RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Nephrotoxicity

Cat. no. 330231 PARN-094ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

Description

The Rat 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*.

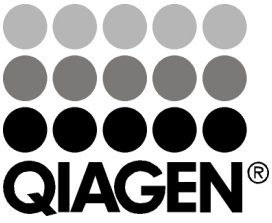
Shipping and storage

RT² Profiler PCR Arrays in the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

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

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc™ (plate A1–A12=Rotor-Disc 1–12, plate B1–B12=Rotor-Disc 13–24, etc.). To maintain data analysis compatibility, wells 97–100 do not contain real-time assays but will contain master mix to account for weight balance.

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.198688	NM_012488	A2m	Alpha-2-macroglobulin
A02	Rn.198671	NM_001100963	Aass	Aminoadipate-semialdehyde synthase
A03	Rn.144554	NM_012623	Abcb1b	ATP-binding cassette, subfamily B (MDR/TAP), member 1B
A04	Rn.10265	NM_012833	Abcc2	ATP-binding cassette, subfamily C (CFTR/MRP), member 2
A05	Rn.6132	NM_022407	Aldh1a1	Aldehyde dehydrogenase 1 family, member A1
A06	Rn.119611	NM_199115	Angptl4	Angiopoietin-like 4
A07	Rn.3318	NM_013132	Anxa5	Annexin A5
A08	Rn.9664	NM_012912	Atf3	Activating transcription factor 3
A09	Rn.11406	NM_030850	Bhmt	Betaine-homocysteine methyltransferase
A10	Rn.9305	NM_031323	Bmp1	Bone morphogenetic protein 1
A11	Rn.10318	NM_012827	Bmp4	Bone morphogenetic protein 4
A12	Rn.27923	NM_017259	Btg2	BTG family, member 2
B01	Rn.3908	NM_031984	Calb1	Calbindin 1
B02	Rn.3001	NM_012520	Cat	Catalase
B03	Rn.10139	NM_013025	Ccl3	Chemokine (C-C motif) ligand 3
B04	Rn.22279	NM_171992	Ccnd1	Cyclin D1
B05	Rn.5834	NM_012923	Ccng1	Cyclin G1
B06	Rn.12311	NM_053425	Ccs	Copper chaperone for superoxide dismutase
B07	Rn.6007	NM_012752	Cd24	CD24 molecule
B08	Rn.1120	NM_012924	Cd44	Cd44 molecule
B09	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B10	Rn.1780	NM_053021	Clu	Clusterin
B11	Rn.32777	NM_012532	Cp	Ceruloplasmin
B12	Rn.106351	NM_012837	Cst3	Cystatin C
C01	Rn.11347	NM_017320	Ctss	Cathepsin S
C02	Rn.10907	NM_030845	Cxcl1	Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
C03	Rn.10584	NM_139089	Cxcl10	Chemokine (C-X-C motif) ligand 10
C04	Rn.10870	NM_019184	Cyp2c11	Cytochrome P450, subfamily 2, polypeptide 11
C05	Rn.26060	NM_138515	Cyp2d4	Cytochrome P450, family 2, subfamily d, polypeptide 4
C06	Rn.22129	NM_031327	Cyr61	Cysteine-rich, angiogenic inducer, 61
C07	Rn.6075	NM_012842	Egf	Epidermal growth factor
C08	Rn.11416	NM_020071	Fgb	Fibrinogen beta chain
C09	Rn.3928	NM_144737	Fmo2	Flavin containing monooxygenase 2
C10	Rn.1604	NM_019143	Fn1	Fibronectin 1
C11	Rn.10992	NM_013098	G6pc	Glucose-6-phosphatase, catalytic subunit
C12	Rn.11040	NM_017006	G6pd	Glucose-6-phosphate dehydrogenase
D01	Rn.10250	NM_024127	Gadd45a	Growth arrest and DNA-damage-inducible, alpha
D02	Rn.33890	NM_012793	Gamt	Guanidinoacetate N-methyltransferase
D03	Rn.17661	NM_031031	Gatm	Glycine amidinotransferase (L-arginine:glycine amidinotransferase)
D04	Rn.1437	NM_012564	Gc	Group specific component
D05	Rn.2178	NM_017094	Ghr	Growth hormone receptor
D06	Rn.2204	NM_017073	Glul	Glutamate-ammonia ligase (glutamine synthetase)
D07	Rn.13778	NM_133298	Gpnmb	Glycoprotein (transmembrane) nmb
D08	Rn.106264	NM_001106411	Gpx8	Glutathione peroxidase 8
D09	Rn.109452	NM_181371	Gstk1	Glutathione S-transferase kappa 1
D10	Rn.87063	NM_012577	Gstp1	Glutathione S-transferase pi 1
D11	Rn.11154	NM_173149	Havcr1	Hepatitis A virus cellular receptor 1
D12	Rn.3160	NM_012580	Hmox1	Heme oxygenase (decycling) 1
E01	Rn.10241	NM_024387	Hmox2	Heme oxygenase (decycling) 2
E02	Rn.119867	NM_175761	Hsp90aa1	Heat shock protein 90, alpha (cytosolic), class A member 1
E03	Rn.3561	NM_031510	Idh1	Isocitrate dehydrogenase 1 (NADP+), soluble
E04	Rn.34026	NM_013144	Igfbp1	Insulin-like growth factor binding protein 1
E05	Rn.26369	NM_012588	Igfbp3	Insulin-like growth factor binding protein 3
E06	Rn.15187	NM_134417	Ipmk	Inositol polyphosphate multikinase
E07	Rn.11331	NM_031523	Klk1b3	Kallikrein 1-related peptidase b3
E08	Rn.11303	NM_130741	Lcn2	Lipocalin 2
E09	Rn.764	NM_031832	Lgals3	Lectin, galactoside-binding, soluble, 3

