

RT² Profiler PCR Array (Rotor-Gene® Format)

Chinese Hamster Ovary (CHO) Cell Mitochondria

Cat. no. 330231 PAJJ-087ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

Description

The Chinese Hamster Ovary (CHO) Cell Mitochondria RT² Profiler PCR Array profiles the expression of 84 genes involved in the biogenesis and function of the cell's powerhouse organelle. The genes monitored by this array include regulators and mediators of mitochondrial molecular transport of not only the metabolites needed for the electron transport chain and oxidative phosphorylation, but also the ions required for maintaining the mitochondrial membrane polarization and potential important for ATP synthesis. Metabolism and energy production are not the only functions of mitochondria. Intrinsic apoptosis pathway genes activated by intracellular damage signaling are also represented on this array. Despite the mitochondrion's origins and its chromosome, the cellular genomic DNA encodes most of the proteins essential for mitochondrial replication and function. Therefore, this array's genes also target and translocate previously translated and folded proteins across and/or into the outer and/or inner mitochondrial membranes and even into the mitochondrial matrix. A set of controls present on each array enables data analysis using the $\Delta\Delta CT$ method of relative quantification, assessment of reverse transcription performance, genomic DNA contamination, and PCR performance. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in the diverse cellular functions of mitochondrial biology 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.



Sample & Assay Technologies

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	N/A	XM_003499886	Aifm2	Apoptosis-inducing factor, mitochondrion-associated 2
A02	N/A	XM_003502824	Aifm3	Apoptosis-inducing factor, mitochondrion-associated 3
A03	N/A	XM_003509931	Aip	Aryl-hydrocarbon receptor-interacting protein
A04	N/A	NM_001246795	Bak1	BCL2-antagonist/killer 1
A05	N/A	NM_001246798	Bcl2l1	BCL2-like 1
A06	N/A	XM_003500773	Caveolin-2	Caveolin-2-like
A07	N/A	XM_003496373	Cox10	COX10 homolog, cytochrome c oxidase assembly protein, heme A: farnesyltransferase (yeast)
A08	N/A	XM_003512385	Cox15	COX15 homolog, cytochrome c oxidase assembly protein (yeast)
A09	N/A	XM_003515459	Cpt1b	Carnitine palmitoyltransferase 1b, muscle
A10	N/A	XM_003495731	Cpt2	Carnitine palmitoyltransferase 2
A11	N/A	NM_001246714	Fis1	Fission 1 (mitochondrial outer membrane) homolog (yeast)
A12	N/A	NM_001246821	Hsp90a	Heat shock protein 90A
B01	N/A	XM_003504341	Hspd1	Heat shock protein 1 (chaperonin)
B02	N/A	XM_003503891	Immt	Inner membrane protein, mitochondrial
B03	N/A	XM_003513758	LOC100750530	Glutamate--cysteine ligase regulatory subunit-like
B04	N/A	XM_003506278	LOC100750700	Solute carrier family 25 member 40-like
B05	N/A	XM_003513346	LOC100750819	Dynamin-1-like protein-like
B06	N/A	XM_003503732	LOC100752019	Glutamate--cysteine ligase catalytic subunit-like
B07	N/A	XM_003505464	LOC100752231	Mitochondrial import receptor subunit TOM40 homolog
B08	N/A	XM_003507779	LOC100753651	Peroxisome proliferator-activated receptor gamma coactivator 1-alpha-like
B09	N/A	XM_003512263	LOC100753867	Dynamin-1-like
B10	N/A	XM_003505722	LOC100754606	BH3-interacting domain death agonist-like
B11	N/A	XM_003507023	LOC100755393	Phorbol-12-myristate-13-acetate-induced protein 1-like
B12	N/A	XM_003498859	LOC100755745	Mitochondrial import inner membrane translocase subunit Tim17-A-like
C01	N/A	XM_003510848	LOC100756185	Solute carrier family 25 member 46-like
C02	N/A	XM_003503744	LOC100756441	Solute carrier family 25 member 48-like
C03	N/A	XM_003509077	LOC100756764	Mitofusin-1-like
C04	N/A	XM_003502258	LOC100757021	Mitochondrial-processing peptidase subunit beta-like
C05	N/A	XM_003505944	LOC100757130	Solute carrier family 25 member 38-like
C06	N/A	XM_003506158	LOC100757332	Mitochondrial import inner membrane translocase subunit Tim10-like
C07	N/A	XM_003498333	LOC100757389	Metaxin-2-like
C08	N/A	XM_003504571	LOC100757417	Mitochondrial import receptor subunit TOM34-like
C09	N/A	XM_003504878	LOC100758190	Mitochondrial import receptor subunit TOM70-like
C10	N/A	XM_003511768	LOC100758689	Mitochondrial uncoupling protein 3-like
C11	N/A	XM_003512275	LOC100758692	Tafazzin-like

