

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

Rat Mitochondria

Cat. no. 330231 PARN-087ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² 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
RT ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm® BioMark™



Sample & Assay Technologies

Description

The Rat 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. Using real-time PCR, you 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 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	Aifm2	Aip	Akt1	Bak1	Bbc3	Bcl2	Bcl2l1	Bid	Bnip3	Cav2	Cdkn2a	Cln8
B	Cox18	Cpt1b	Cpt2	Dnm1l	Fis1	Fxc1	Gclc	Gclm	Gpx1	Grpel1	Hsp90aa1	Hspd1
C	Imp1l	LOC691853	Mfn1	Mfn2	Mipep	Msto1	Mtx2	Nefl	Opa1	Pmaip1	Ppargc1a	Rhot2
D	Rnf135	Sfn	Sh3glb1	Slc25a10	Slc25a12	Slc25a13	Slc25a14	Slc25a15	Slc25a16	Slc25a17	Slc25a19	Slc25a2
E	Slc25a20	Slc25a21	Slc25a22	Slc25a23	Slc25a24	Slc25a25	Slc25a27	Slc25a3	Slc25a30	Slc25a36	Slc25a37	Slc25a4
F	Slc25a5	Sod1	Sod2	Stard3	Taz	Timm10	Timm17a	Timm17b	Timm22	Timm44	Timm8a1	Timm8b
G	Timm9	Tomm22	Tomm34	Tomm40	Tomm40b	Tomm70a	Tp53	Tspo	Ucp1	Ucp2	Ucp3	Uxt
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.1357	NM_001139483	Aifm2	Apoptosis-inducing factor, mitochondrion-associated 2
A02	Rn.95160	NM_172327	Aip	Aryl-hydrocarbon receptor-interacting protein
A03	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A04	Rn.14598	NM_053812	Bak1	BCL2-antagonist/killer 1
A05	Rn.25176	NM_173837	Bbc3	Bcl-2 binding component 3
A06	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
A07	Rn.10323	NM_031535	Bcl2l1	Bcl2-like 1
A08	Rn.31142	NM_022684	Bid	BH3 interacting domain death agonist
A09	Rn.2060	NM_053420	Bnip3	BCL2/adenovirus E1B interacting protein 3
A10	Rn.81070	NM_131914	Cav2	Caveolin 2
A11	Rn.48717	NM_031550	Cdkn2a	Cyclin-dependent kinase inhibitor 2A
A12	Rn.1924	NM_001007686	Cln8	Ceroid-lipofuscinosis, neuronal 8
B01	Rn.24568	NM_001106000	Cox18	COX18 cytochrome c oxidase assembly homolog (S. cerevisiae)
B02	Rn.6028	NM_013200	Cpt1b	Carnitine palmitoyltransferase 1b, muscle
B03	Rn.11389	NM_012930	Cpt2	Carnitine palmitoyltransferase 2
B04	Rn.216851	NM_053655	Dnm1l	Dynamin 1-like
B05	Rn.1298	NM_001105919	Fis1	Fission 1 (mitochondrial outer membrane) homolog (S. cerevisiae)
B06	Rn.13451	NM_053371	Fxc1	Fractured callus expressed transcript 1
B07	Rn.8365	NM_012815	Gclc	Glutamate-cysteine ligase, catalytic subunit
B08	Rn.2460	NM_017305	Gclm	Glutamate cysteine ligase, modifier subunit
B09	Rn.11323	NM_030826	Gpx1	Glutathione peroxidase 1
B10	Rn.10630	NM_024487	Grpel1	GrpE-like 1, mitochondrial
B11	Rn.119867	NM_175761	Hsp90aa1	Heat shock protein 90, alpha (cytosolic), class A member 1
B12	Rn.102058	NM_022229	Hspd1	Heat shock protein 1 (chaperonin)
C01	Rn.6180	XM_001076990	Imp1l	IMP1 inner mitochondrial membrane peptidase-like (S. cerevisiae)
C02	Rn.76594	XM_001079869	LOC691853	Similar to COX10 homolog, cytochrome c oxidase assembly protein, heme A: farnesyltransferase
C03	Rn.160939	NM_138976	Mfn1	Mitofusin 1
C04	Rn.8570	NM_130894	Mfn2	Mitofusin 2
C05	Rn.2266	NM_031052	Mipep	Mitochondrial intermediate peptidase
C06	Rn.26620	NM_001106443	Msto1	Misato homolog 1 (Drosophila)
C07	Rn.24607	NM_001008286	Mtx2	Metaxin 2
C08	Rn.18568	NM_031783	Nefl	Neurofilament, light polypeptide
C09	Rn.9783	NM_133585	Opa1	Optic atrophy 1 homolog (human)
C10	Rn.163380	NM_001008385	Pmaip1	Phorbol-12-myristate-13-acetate-induced protein 1
C11	Rn.19172	NM_031347	Ppargc1a	Peroxisome proliferator-activated receptor gamma, coactivator 1 alpha
C12	Rn.8882	NM_181823	Rhot2	Ras homolog gene family, member T2
D01	Rn.7462	NM_001012010	Rnf135	Ring finger protein 135
D02	Rn.145079	XM_232745	Sfn	Stratifin
D03	Rn.203013	NM_001011929	Sh3glb1	SH3-domain GRB2-like endophilin B1
D04	Rn.3631	NM_133418	Slc25a10	Solute carrier family 25 (mitochondrial carrier; dicarboxylate transporter), member 10
D05	Rn.220164	XM_002726186	Slc25a12	Solute carrier family 25 (mitochondrial carrier, Aralar), member 12
D06	Rn.14686	XM_342640	Slc25a13	Solute carrier family 25, member 13 (citrin)
D07	Rn.15006	NM_053501	Slc25a14	Solute carrier family 25 (mitochondrial carrier, brain), member 14

