

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

Mouse Cardiotoxicity

Cat. no. 330231 PAMM-095ZA

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 Mouse Cardiotoxicity RT² Profiler PCR Array profiles the expression of 84 key genes involved in drug and chemical-induced cardiac injury. Minimizing toxicity remains one of the major barriers to bringing a drug to and keeping a drug on the market. The fact that almost 10 percent of drugs in the past 40 years have been withdrawn from the clinical market worldwide due to cardiovascular safety concerns makes the heart an important target of toxicological studies. Identifying cardiotoxic drugs and other compounds is difficult because the mechanism of action behind cardiac responses remains unclear. However, using gross morphological changes as a phenotype often requires expensive and time-consuming chronic studies. Quantifiable gene expression changes occur upon acute exposure prior to other measured toxic responses, and their analysis has enhanced the field's understanding of these effects. This array includes potential biomarkers of cardiac damage from cited studies using a variety of drugs and chemicals in a number of model systems. Cardiotoxic drug candidates can be identified and eliminated from the pipeline early in the validation process by analyzing the expression of such genes, reducing experimental time and costs. The organization of genes by their predicted direction of expression change eases data analysis. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in cardiotoxicity 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	Abhd2	Abra	Acta1	Adra2a	Aifm1	Ak3	Ash1l	Atp5j	Bcat1	Bgn	Bsn	Btg2
B	Ccl7	Ccr1	Cd14	Cfd	Ch25h	Ckm	Col15a1	Col3a1	Creml	Csnk2a2	Dusp8	Egr1
C	Fcgr2b	Fhl1	Fosl1	Gja1	Gpm6a	Hamp	Hspa2	Hsph1	Ifi202	Igfbp5	Il6	Itpr2
D	Kbtbd10	Kbtbd5	Kcnj12	Mcm6	Mt1	Nexn	Nfib	Pdk4	Pkn2	Pla2g4a	Plau	Pin
E	Plunc	Postn	Ppbbp	Ppp1r14c	Prkab2	Psmc2	Psmc7	Pum2	Pvr	Rbm3	Reg3b	Rnd1
F	Rps6kb1	S1pr2	Serpine1	Sik1	Slc4a3	Sox4	Spp1	Tcf4	Tgfb2	Thrap3	Tiam1	Timp1
G	Tubb6	Txnip	Uba5	Ubxn2a	Uck2	Ucp1	Vcan	Vegfa	Vim	Wipi1	Zfp148	Zfp612
H	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.365490	NM_018811	Abhd2	Abhydrolase domain containing 2
A02	Mm.148913	NM_175456	Abra	Actin-binding Rho activating protein
A03	Mm.214950	NM_009606	Acta1	Actin, alpha 1, skeletal muscle
A04	Mm.235195	NM_007417	Adra2a	Adrenergic receptor, alpha 2a
A05	Mm.240434	NM_012019	Aifm1	Apoptosis-inducing factor, mitochondrion-associated 1
A06	Mm.196067	NM_021299	Ak3	Adenylate kinase 3
A07	Mm.130752	NM_138679	Ash1l	Ash1 (absent, small, or homeotic)-like (Drosophila)
A08	Mm.353	NM_016755	Atp5j	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit F
A09	Mm.4606	NM_007532	Bcat1	Branched chain aminotransferase 1, cytosolic
A10	Mm.2608	NM_007542	Bgn	Biglycan
A11	Mm.20425	NM_007567	Bsn	Bassoon
A12	Mm.392646	NM_007570	Btg2	B-cell translocation gene 2, anti-proliferative
B01	Mm.341574	NM_013654	Ccl7	Chemokine (C-C motif) ligand 7
B02	Mm.274927	NM_009912	Ccr1	Chemokine (C-C motif) receptor 1
B03	Mm.3460	NM_009841	Cd14	CD14 antigen
B04	Mm.4407	NM_013459	Cfd	Complement factor D (adipsin)
B05	Mm.30824	NM_009890	Ch25h	Cholesterol 25-hydroxylase
B06	Mm.2375	NM_007710	Ckm	Creatine kinase, muscle
B07	Mm.233547	NM_009928	Col15a1	Collagen, type XV, alpha 1
B08	Mm.249555	NM_009930	Col3a1	Collagen, type III, alpha 1
B09	Mm.5244	NM_013498	Creml	CAMP responsive element modulator
B10	Mm.440348	NM_009974	Csnk2a2	Casein kinase 2, alpha prime polypeptide
B11	Mm.39725	NM_008748	Dusp8	Dual specificity phosphatase 8
B12	Mm.181959	NM_007913	Egr1	Early growth response 1
C01	Mm.425062	NM_010187	Fcgr2b	Fc receptor, IgG, low affinity IIb
C02	Mm.3126	NM_010211	Fhl1	Four and a half LIM domains 1
C03	Mm.6215	NM_010235	Fosl1	Fos-like antigen 1
C04	Mm.378921	NM_010288	Gja1	Gap junction protein, alpha 1
C05	Mm.241700	NM_153581	Gpm6a	Glycoprotein m6a
C06	Mm.439939	NM_032541	Hamp	Hepcidin antimicrobial peptide
C07	Mm.296181	NM_008301	Hspa2	Heat shock protein 2
C08	Mm.270681	NM_013559	Hsph1	Heat shock 105kDa/110kDa protein 1
C09	Mm.358671	NM_018854	Ifi202	Intraflagellar transport 20 homolog (Chlamydomonas)
C10	Mm.405761	NM_010518	Igfbp5	Insulin-like growth factor binding protein 5
C11	Mm.1019	NM_031168	Il6	Interleukin 6
C12	Mm.393003	NM_019923	Itpr2	Inositol 1,4,5-triphosphate receptor 2
D01	Mm.178784	NM_001081087	Kbtbd10	Kelch repeat and BTB (POZ) domain containing 10
D02	Mm.45734	NM_028202	Kbtbd5	Kelch repeat and BTB (POZ) domain containing 5
D03	Mm.4970	NM_010603	Kcnj12	Potassium inwardly-rectifying channel, subfamily J, member 12
D04	Mm.4933	NM_008567	Mcm6	Minichromosome maintenance deficient 6 (MIS5 homolog, S. pombe) (S. cerevisiae)
D05	Mm.192991	NM_013602	Mt1	Metallothionein 1
D06	Mm.200188	NM_199465	Nexn	Nexilin
D07	Mm.317947	NM_008687	Nfib	Nuclear factor I/B
D08	Mm.235547	NM_013743	Pdk4	Pyruvate dehydrogenase kinase, isoenzyme 4

