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

Human Cardiotoxicity

Cat. no. 330231 PAHS-095ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² 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
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Human 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 The fact that almost 10 percent of drugs in the past 40 years have been withdrawn from the clinical market worldwide due to cardiovascular safety concerns makes the heart an important target of toxicological studies.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	CREM	CSNK2A2	DUSP8	EGR1
C	FCGR2B	FHL1	FOSL1	GJA1	GPM6A	HAMP	HSPA2	HSPH1	IFT20	IGFBP5	IL6	ITPR2
D	KBTBD10	KBTBD5	KCNJ12	MCM6	MT1F	NEXN	NFIB	PDK4	PKN2	PLA2G4A	PLAU	PLN
E	PLUNC	POSTN	PPBP	PPP1R14C	PRKAB2	PSMA2	PSMD7	PUM2	PVR	RBM3	REG3G	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	ZNF148	ZNF23
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.122337	NM_007011	ABHD2	Abhydrolase domain containing 2
A02	Hs.374668	NM_139166	ABRA	Actin-binding Rho activating protein
A03	Hs.1288	NM_001100	ACTA1	Actin, alpha 1, skeletal muscle
A04	Hs.249159	NM_000681	ADRA2A	Adrenergic, alpha-2A-, receptor
A05	Hs.424932	NM_004208	AIFM1	Apoptosis-inducing factor, mitochondrion-associated, 1
A06	Hs.10862	NM_001199852	AK3	Adenylate kinase 3
A07	Hs.491060	NM_018489	ASH1L	Ash1 (absent, small, or homeotic)-like (Drosophila)
A08	Hs.246310	NM_001685	ATP5J	ATP synthase, H+ transporting, mitochondrial Fo complex, subunit F6
A09	Hs.438993	NM_005504	BCAT1	Branched chain amino-acid transaminase 1, cytosolic
A10	Hs.821	NM_001711	BGN	Biglycan
A11	Hs.194684	NM_003458	BSN	Bassoon (presynaptic cytomatrix protein)
A12	Hs.519162	NM_006763	BTG2	BTG family, member 2
B01	Hs.251526	NM_006273	CCL7	Chemokine (C-C motif) ligand 7
B02	Hs.301921	NM_001295	CCR1	Chemokine (C-C motif) receptor 1
B03	Hs.163867	NM_000591	CD14	CD14 molecule
B04	Hs.155597	NM_001928	CFD	Complement factor D (adipsin)
B05	Hs.47357	NM_003956	CH25H	Cholesterol 25-hydroxylase
B06	Hs.334347	NM_001824	CKM	Creatine kinase, muscle
B07	Hs.409034	NM_001855	COL15A1	Collagen, type XV, alpha 1
B08	Hs.443625	NM_000090	COL3A1	Collagen, type III, alpha 1
B09	Hs.200250	NM_183011	CREM	CAMP responsive element modulator
B10	Hs.82201	NM_001896	CSNK2A2	Casein kinase 2, alpha prime polypeptide
B11	Hs.41688	NM_004420	DUSP8	Dual specificity phosphatase 8
B12	Hs.326035	NM_001964	EGR1	Early growth response 1
C01	Hs.654395	NM_004001	FCGR2B	Fc fragment of IgG, low affinity IIb, receptor (CD32)
C02	Hs.435369	NM_001449	FHL1	Four and a half LIM domains 1
C03	Hs.283565	NM_005438	FOSL1	FOS-like antigen 1
C04	Hs.74471	NM_000165	GJA1	Gap junction protein, alpha 1, 43kDa
C05	Hs.75819	NM_201591	GPM6A	Glycoprotein M6A
C06	Hs.8821	NM_021175	HAMP	Hepcidin antimicrobial peptide
C07	Hs.728938	NM_021979	HSPA2	Heat shock 70kDa protein 2
C08	Hs.36927	NM_006644	HSPH1	Heat shock 105kDa/110kDa protein 1
C09	Hs.705431	NM_174887	IFT20	Intraflagellar transport 20 homolog (Chlamydomonas)
C10	Hs.607212	NM_000599	IGFBP5	Insulin-like growth factor binding protein 5
C11	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
C12	Hs.512235	NM_002223	ITPR2	Inositol 1,4,5-trisphosphate receptor, type 2
D01	Hs.50550	NM_006063	KBTBD10	Kelch repeat and BTB (POZ) domain containing 10
D02	Hs.350288	NM_152393	KBTBD5	Kelch repeat and BTB (POZ) domain containing 5
D03	Hs.200629	NM_021012	KCNJ12	Potassium inwardly-rectifying channel, subfamily J, member 12
D04	Hs.444118	NM_005915	MCM6	Minichromosome maintenance complex component 6
D05	Hs.513626	NM_005949	MT1F	Metallothionein 1F
D06	Hs.632387	NM_144573	NEXN	Nexilin (F actin binding protein)
D07	Hs.644095	NM_005596	NFIB	Nuclear factor I/B
D08	Hs.8364	NM_002612	PDK4	Pyruvate dehydrogenase kinase, isozyme 4
D09	Hs.440833	NM_006256	PKN2	Protein kinase N2

