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

Human Nephrotoxicity

Cat. no. 330231 PAHS-094ZA

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 Nephrotoxicity RT² Profiler PCR Array profiles the expression of 84 key genes implicated as potential biomarkers of kidney toxicity. Minimizing toxicity remains one of the major barriers to bringing a drug to market. The crucial role of the kidney in drug excretion 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. Kidney excretion within the nephron starts with blood filtration by the glomerulus. The filtrate then moves through the proximal tubule (for re-absorption of important compounds), the loop of Henle (for urine concentration), the distal tubule, and finally the collecting duct (for urine concentration and removal). Drug-induced nephrotoxicity research focuses on proximal tubule toxicity, where the majority of drug metabolite re-absorption occurs. The array includes genes that show expression differences when exposed to a wide variety of known nephrotoxic drugs. 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 nephrotoxic 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	A2M	AASS	ABCB1	ABCC2	ALDH1A1	ANGPTL4	ANXA5	ATF3	BHMT	BMP1	BMP4	BTG2
B	CALB1	CAT	CCL3	CCND1	CCNG1	CCS	CD24	CD44	CDKN1A	CLU	CP	CST3
C	CTSS	CXCL1	CXCL10	CYP2C19	CYP2D6	CYR61	EGF	FGB	FMO2	FN1	G6PC	G6PD
D	GADD45A	GAMT	GATM	GC	GHR	GLUL	GPNMB	GPX2	GPX8	GSTK1	GSTP1	HAVCR1
E	HMOX1	HMOX2	HSP90AA1	IDH1	IGFBP1	IGFBP3	IPMK	KLK1	LCN2	LGALS3	MCM6	MGP
F	MT1A	NOX4	NPHS2	NQO1	OAT	ODC1	RGN	RTN4	SCD	SLC22A1	SLC22A5	SLC22A6
G	SOCS3	SOD2	SOD3	SPP1	SPRR1A	TIMP1	TMSB10	TNFRSF12A	UCHL1	UGT1A1	VCAM1	VIM
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.212838	NM_000014	A2M	Alpha-2-macroglobulin
A02	Hs.156738	NM_005763	AASS	Aminoadipate-semialdehyde synthase
A03	Hs.489033	NM_000927	ABCB1	ATP-binding cassette, sub-family B (MDR/TAP), member 1
A04	Hs.368243	NM_000392	ABCC2	ATP-binding cassette, sub-family C (CFTR/MRP), member 2
A05	Hs.76392	NM_000689	ALDH1A1	Aldehyde dehydrogenase 1 family, member A1
A06	Hs.9613	NM_001039667	ANGPTL4	Angiopoietin-like 4
A07	Hs.480653	NM_001154	ANXA5	Annexin A5
A08	Hs.460	NM_001674	ATF3	Activating transcription factor 3
A09	Hs.80756	NM_001713	BHMT	Betaine--homocysteine S-methyltransferase
A10	Hs.1274	NM_006129	BMP1	Bone morphogenetic protein 1
A11	Hs.68879	NM_130851	BMP4	Bone morphogenetic protein 4
A12	Hs.519162	NM_006763	BTG2	BTG family, member 2
B01	Hs.65425	NM_004929	CALB1	Calbindin 1, 28kDa
B02	Hs.502302	NM_001752	CAT	Catalase
B03	Hs.514107	NM_002983	CCL3	Chemokine (C-C motif) ligand 3
B04	Hs.523852	NM_053056	CCND1	Cyclin D1
B05	Hs.79101	NM_004060	CCNG1	Cyclin G1
B06	Hs.502917	NM_005125	CCS	Copper chaperone for superoxide dismutase
B07	Hs.644105	NM_013230	CD24	CD24 molecule
B08	Hs.502328	NM_000610	CD44	CD44 molecule (Indian blood group)
B09	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B10	Hs.436657	NM_001831	CLU	Clusterin
B11	Hs.558314	NM_000096	CP	Ceruloplasmin (ferroxidase)
B12	Hs.304682	NM_000099	CST3	Cystatin C
C01	Hs.181301	NM_004079	CTSS	Cathepsin S
C02	Hs.789	NM_001511	CXCL1	Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
C03	Hs.632586	NM_001565	CXCL10	Chemokine (C-X-C motif) ligand 10
C04	Hs.282409	NM_000769	CYP2C19	Cytochrome P450, family 2, subfamily C, polypeptide 19
C05	Hs.648256	NM_000106	CYP2D6	Cytochrome P450, family 2, subfamily D, polypeptide 6
C06	Hs.8867	NM_001554	CYR61	Cysteine-rich, angiogenic inducer, 61
C07	Hs.419815	NM_001963	EGF	Epidermal growth factor
C08	Hs.300774	NM_005141	FGB	Fibrinogen beta chain
C09	Hs.144912	NM_001460	FMO2	Flavin containing monooxygenase 2 (non-functional)
C10	Hs.203717	NM_002026	FN1	Fibronectin 1
C11	Hs.212293	NM_000151	G6PC	Glucose-6-phosphatase, catalytic subunit
C12	Hs.461047	NM_000402	G6PD	Glucose-6-phosphate dehydrogenase
D01	Hs.80409	NM_001924	GADD45A	Growth arrest and DNA-damage-inducible, alpha
D02	Hs.81131	NM_000156	GAMT	Guanidinoacetate N-methyltransferase
D03	Hs.75335	NM_001482	GATM	Glycine amidinotransferase (L-arginine:glycine amidinotransferase)
D04	Hs.418497	NM_000583	GC	Group-specific component (vitamin D binding protein)
D05	Hs.125180	NM_000163	GHR	Growth hormone receptor
D06	Hs.518525	NM_002065	GLUL	Glutamate-ammonia ligase
D07	Hs.190495	NM_002510	GPNMB	Glycoprotein (transmembrane) nmb
D08	Hs.2704	NM_002083	GPX2	Glutathione peroxidase 2 (gastrointestinal)
D09	Hs.289044	NM_001008397	GPX8	Glutathione peroxidase 8 (putative)