Position	UniGene	GenBank	Symbol	Description
D09	Mm.244236	NM_178654	Pkn2	Protein kinase N2
D10	Mm.4186	NM_008869	Pla2g4a	Phospholipase A2, group IVA (cytosolic, calcium-dependent)
D11	Mm.4183	NM_008873	Plau	Plasminogen activator, urokinase
D12	Mm.34145	NM_023129	Pln	Phospholamban
E01	Mm.268852	NM_011126	Plunc	Palate, lung, and nasal epithelium associated
E02	Mm.236067	NM_015784	Postn	Periostin, osteoblast specific factor
E03	Mm.293614	NM_023785	Ppbp	Pro-platelet basic protein
E04	Mm.308126	NM_133485	Ppp1r14c	Protein phosphatase 1, regulatory (inhibitor) subunit 14c
E05	Mm.31175	NM_182997	Prkab2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
E06	Mm.252255	NM_008944	Psm2	Proteasome (prosome, macropain) subunit, alpha type 2
E07	Mm.18347	NM_010817	Psm7	Proteasome (prosome, macropain) 26S subunit, non-ATPase, 7
E08	Mm.341243	NM_030723	Pum2	Pumilio 2 (Drosophila)
E09	Mm.227506	NM_027514	Pvr	Poliavirus receptor
E10	Mm.128512	NM_016809	Rbm3	RNA binding motif protein 3
E11	Mm.2553	NM_011036	Reg3b	Regenerating islet-derived 3 beta
E12	Mm.274010	NM_172612	Rnd1	Rho family GTPase 1
F01	Mm.394280	NM_028259	Rps6kb1	Ribosomal protein S6 kinase, polypeptide 1
F02	Mm.46493	NM_010333	S1pr2	Sphingosine-1-phosphate receptor 2
F03	Mm.250422	NM_008871	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
F04	Mm.290941	NM_010831	Sik1	Salt inducible kinase 1
F05	Mm.5053	NM_009208	Slc4a3	Solute carrier family 4 (anion exchanger), member 3
F06	Mm.240627	NM_009238	Sox4	SRY-box containing gene 4
F07	Mm.288474	NM_009263	Spp1	Secreted phosphoprotein 1
F08	Mm.4269	NM_013685	Tcf4	Transcription factor 4
F09	Mm.18213	NM_009367	Tgfb2	Transforming growth factor, beta 2
F10	Mm.236211	NM_146153	Thrap3	Thyroid hormone receptor associated protein 3
F11	Mm.124100	NM_009384	Tiam1	T-cell lymphoma invasion and metastasis 1
F12	Mm.8245	NM_011593	Timp1	Tissue inhibitor of metalloproteinase 1
G01	Mm.181860	NM_026473	Tubb6	Tubulin, beta 6
G02	Mm.410189	NM_023719	Txnip	Thioredoxin interacting protein
G03	Mm.224935	NM_025692	Uba5	Ubiquitin-like modifier activating enzyme 5
G04	Mm.259170	NM_145441	Ubx2a	UBX domain protein 2A
G05	Mm.280895	NM_030724	Uck2	Uridine-cytidine kinase 2
G06	Mm.4177	NM_009463	Ucp1	Uncoupling protein 1 (mitochondrial, proton carrier)
G07	Mm.158700	NM_001081249	Vcan	Versican
G08	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
G09	Mm.268000	NM_011701	Vim	Vimentin
G10	Mm.35817	NM_145940	Wipi1	WD repeat domain, phosphoinositide interacting 1
G11	Mm.392667	NM_011749	Zfp148	Zinc finger protein 148
G12	Mm.87487	NM_175480	Zfp612	Zinc finger protein 612
H01	Mm.328431	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H05	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90 alpha (cytosolic), class B member 1
H06	N/A	SA_00106	MGDC	Mouse 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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