RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Glucose Metabolism

Cat. no. 330231 PARN-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 Rat 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*.

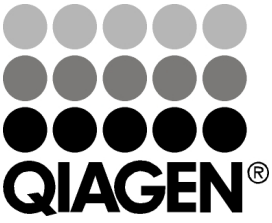
Shipping and storage

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	Rn.29771	NM_016987	Acly	ATP citrate lyase
A02	Rn.35934	NM_017321	Aco1	Aconitase 1, soluble
A03	Rn.43737	NM_024398	Aco2	Aconitase 2, mitochondrial
A04	Rn.34559	NM_001108564	Agl	Amylo-1,6-glucosidase, 4-alpha-glucanotransferase
A05	Rn.1774	NM_012495	Aldoa	Aldolase A, fructose-bisphosphate
A06	Rn.98207	NM_012496	Aldob	Aldolase B, fructose-bisphosphate
A07	Rn.11211	NM_012497	Aldoc	Aldolase C, fructose-bisphosphate
A08	Rn.204528	NM_199382	Bpgm	2,3-bisphosphoglycerate mutase
A09	Rn.66581	NM_130755	Cs	Citrate synthase
A10	Rn.15413	NM_031025	Dlat	Dihydrolipoamide S-acetyltransferase
A11	Rn.86962	NM_199385	Dld	Dihydrolipoamide dehydrogenase
A12	Rn.99702	NM_001006981	Dlst	Dihydrolipoamide S-succinyltransferase (E2 component of 2-oxo-glutarate complex)
B01	Rn.4236	NM_012554	Eno1	Enolase 1, (alpha)
B02	Rn.10828	NM_139325	Eno2	Enolase 2, gamma, neuronal
B03	Rn.3443	NM_012949	Eno3	Enolase 3, beta, muscle
B04	Rn.33703	NM_012558	Fbp1	Fructose-1,6-bisphosphatase 1
B05	Rn.15319	NM_053716	Fbp2	Fructose-1,6-bisphosphatase 2
B06	Rn.29782	NM_017005	Fh1	Fumarate hydratase 1
B07	Rn.10992	NM_013098	G6pc	Glucose-6-phosphatase, catalytic subunit
B08	Rn.66254	NM_176077	G6pc3	Glucose 6 phosphatase, catalytic, 3
B09	Rn.11040	NM_017006	G6pd	Glucose-6-phosphate dehydrogenase
B10	Rn.83639	NM_001007704	Galm	Galactose mutarotase (aldose 1-epimerase)
B11	Rn.91450	NM_017008	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
B12	Rn.64496	NM_023964	Gapdhs	Glyceraldehyde-3-phosphate dehydrogenase, spermatogenic
C01	Rn.10447	NM_012565	Gck	Glucokinase
C02	Rn.84435	NM_207592	Gpi	Glucose phosphate isomerase
C03	Rn.36807	NM_017344	Gsk3a	Glycogen synthase kinase 3 alpha
C04	Rn.10426	NM_032080	Gsk3b	Glycogen synthase kinase 3 beta
C05	Rn.95278	NM_001109615	Gys1	Glycogen synthase 1, muscle
C06	Rn.2906	NM_013089	Gys2	Glycogen synthase 2
C07	Rn.17292	NM_001106698	H6pd	Hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)
C08	Rn.91375	NM_012735	Hk2	Hexokinase 2
C09	Rn.162179	NM_022179	Hk3	Hexokinase 3 (white cell)
C10	Rn.3561	NM_031510	Idh1	Isocitrate dehydrogenase 1 (NADP+), soluble
C11	Rn.3490	NM_001014161	Idh2	Isocitrate dehydrogenase 2 (NADP+), mitochondrial
C12	Rn.95104	NM_053638	Idh3a	Isocitrate dehydrogenase 3 (NAD+) alpha
D01	Rn.1093	NM_053581	Idh3b	Isocitrate dehydrogenase 3 (NAD+) beta
D02	Rn.2837	NM_031551	Idh3g	Isocitrate dehydrogenase 3 (NAD), gamma
D03	Rn.13492	NM_033235	Mdh1	Malate dehydrogenase 1, NAD (soluble)
D04	Rn.102913	NM_001108221	Mdh1b	Malate dehydrogenase 1B, NAD (soluble)
D05	Rn.1011	NM_031151	Mdh2	Malate dehydrogenase 2, NAD (mitochondrial)
D06	Rn.38202	NM_001106062	Ogdhl	Oxoglutarate dehydrogenase-like
D07	Rn.11094	NM_012744	Pc	Pyruvate carboxylase
D08	Rn.104376	NM_198780	Pck1	Phosphoenolpyruvate carboxykinase 1 (soluble)
D09	Rn.35508	NM_001108377	Pck2	Phosphoenolpyruvate carboxykinase 2 (mitochondrial)
D10	Rn.11126	NM_053994	Pdha2	Pyruvate dehydrogenase (lipoamide) alpha 2
D11	Rn.102424	NM_001007620	Pdhb	Pyruvate dehydrogenase (lipoamide) beta
D12	Rn.2260	NM_001044242	Pdhx	Pyruvate dehydrogenase complex, component X
E01	Rn.11185	NM_053826	Pdk1	Pyruvate dehydrogenase kinase, isozyme 1
E02	Rn.88597	NM_030872	Pdk2	Pyruvate dehydrogenase kinase, isozyme 2
E03	Rn.18101	NM_001106581	Pdk3	Pyruvate dehydrogenase kinase, isozyme 3
E04	Rn.30070	NM_053551	Pdk4	Pyruvate dehydrogenase kinase, isozyme 4
E05	Rn.220381	NM_145091	Pdp2	Pyruvate dehyrogenase phosphatase catalytic subunit 2
E06	Rn.21088	NM_001107430	Pdpr	Pyruvate dehydrogenase phosphatase regulatory subunit
E07	Rn.4212	NM_013190	Pfkl	Phosphofructokinase, liver
E08	Rn.9738	NM_017328	Pgam2	Phosphoglycerate mutase 2 (muscle)