Position	UniGene	GenBank	Symbol	Description
D08	Rn.163331	NM_001047880	Slc25a15	Solute carrier family 25 (mitochondrial carrier; ornithine transporter) member 15
D09	Rn.21448	NM_001100860	Slc25a16	Solute carrier family 25 (mitochondrial carrier, Graves disease autoantigen), member 16
D10	Rn.94733	NM_001126269	Slc25a17	Solute carrier family 25 (mitochondrial carrier, peroxisomal membrane protein), member 17
D11	Rn.198914	NM_001007674	Slc25a19	Solute carrier family 25 (mitochondrial thiamine pyrophosphate carrier), member 19
D12	Rn.218546	NM_001106152	Slc25a2	Solute carrier family 25 (mitochondrial carrier, ornithine transporter) member 2
E01	Rn.3289	NM_053965	Slc25a20	Solute carrier family 25 (carnitine/acylcarnitine translocase), member 20
E02	Rn.205044	NM_133614	Slc25a21	Solute carrier family 25 (mitochondrial oxodicarboxylate carrier), member 21
E03	Rn.98367	NM_001014027	Slc25a22	Solute carrier family 25 (mitochondrial carrier, glutamate), member 22
E04	Rn.41	NM_001106873	Slc25a23	Solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 23
E05	Rn.98927	NM_001127544	Slc25a24	Solute carrier family 25 (mitochondrial carrier, phosphate carrier), member 24
E06	Rn.17644	NM_145677	Slc25a25	Solute carrier family 25 (mitochondrial carrier, phosphate carrier), member 25
E07	Rn.163043	NM_053500	Slc25a27	Solute carrier family 25, member 27
E08	Rn.3606	NM_139100	Slc25a3	Solute carrier family 25 (mitochondrial carrier, phosphate carrier), member 3
E09	Rn.19440	NM_001013187	Slc25a30	Solute carrier family 25, member 30
E10	Rn.17305	XM_576451	Slc25a36	Solute carrier family 25, member 36
E11	Rn.102664	NM_001013996	Slc25a37	Solute carrier family 25, member 37
E12	Rn.4092	NM_053515	Slc25a4	Solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 4
F01	Rn.102263	NM_057102	Slc25a5	Solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 5
F02	Rn.6059	NM_017050	Sod1	Superoxide dismutase 1, soluble
F03	Rn.10488	NM_017051	Sod2	Superoxide dismutase 2, mitochondrial
F04	Rn.145430	NM_001014229	Stard3	STAR-related lipid transfer (START) domain containing 3
F05	Rn.7267	NM_001025748	Taz	Tafazzin
F06	Rn.8106	NM_172074	Timm10	Translocase of inner mitochondrial membrane 10 homolog (yeast)
F07	Rn.22514	NM_019351	Timm17a	Translocase of inner mitochondrial membrane 17 homolog A (yeast)
F08	Rn.17528	NM_001108249	Timm17b	Translocase of inner mitochondrial membrane 17 homolog B (yeast)
F09	Rn.41817	XM_340856	Timm22	Translocase of inner mitochondrial membrane 22 homolog (yeast)
F10	Rn.10801	NM_017267	Timm44	Translocase of inner mitochondrial membrane 44 homolog (yeast)
F11	Rn.162342	NM_053370	Timm8a1	Translocase of inner mitochondrial membrane 8 homolog a1 (yeast)
F12	Rn.3792	NM_022541	Timm8b	Translocase of inner mitochondrial membrane 8 homolog b (yeast)
G01	Rn.8459	XM_001072892	Timm9	Translocase of inner mitochondrial membrane 9 homolog (yeast)
G02	Rn.3119	NM_212514	Tomm22	Translocase of outer mitochondrial membrane 22 homolog (yeast)
G03	Rn.16749	NM_001044244	Tomm34	Translocase of outer mitochondrial membrane 34
G04	Rn.17999	NM_212520	Tomm40	Translocase of outer mitochondrial membrane 40 homolog (yeast)
G05	Rn.113744	NM_001083338	Tomm40b	Translocase of outer mitochondrial membrane 40 homolog B (yeast)
G06	Rn.162009	NM_212519	Tomm70a	Translocase of outer mitochondrial membrane 70 homolog A (S. cerevisiae)
G07	Rn.54443	NM_030989	Tp53	Tumor protein p53
G08	Rn.1820	NM_012515	Tspo	Translocator protein
G09	Rn.10281	NM_012682	Ucp1	Uncoupling protein 1 (mitochondrial, proton carrier)
G10	Rn.13333	NM_019354	Ucp2	Uncoupling protein 2 (mitochondrial, proton carrier)
G11	Rn.9902	NM_013167	Ucp3	Uncoupling protein 3 (mitochondrial, proton carrier)
G12	Rn.203381	NM_001006982	Uxt	Ubiquitously expressed transcript
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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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
RT ² 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
RT ² 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.

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