Position	UniGene	GenBank	Symbol	Description
D10	Hs.497200	NM_024420	PLA2G4A	Phospholipase A2, group IVA (cytosolic, calcium-dependent)
D11	Hs.77274	NM_002658	PLAU	Plasminogen activator, urokinase
D12	Hs.170839	NM_002667	PLN	Phospholamban
E01	Hs.211092	NM_016583	PLUNC	Palate, lung and nasal epithelium associated
E02	Hs.136348	NM_006475	POSTN	Periostin, osteoblast specific factor
E03	Hs.2164	NM_002704	PPBP	Pro-platelet basic protein (chemokine (C-X-C motif) ligand 7)
E04	Hs.486798	NM_030949	PPP1R14C	Protein phosphatase 1, regulatory (inhibitor) subunit 14C
E05	Hs.50732	NM_005399	PRKAB2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
E06	Hs.333786	NM_002787	PSMA2	Proteasome (prosome, macropain) subunit, alpha type, 2
E07	Hs.440604	NM_002811	PSMD7	Proteasome (prosome, macropain) 26S subunit, non-ATPase, 7
E08	Hs.467824	NM_015317	PUM2	Pumilio homolog 2 (Drosophila)
E09	Hs.171844	NM_006505	PVR	Poliovirus receptor
E10	Hs.301404	NM_006743	RBM3	RNA binding motif (RNP1, RRM) protein 3
E11	Hs.447084	NM_198448	REG3G	Regenerating islet-derived 3 gamma
E12	Hs.124940	NM_014470	RND1	Rho family GTPase 1
F01	Hs.463642	NM_003161	RPS6KB1	Ribosomal protein S6 kinase, 70kDa, polypeptide 1
F02	Hs.655405	NM_004230	S1PR2	Sphingosine-1-phosphate receptor 2
F03	Hs.414795	NM_000602	SERPINE1	Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
F04	Hs.282113	NM_173354	SIK1	Salt-inducible kinase 1
F05	Hs.1176	NM_005070	SLC4A3	Solute carrier family 4, anion exchanger, member 3
F06	Hs.643910	NM_003107	SOX4	SRY (sex determining region Y)-box 4
F07	Hs.313	NM_000582	SPP1	Secreted phosphoprotein 1
F08	Hs.644653	NM_003199	TCF4	Transcription factor 4
F09	Hs.133379	NM_003238	TGFB2	Transforming growth factor, beta 2
F10	Hs.160211	NM_005119	THRAP3	Thyroid hormone receptor associated protein 3
F11	Hs.517228	NM_003253	TIAM1	T-cell lymphoma invasion and metastasis 1
F12	Hs.522632	NM_003254	TIMP1	TIMP metallopeptidase inhibitor 1
G01	Hs.193491	NM_032525	TUBB6	Tubulin, beta 6
G02	Hs.533977	NM_006472	TXNIP	Thioredoxin interacting protein
G03	Hs.170737	NM_198329	UBA5	Ubiquitin-like modifier activating enzyme 5
G04	Hs.591576	NM_181713	UBXN2A	UBX domain protein 2A
G05	Hs.458360	NM_012474	UCK2	Uridine-cytidine kinase 2
G06	Hs.249211	NM_021833	UCP1	Uncoupling protein 1 (mitochondrial, proton carrier)
G07	Hs.643801	NM_004385	VCAN	Versican
G08	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
G09	Hs.642813	NM_003380	VIM	Vimentin
G10	Hs.463964	NM_017983	WIPI1	WD repeat domain, phosphoinositide interacting 1
G11	Hs.592591	NM_021964	ZNF148	Zinc finger protein 148
G12	Hs.656643	NM_145911	ZNF23	Zinc finger protein 23 (KOX 16)
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 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
RT² 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
RT² 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.

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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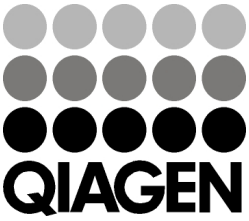

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