Position	UniGene	GenBank	Symbol	Description
E09	Rn.108127	NM_053291	Pgk1	Phosphoglycerate kinase 1
E10	Rn.50944	NM_001012130	Pgk2	Phosphoglycerate kinase 2
E11	Rn.19855	NM_001106066	Pgls	6-phosphogluconolactonase
E12	Rn.9970	NM_017033	Pgm1	Phosphoglucomutase 1
F01	Rn.203347	NM_001106007	Pgm2	Phosphoglucomutase 2
F02	Rn.24236	NM_001108772	Pgm3	Phosphoglucomutase 3
F03	Rn.48743	NM_022626	Phka1	Phosphorylase kinase, alpha 1
F04	Rn.212212	NM_001014152	Phkb	Phosphorylase kinase, beta
F05	Rn.10399	NM_031573	Phkg1	Phosphorylase kinase, gamma 1
F06	Rn.11153	NM_080584	Phkg2	Phosphorylase kinase, gamma 2 (testis)
F07	Rn.48821	NM_012624	Pklr	Pyruvate kinase, liver and RBC
F08	Rn.9761	NM_017243	Prps1	Phosphoribosyl pyrophosphate synthetase 1
F09	Rn.218454	NM_001105678	Prps1l1	Phosphoribosyl pyrophosphate synthetase 1-like 1
F10	Rn.21399	NM_022268	Pygl	Phosphorylase, glycogen, liver
F11	Rn.11238	NM_012638	Pygm	Phosphorylase, glycogen, muscle
F12	Rn.145214	NM_001108703	Rbks	Ribokinase
G01	Rn.12446	NM_001108632	Rpia	Ribose 5-phosphate isomerase A
G02	Rn.101725	NM_130428	Sdha	Succinate dehydrogenase complex, subunit A, flavoprotein (Fp)
G03	Rn.3902	NM_001100539	Sdhb	Succinate dehydrogenase complex, subunit B, iron sulfur (Ip)
G04	Rn.1698	NM_001005534	Sdhc	Succinate dehydrogenase complex, subunit C, integral membrane protein
G05	Rn.3040	NM_198788	Sdhd	Succinate dehydrogenase complex, subunit D, integral membrane protein
G06	Rn.62159	NM_001108387	Sucla2	Succinate-CoA ligase, ADP-forming, beta subunit
G07	Rn.3766	NM_053752	Suclg1	Succinate-CoA ligase, alpha subunit
G08	Rn.202591	NM_001100750	Suclg2	Succinate-CoA ligase, GDP-forming, beta subunit
G09	Rn.3136	NM_031811	Taldo1	Transaldolase 1
G10	Rn.5950	NM_022592	Tkt	Transketolase
G11	Rn.37838	NM_022922	Tpi1	Triosephosphate isomerase 1
G12	Rn.3415	NM_001024743	Ugp2	UDP-glucose pyrophosphorylase 2
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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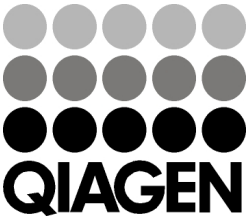

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