Position	UniGene	GenBank	Symbol	Description
E10	Rn.33226	NM_017287	Mcm6	Minichromosome maintenance complex component 6
E11	Rn.2379	NM_012862	Mgp	Matrix Gla protein
E12	Rn.54397	NM_138826	Mt1a	Metallothionein 1a
F01	Rn.14744	NM_053524	Nox4	NADPH oxidase 4
F02	Rn.86433	NM_130828	Nphs2	Nephrosis 2, idiopathic, steroid-resistant
F03	Rn.11234	NM_017000	Nqo1	NAD(P)H dehydrogenase, quinone 1
F04	Rn.1430	NM_022521	Oat	Ornithine aminotransferase (gyrate atrophy)
F05	Rn.874	NM_012615	Odc1	Ornithine decarboxylase 1
F06	Rn.10006	NM_031546	Rgn	Regucalcin (senescence marker protein-30)
F07	Rn.1348	NM_031831	Rtn4	Reticulon 4
F08	Rn.83595	NM_031841	Scd	Stearoyl-CoA desaturase (delta-9-desaturase)
F09	Rn.11186	NM_012697	Slc22a1	Solute carrier family 22 (organic cation transporter), member 1
F10	Rn.8844	NM_019269	Slc22a5	Solute carrier family 22 (organic cation/carnitine transporter), member 5
F11	Rn.87849	NM_017224	Slc22a6	Solute carrier family 22 (organic anion transporter), member 6
F12	Rn.127801	NM_053565	Socs3	Suppressor of cytokine signaling 3
G01	Rn.10488	NM_017051	Sod2	Superoxide dismutase 2, mitochondrial
G02	Rn.10358	NM_012880	Sod3	Superoxide dismutase 3, extracellular
G03	Rn.8871	NM_012881	Spp1	Secreted phosphoprotein 1
G04	Rn.14720	XM_574984	Sprr1al	Small proline-rich protein 1A-like
G05	Rn.25754	NM_053819	Timp1	TIMP metallopeptidase inhibitor 1
G06	Rn.5983	NM_021261	Tmsb10	Thymosin, beta 10
G07	Rn.105040	NM_181086	Tnfrsf12a	Tumor necrosis factor receptor superfamily, member 12a
G08	Rn.107213	NM_017237	Uchl1	Ubiquitin carboxyl-terminal esterase L1 (ubiquitin thiolesterase)
G09	Rn.26489	NM_012683	Ugt1a1	UDP glucuronosyltransferase 1 family, polypeptide A1
G10	Rn.26489	NM_057105	Ugt1a6	UDP glucuronosyltransferase 1 family, polypeptide A6
G11	Rn.11267	NM_012889	Vcam1	Vascular cell adhesion molecule 1
G12	Rn.2710	NM_031140	Vim	Vimentin
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.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² SYBR Green ROX™ FAST Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the Rotor-Gene Q and other Rotor-Gene cyclers	330620

* 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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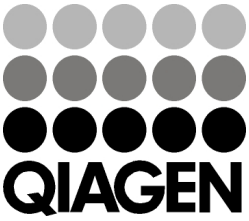

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