Position	UniGene	GenBank	Symbol	Description
C12	N/A	XM_003498260	LOC100758725	Cytochrome c oxidase assembly protein COX16 homolog, mitochondrial-like
D01	N/A	XM_003506236	LOC100758774	Mitochondrial import inner membrane translocase subunit TIM44-like
D02	N/A	XM_003511769	LOC100758980	Mitochondrial uncoupling protein 2-like
D03	N/A	XM_003512859	LOC100759766	Mitochondrial import inner membrane translocase subunit Tim9 B-like
D04	N/A	XM_003507569	LOC100760320	Superoxide dismutase [Mn], mitochondrial-like
D05	N/A	XM_003497171	LOC100760373	Solute carrier family 25 member 35-like
D06	N/A	XM_003515626	LOC100760675	Mitochondrial import inner membrane translocase subunit Tim9-like
D07	N/A	XM_003496221	LOC100761521	Leucine-rich PPR motif-containing protein, mitochondrial-like
D08	N/A	XM_003496800	LOC100761619	Mitochondrial import receptor subunit TOM20 homolog
D09	N/A	XM_003506720	LOC100762051	Mitochondrial import inner membrane translocase subunit Tim22-like
D10	N/A	XM_003505098	LOC100762818	Mitochondrial import inner membrane translocase subunit Tim17-B-like
D11	N/A	XM_003509376	LOC100763991	Interferon alpha-inducible protein 6-like
D12	N/A	XM_003495495	LOC100764208	Solute carrier family 25 member 36-like
E01	N/A	XM_003508832	LOC100764983	Cyclin-dependent kinase inhibitor 2A, isoforms 1/2/3-like
E02	N/A	XM_003495574	LOC100765091	Superoxide dismutase [Cu-Zn]-like
E03	N/A	XM_003497564	LOC100766368	Mitochondrial inner membrane protease subunit 1-like
E04	N/A	XM_003514537	LOC100767144	Solute carrier family 25 member 45-like
E05	N/A	XM_003499182	LOC100767547	Mitochondrial inner membrane protease ATP23 homolog
E06	N/A	XM_003496612	LOC100768386	GrpE protein homolog 1, mitochondrial-like
E07	N/A	XM_003508027	LOC100768847	Translocator protein-like
E08	N/A	XM_003495305	LOC100768872	Mitochondrial import inner membrane translocase subunit Tim23-like
E09	N/A	XM_003507067	LOC100769017	Cytochrome c oxidase assembly protein COX19-like
E10	N/A	XM_003498742	Akt1	V-akt murine thymoma viral oncogene homolog 1
E11	N/A	XM_003511021	LOC100769798	Solute carrier family 25 member 33-like
E12	N/A	XM_003506872	LOC100769989	Mitochondrial import receptor subunit TOM40B-like
F01	N/A	XM_003515132	LOC100771069	Solute carrier family 25 member 34-like
F02	N/A	XM_003503722	LOC100771881	Solute carrier family 25 member 47-like
F03	N/A	XM_003502157	LOC100772445	Mitochondrial import inner membrane translocase subunit Tim8 B-like
F04	N/A	XM_003511935	Ucp1	Uncoupling protein 1 (mitochondrial, proton carrier)
F05	N/A	XM_003503854	LOC100773512	Mitochondrial import inner membrane translocase subunit TIM50-like
F06	N/A	XM_003509467	LOC100774120	Mitochondrial import receptor subunit TOM22 homolog
F07	N/A	XM_003514395	Mfn2	Mitofusin 2
F08	N/A	XM_003500501	Mipep	Mitochondrial intermediate peptidase
F09	N/A	XM_003501578	Msto1	Misato homolog 1 (Drosophila)
F10	N/A	XM_003496188	Nefl	Neurofilament, light polypeptide
F11	N/A	XM_003507775	Opa1	Optic atrophy 1 homolog (human)
F12	N/A	NM_001243976	P53	P53 tumor suppressor
G01	N/A	XM_003495785	Rhot1	Ras homolog gene family, member T1
G02	N/A	XM_003501521	Rhot2	Ras homolog gene family, member T2
G03	N/A	XM_003514293	Sh3glb1	SH3-domain GRB2-like B1 (endophilin)
G04	N/A	XM_003495954	Slc25a12	Solute carrier family 25 (mitochondrial carrier, Aralar), member 12
G05	N/A	XM_003498974	Slc25a14	Solute carrier family 25 (mitochondrial carrier, brain), member 14

Position	UniGene	GenBank	Symbol	Description
G06	N/A	XM_003509764	Slc25a22	Solute carrier family 25 (mitochondrial carrier, glutamate), member 22
G07	N/A	XM_003512578	Slc25a24	Solute carrier family 25 (mitochondrial carrier, phosphate carrier), member 24
G08	N/A	XM_003509494	Slc25a3	Solute carrier family 25 (mitochondrial carrier, phosphate carrier), member 3
G09	N/A	XM_003504501	Slc25a39	Solute carrier family 25, member 39
G10	N/A	XM_003499134	Slc25a42	Solute carrier family 25, member 42
G11	N/A	XM_003502916	Slc25a44	Solute carrier family 25, member 44
G12	N/A	XM_003499584	Stard3	START domain containing 3
H01	N/A	NM_001244575	Actb	Actin, beta
H02	N/A	XM_003497123	Actr5	ARP5 actin-related protein 5 homolog (yeast)
H03	N/A	NM_001246674	B2m	Beta-2 microglobulin
H04	N/A	NM_001244854	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H05	N/A	XM_003503017	LOC100769768	Hypoxanthine-guanine phosphoribosyltransferase-like
H06	N/A	SA_00519	JGDC	Hamster 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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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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