

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

Rat Hepatotoxicity

Cat. no. 330231 PARN-093ZA

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 Hepatotoxicity RT² Profiler PCR Array profiles the expression of 84 key genes implicated as potential biomarkers of liver toxicity. Minimizing toxicity remains one of the major barriers to bringing a drug to market. The crucial role of the liver in drug metabolism makes it one of the major organs evoking drug-related toxic responses and an important target of toxicological studies. Genes that consistently exhibit increased or decreased expression during these toxic responses in model systems serve as markers to predict potential adverse clinical outcomes. This array compiles the most relevant potential biomarkers for five major drug-induced hepatotoxic diseases including cholestasis, steatosis, phospholipidosis, non-genotoxic hepatocarcinogenicity and necrosis, as well as generalized hepatotoxicity. 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 hepatotoxic response 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	Abcb11	Abcb1a	Abcb4	Abcc2	Abcc3	Aldoa	Apex1	Asah1	Atp8b1	Avpr1a	Bhmt	Btg2
B	Car3	Casp3	Ccng1	Cd36	Cd68	Cdc14b	Cdkn1a	Col4a1	Cryl1	Cxcl12	Cyp1a2	Ddit4l
C	Ddx39	Dnajb11	Dnajc3	Fabp1	Fads1	Fam158a	Fasn	Fmo1	Fxc1	Gadd45a	Gclc	Gsr
D	Hao2	Hmox1	Hpn	Hyou1	Icam1	Igfals	Il6st	Ipo4	Krt18	Krt8	L2hgdh	Lgr5
E	Lpl	Lss	Maob	Map3k6	Mbl2	Mcm10	Mlxipl	Mrps18b	Nqo1	Nus1	Osmr	Ostalpa
F	Pdyn	Pla2g12a	Ppara	Psmc3	Pygl	Rb1	Rdx	RGD1310552	Rhbg	S100a8	Scd1	Serpina3n
G	Serpine1	Skil	Slc17a3	Slc2a3	Slc39a6	Srebfl	Tagln	Thrsp	Tmem2	Txnrd1	Wipil	Yrdc
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.14539	NM_031760	Abcb11	ATP-binding cassette, subfamily B (MDR/TAP), member 11
A02	Rn.154810	NM_133401	Abcb1a	ATP-binding cassette, sub-family B (MDR/TAP), member 1A
A03	Rn.82691	NM_012690	Abcb4	ATP-binding cassette, subfamily B (MDR/TAP), member 4
A04	Rn.10265	NM_012833	Abcc2	ATP-binding cassette, subfamily C (CFTR/MRP), member 2
A05	Rn.205054	NM_080581	Abcc3	ATP-binding cassette, subfamily C (CFTR/MRP), member 3
A06	Rn.1774	NM_012495	Aldoa	Aldolase A, fructose-bisphosphate
A07	Rn.5949	NM_024148	Apex1	APEX nuclease (multifunctional DNA repair enzyme) 1
A08	Rn.127798	NM_053407	Asah1	N-acylsphingosine amidohydrolase (acid ceramidase) 1
A09	Rn.6957	NM_001106140	Atp8b1	ATPase, Class I, type 8B, member 1
A10	Rn.32282	NM_053019	Avpr1a	Arginine vasopressin receptor 1A
A11	Rn.11406	NM_030850	Bhmt	Betaine-homocysteine methyltransferase
A12	Rn.27923	NM_017259	Btg2	BTG family, member 2
B01	Rn.1647	NM_019292	Car3	Carbonic anhydrase 3
B02	Rn.10562	NM_012922	Casp3	Caspase 3
B03	Rn.5834	NM_012923	Ccng1	Cyclin G1
B04	Rn.102418	NM_031561	Cd36	CD36 molecule (thrombospondin receptor)
B05	Rn.12478	NM_001031638	Cd68	Cd68 molecule
B06	Rn.162177	NM_001108404	Cdc14b	CDC14 cell division cycle 14 homolog B (S. cerevisiae)
B07	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B08	Rn.53801	NM_001135009	Col4a1	Collagen, type IV, alpha 1
B09	Rn.57632	NM_175757	Cryl1	Crystallin, lambda 1
B10	Rn.54439	NM_022177	Cxcl12	Chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1)
B11	Rn.5563	NM_012541	Cyp1a2	Cytochrome P450, family 1, subfamily a, polypeptide 2
B12	Rn.19672	NM_080399	Ddit4l	DNA-damage-inducible transcript 4-like
C01	Rn.161716	NM_053563	Ddx39	DEAD (Asp-Glu-Ala-Asp) box polypeptide 39
C02	Rn.14603	NM_001015021	Dnajb11	DnaJ (Hsp40) homolog, subfamily B, member 11
C03	Rn.162234	NM_022232	Dnajc3	DnaJ (Hsp40) homolog, subfamily C, member 3
C04	Rn.36412	NM_012556	Fabp1	Fatty acid binding protein 1, liver
C05	Rn.28161	NM_053445	Fads1	Fatty acid desaturase 1
C06	Rn.163298	NM_001008296	Fam158a	Family with sequence similarity 158, member A
C07	Rn.9486	NM_017332	Fasn	Fatty acid synthase
C08	Rn.867	NM_012792	Fmo1	Flavin containing monooxygenase 1
C09	Rn.13451	NM_053371	Fxc1	Fractured callus expressed transcript 1
C10	Rn.10250	NM_024127	Gadd45a	Growth arrest and DNA-damage-inducible, alpha
C11	Rn.8365	NM_012815	Gclc	Glutamate-cysteine ligase, catalytic subunit
C12	Rn.19721	NM_053906	Gsr	Glutathione reductase
D01	Rn.198611	NM_032082	Hao2	Hydroxyacid oxidase 2 (long chain)
D02	Rn.3160	NM_012580	Hmox1	Heme oxygenase (decycling) 1
D03	Rn.11139	NM_017112	Hpn	Hepsin
D04	Rn.10542	NM_138867	Hyou1	Hypoxia up-regulated 1
D05	Rn.12	NM_012967	Icam1	Intercellular adhesion molecule 1
D06	Rn.7327	NM_053329	Igfals	Insulin-like growth factor binding protein, acid labile subunit
D07	Rn.12138	NM_001008725	Il6st	Interleukin 6 signal transducer
D08	Rn.107154	NM_001106038	Ipo4	Importin 4
D09	Rn.103924	NM_053976	Krt18	Keratin 18

