6PD	Hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)
C07	Hs.406266	NM_000189	HK2	Hexokinase 2
C08	Hs.411695	NM_002115	HK3	Hexokinase 3 (white cell)
C09	Hs.593422	NM_005896	IDH1	Isocitrate dehydrogenase 1 (NADP+), soluble
C10	Hs.596461	NM_002168	IDH2	Isocitrate dehydrogenase 2 (NADP+), mitochondrial
C11	Hs.591110	NM_005530	IDH3A	Isocitrate dehydrogenase 3 (NAD+) alpha
C12	Hs.436405	NM_174856	IDH3B	Isocitrate dehydrogenase 3 (NAD+) beta
D01	Hs.410197	NM_174869	IDH3G	Isocitrate dehydrogenase 3 (NAD+) gamma
D02	Hs.526521	NM_005917	MDH1	Malate dehydrogenase 1, NAD (soluble)
D03	Hs.147816	NM_001039845	MDH1B	Malate dehydrogenase 1B, NAD (soluble)
D04	Hs.520967	NM_005918	MDH2	Malate dehydrogenase 2, NAD (mitochondrial)
D05	Hs.488181	NM_002541	OGDH	Oxoglutarate (alpha-ketoglutarate) dehydrogenase (lipoamide)
D06	Hs.89890	NM_000920	PC	Pyruvate carboxylase
D07	Hs.1872	NM_002591	PCK1	Phosphoenolpyruvate carboxykinase 1 (soluble)
D08	Hs.75812	NM_004563	PCK2	Phosphoenolpyruvate carboxykinase 2 (mitochondrial)
D09	Hs.530331	NM_000284	PDHA1	Pyruvate dehydrogenase (lipoamide) alpha 1
D10	Hs.161357	NM_000925	PDHB	Pyruvate dehydrogenase (lipoamide) beta
D11	Hs.470633	NM_002610	PDK1	Pyruvate dehydrogenase kinase, isozyme 1
D12	Hs.256667	NM_002611	PDK2	Pyruvate dehydrogenase kinase, isozyme 2
E01	Hs.658190	NM_005391	PDK3	Pyruvate dehydrogenase kinase, isozyme 3
E02	Hs.8364	NM_002612	PDK4	Pyruvate dehydrogenase kinase, isozyme 4
E03	Hs.654693	NM_020786	PDP2	Pyruvate dehyrogenase phosphatase catalytic subunit 2
E04	Hs.655245	NM_017990	PDPR	Pyruvate dehydrogenase phosphatase regulatory subunit
E05	Hs.255093	NM_002626	PFKL	Phosphofructokinase, liver
E06	Hs.632642	NM_000290	PGAM2	Phosphoglycerate mutase 2 (muscle)
E07	Hs.78771	NM_000291	PGK1	Phosphoglycerate kinase 1
E08	Hs.367727	NM_138733	PGK2	Phosphoglycerate kinase 2

Position	UniGene	GenBank	Symbol	Description
E09	Hs.466165	NM_012088	PGLS	6-phosphogluconolactonase
E10	Hs.1869	NM_002633	PGM1	Phosphoglucomutase 1
E11	Hs.23363	NM_018290	PGM2	Phosphoglucomutase 2
E12	Hs.708038	NM_015599	PGM3	Phosphoglucomutase 3
F01	Hs.201379	NM_002637	PHKA1	Phosphorylase kinase, alpha 1 (muscle)
F02	Hs.78060	NM_000293	PHKB	Phosphorylase kinase, beta
F03	Hs.715728	NM_006213	PHKG1	Phosphorylase kinase, gamma 1 (muscle)
F04	Hs.196177	NM_000294	PHKG2	Phosphorylase kinase, gamma 2 (testis)
F05	Hs.95990	NM_000298	PKLR	Pyruvate kinase, liver and RBC
F06	Hs.56	NM_002764	PRPS1	Phosphoribosyl pyrophosphate synthetase 1
F07	Hs.169284	NM_175886	PRPS1L1	Phosphoribosyl pyrophosphate synthetase 1-like 1
F08	Hs.654581	NM_002765	PRPS2	Phosphoribosyl pyrophosphate synthetase 2
F09	Hs.282417	NM_002863	PYGL	Phosphorylase, glycogen, liver
F10	Hs.154084	NM_005609	PYGM	Phosphorylase, glycogen, muscle
F11	Hs.11916	NM_022128	RBKS	Ribokinase
F12	Hs.282260	NM_199229	RPE	Ribulose-5-phosphate-3-epimerase
G01	Hs.469264	NM_144563	RPIA	Ribose 5-phosphate isomerase A
G02	Hs.440475	NM_004168	SDHA	Succinate dehydrogenase complex, subunit A, flavoprotein (Fp)
G03	Hs.465924	NM_003000	SDHB	Succinate dehydrogenase complex, subunit B, iron sulfur (Ip)
G04	Hs.444472	NM_003001	SDHC	Succinate dehydrogenase complex, subunit C, integral membrane protein, 15kDa
G05	Hs.356270	NM_003002	SDHD	Succinate dehydrogenase complex, subunit D, integral membrane protein
G06	Hs.546323	NM_003850	SUCLA2	Succinate-CoA ligase, ADP-forming, beta subunit
G07	Hs.270428	NM_003849	SUCLG1	Succinate-CoA ligase, alpha subunit
G08	Hs.655250	NM_003848	SUCLG2	Succinate-CoA ligase, GDP-forming, beta subunit
G09	Hs.438678	NM_006755	TALDO1	Transaldolase 1
G10	Hs.89643	NM_001064	TKT	Transketolase
G11	Hs.524219	NM_000365	TPI1	Triosephosphate isomerase 1
G12	Hs.516217	NM_006759	UGP2	UDP-glucose pyrophosphorylase 2
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 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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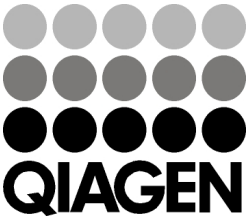

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