

RT² Profiler PCR Array (Rotor-Gene® Format)

Human Nephrotoxicity

Cat. no. 330231 PAHS-094ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

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 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.



Sample & Assay Technologies

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	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	Angiopietin-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	GPNUMB	Glycoprotein (transmembrane) numb
D08	Hs.2704	NM_002083	GPX2	Glutathione peroxidase 2 (gastrointestinal)
D09	Hs.289044	NM_001008397	GPX8	Glutathione peroxidase 8 (putative)
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

Position	UniGene	GenBank	Symbol	Description
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 metalloproteinase 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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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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