Position	UniGene	GenBank	Symbol	Description
D10	Rn.11083	NM_199370	Krt8	Keratin 8
D11	Rn.22733	NM_001108028	L2hgdh	L-2-hydroxyglutarate dehydrogenase
D12	Rn.214063	NM_001106784	Lgr5	Leucine rich repeat containing G protein coupled receptor 5
E01	Rn.3834	NM_012598	Lpl	Lipoprotein lipase
E02	Rn.10211	NM_031049	Lss	Lanosterol synthase (2,3-oxidosqualene-lanosterol cyclase)
E03	Rn.6656	NM_013198	Maob	Monoamine oxidase B
E04	Rn.219652	NM_001107909	Map3k6	Mitogen-activated protein kinase kinase kinase 6
E05	Rn.9667	NM_022704	Mbl2	Mannose-binding lectin (protein C) 2
E06	Rn.137948	NM_001107366	Mcm10	Minichromosome maintenance complex component 10
E07	Rn.144656	NM_133552	Mlxipl	MLX interacting protein-like
E08	Rn.114	NM_212534	Mrps18b	Mitochondrial ribosomal protein S18B
E09	Rn.11234	NM_017000	Nqo1	NAD(P)H dehydrogenase, quinone 1
E10	Rn.23082	NM_001164157	Nus1	Nuclear undecaprenyl pyrophosphate synthase 1 homolog (<i>S. cerevisiae</i>)
E11	Rn.92110	NM_001005384	Osmr	Oncostatin M receptor
E12	Rn.19056	NM_001107087	Ostalpa	Organic solute transporter alpha
F01	Rn.44471	NM_019374	Pdyn	Prodynorphin
F02	Rn.137418	NM_001108565	Pla2g12a	Phospholipase A2, group XIIA
F03	Rn.9753	NM_013196	Ppara	Peroxisome proliferator activated receptor alpha
F04	Rn.198325	NM_001011894	Psme3	Proteasome (prosome, macropain) activator subunit 3
F05	Rn.21399	NM_022268	Pygl	Phosphorylase, glycogen, liver
F06	Rn.55115	NM_017045	Rb1	Retinoblastoma 1
F07	Rn.203261	NM_001005889	Rdx	Radixin
F08	Rn.23973	NM_001106838	RGD131055 2	Similar to hypothetical protein MGC38960
F09	Rn.94552	NM_183054	Rhbg	Rh family, B glycoprotein
F10	Rn.31839	NM_053822	S100a8	S100 calcium binding protein A8
F11	Rn.1023	NM_139192	Scd1	Stearoyl-Coenzyme A desaturase 1
F12	Rn.202939	NM_031531	Serpina3n	Serine (or cysteine) peptidase inhibitor, clade A, member 3N
G01	Rn.29367	NM_012620	Serpine1	Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
G02	Rn.104291	XM_001057072	Skil	SKI-like oncogene
G03	Rn.16357	NM_153622	Slc17a3	Solute carrier family 17 (sodium phosphate), member 3
G04	Rn.95055	NM_017102	Slc2a3	Solute carrier family 2 (facilitated glucose transporter), member 3
G05	Rn.99415	NM_001024745	Slc39a6	Solute carrier family 39 (zinc transporter), member 6
G06	Rn.221929	XM_213329	Srebf1	Sterol regulatory element binding transcription factor 1
G07	Rn.34397	NM_031549	Tagln	Transgelin
G08	Rn.81140	NM_012703	Thrsp	Thyroid hormone responsive
G09	Rn.107821	NM_001107596	Tmem2	Transmembrane protein 2
G10	Rn.67581	NM_031614	Txnrd1	Thioredoxin reductase 1
G11	Rn.203725	NM_001127297	Wipi1	WD repeat domain, phosphoinositide interacting 1
G12	Rn.9475	NM_175604	Yrdc	YrdC domain containing (<i>E.coli</i>)
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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