Position	UniGene	GenBank	Symbol	Description
D10	Hs.390667	NM_015917	GSTK1	Glutathione S-transferase kappa 1
D11	Hs.523836	NM_000852	GSTP1	Glutathione S-transferase pi 1
D12	Hs.129711	NM_012206	HAVCR1	Hepatitis A virus cellular receptor 1
E01	Hs.517581	NM_002133	HMOX1	Heme oxygenase (decycling) 1
E02	Hs.284279	NM_002134	HMOX2	Heme oxygenase (decycling) 2
E03	Hs.525600	NM_001017963	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
E04	Hs.593422	NM_005896	IDH1	Isocitrate dehydrogenase 1 (NADP+), soluble
E05	Hs.642938	NM_000596	IGFBP1	Insulin-like growth factor binding protein 1
E06	Hs.450230	NM_000598	IGFBP3	Insulin-like growth factor binding protein 3
E07	Hs.499690	NM_152230	IPMK	Inositol polyphosphate multikinase
E08	Hs.123107	NM_002257	KLK1	Kallikrein 1
E09	Hs.204238	NM_005564	LCN2	Lipocalin 2
E10	Hs.531081	NM_002306	LGALS3	Lectin, galactoside-binding, soluble, 3
E11	Hs.444118	NM_005915	MCM6	Minichromosome maintenance complex component 6
E12	Hs.365706	NM_000900	MGP	Matrix Gla protein
F01	Hs.655199	NM_005946	MT1A	Metallothionein 1A
F02	Hs.371036	NM_016931	NOX4	NADPH oxidase 4
F03	Hs.412710	NM_014625	NPHS2	Nephrosis 2, idiopathic, steroid-resistant (podocin)
F04	Hs.406515	NM_000903	NQO1	NAD(P)H dehydrogenase, quinone 1
F05	Hs.523332	NM_000274	OAT	Ornithine aminotransferase
F06	Hs.467701	NM_002539	ODC1	Ornithine decarboxylase 1
F07	Hs.77854	NM_004683	RGN	Regucalcin (senescence marker protein-30)
F08	Hs.704007	NM_007008	RTN4	Reticulon 4
F09	Hs.558396	NM_005063	SCD	Stearoyl-CoA desaturase (delta-9-desaturase)
F10	Hs.117367	NM_003057	SLC22A1	Solute carrier family 22 (organic cation transporter), member 1
F11	Hs.443572	NM_003060	SLC22A5	Solute carrier family 22 (organic cation/carnitine transporter), member 5
F12	Hs.369252	NM_004790	SLC22A6	Solute carrier family 22 (organic anion transporter), member 6
G01	Hs.527973	NM_003955	SOCS3	Suppressor of cytokine signaling 3
G02	Hs.487046	NM_000636	SOD2	Superoxide dismutase 2, mitochondrial
G03	Hs.2420	NM_003102	SOD3	Superoxide dismutase 3, extracellular
G04	Hs.313	NM_000582	SPP1	Secreted phosphoprotein 1
G05	Hs.46320	NM_005987	SPRR1A	Small proline-rich protein 1A
G06	Hs.522632	NM_003254	TIMP1	TIMP metallopeptidase inhibitor 1
G07	Hs.446574	NM_021103	TMSB10	Thymosin beta 10
G08	Hs.355899	NM_016639	TNFRSF12A	Tumor necrosis factor receptor superfamily, member 12A
G09	Hs.518731	NM_004181	UCHL1	Ubiquitin carboxyl-terminal esterase L1 (ubiquitin thiolesterase)
G10	Hs.554822	NM_000463	UGT1A1	UDP glucuronosyltransferase 1 family, polypeptide A1
G11	Hs.109225	NM_001078	VCAM1	Vascular cell adhesion molecule 1
G12	Hs.642813	NM_003380	VIM	Vimentin
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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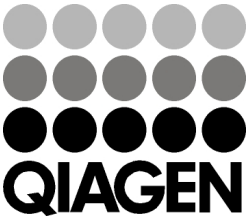

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