

RT² Profiler PCR Array (Rotor-Gene[®] Format)

Human Neurotoxicity

Cat. no. 330231 PAHS-096ZR

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 Neurotoxicity RT² Profiler PCR Array profiles the expression of 84 key genes involved in drug and chemical-induced neurotoxic responses. Minimizing toxicity remains one of the major barriers to bringing a drug to and keeping a drug on the market. Neurotoxicity represents a frequent and troublesome side-effect, making the central and peripheral nervous systems important targets of toxicological studies. However, the simplest measurable phenotypic response to neurotoxicants is cell death upon chronic exposure, a potentially expensive and time-consuming experiment. Quantifiable gene expression changes that occur prior to gross morphological changes allow an earlier identification and determination of neurotoxicity and the more specific mechanisms behind it. This array includes potential biomarkers for a variety of neurotoxic responses, from peripheral neuropathy (cisplatin) to motor neuron axonopathy (1-bromopropane), and from developmental neurotoxicity (chlorpyrifos) to Parkinsonian-type symptoms (paraquat). Neurotoxic 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 neurotoxicity 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.431048	NM_005157	ABL1	C-abl oncogene 1, non-receptor tyrosine kinase
A02	Hs.9613	NM_001039667	ANGPTL4	Angiotensin-like 4
A03	Hs.440934	NM_000045	ARG1	Arginase, liver
A04	Hs.708024	NM_001172	ARG2	Arginase, type II
A05	Hs.503284	NM_004041	ARRB1	Arrestin, beta 1
A06	Hs.496487	NM_001675	ATF4	Activating transcription factor 4 (tax-responsive enhancer element B67)
A07	Hs.194726	NM_004874	BAG4	BCL2-associated athanogene 4
A08	Hs.502182	NM_001709	BDNF	Brain-derived neurotrophic factor
A09	Hs.475055	NM_001197	BIK	BCL2-interacting killer (apoptosis-inducing)
A10	Hs.696238	NM_001166	BIRC2	Baculoviral IAP repeat containing 2
A11	Hs.716391	NM_015981	CAMK2A	Calcium/calmodulin-dependent protein kinase II alpha
A12	Hs.144114	NM_001221	CAMK2D	Calcium/calmodulin-dependent protein kinase II delta
B01	Hs.9216	NM_001227	CASP7	Caspase 7, apoptosis-related cysteine peptidase
B02	Hs.523852	NM_053056	CCND1	Cyclin D1
B03	Hs.405667	NM_004931	CD8B	CD8b molecule
B04	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B05	Hs.442378	NM_001801	CDO1	Cysteine dioxygenase, type I
B06	Hs.249129	NM_001279	CIDEA	Cell death-inducing DFFA-like effector a
B07	Hs.642693	NM_014430	CIDEB	Cell death-inducing DFFA-like effector b
B08	Hs.166486	NM_000084	CLCN5	Chloride channel 5
B09	Hs.591533	NM_004070	CLCNKA	Chloride channel Ka
B10	Hs.101302	NM_004370	COL12A1	Collagen, type XII, alpha 1
B11	Hs.38533	NM_003805	CRADD	CASP2 and RIPK1 domain containing adaptor with death domain
B12	Hs.380277	NM_004938	DAPK1	Death-associated protein kinase 1
C01	Hs.728989	NM_004083	DDIT3	DNA-damage-inducible transcript 3
C02	Hs.73893	NM_000795	DRD2	Dopamine receptor D2
C03	Hs.159291	NM_001939	DRP2	Dystrophin related protein 2
C04	Hs.5120	NM_003746	DYNLL1	Dynein, light chain, LC8-type 1
C05	Hs.135507	NM_022073	EGLN3	Egl nine homolog 3 (C. elegans)
C06	Hs.591589	NM_004836	EIF2AK3	Eukaryotic translation initiation factor 2-alpha kinase 3
C07	Hs.115263	NM_001432	EREG	Epiregulin
C08	Hs.244139	NM_000043	FAS	Fas (TNF receptor superfamily, member 6)
C09	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily, member 6)
C10	Hs.278959	NM_015973	GAL	Galanin prepropeptide
C11	Hs.513439	NM_000153	GALC	Galactosylceramidase
C12	Hs.86724	NM_000161	GCH1	GTP cyclohydrolase 1
D01	Hs.406094	NM_005302	GPR37	G protein-coupled receptor 37 (endothelin receptor type B-like)
D02	Hs.558334	NM_007327	GRIN1	Glutamate receptor, ionotropic, N-methyl D-aspartate 1
D03	Hs.522373	NM_000177	GSN	Gelsolin
D04	Hs.271510	NM_000637	GSR	Glutathione reductase
D05	Hs.24258	NM_000856	GUCY1A3	Guanylate cyclase 1, soluble, alpha 3
D06	Hs.31720	NM_138737	HEPH	Hephaestin
D07	Hs.525600	NM_001017963	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
D08	Hs.716396	NM_005347	HSPA5	Heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)
D09	Hs.247940	NM_000524	HTR1A	5-hydroxytryptamine (serotonin) receptor 1A
D10	Hs.413899	NM_000869	HTR3A	5-hydroxytryptamine (serotonin) receptor 3A
D11	Hs.193717	NM_000572	IL10	Interleukin 10
D12	Hs.479754	NM_000222	KIT	V-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
E01	Hs.2795	NM_005566	LDHA	Lactate dehydrogenase A
E02	Hs.520187	NM_003240	LEFTY2	Left-right determination factor 2
E03	Hs.36	NM_000595	LTA	Lymphotoxin alpha (TNF superfamily, member 1)
E04	Hs.297413	NM_004994	MMP9	Matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
E05	Hs.654408	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E06	Hs.513667	NM_003946	NOL3	Nucleolar protein 3 (apoptosis repressor with CARD domain)
E07	Hs.655000	NM_014697	NOS1AP	Nitric oxide synthase 1 (neuronal) adaptor protein
E08	Hs.7236	NM_015953	NOSIP	Nitric oxide synthase interacting protein

Position	UniGene	GenBank	Symbol	Description
E09	Hs.189780	NM_052946	NOSTRIN	Nitric oxide synthase trafficker
E10	Hs.436100	NM_004557	NOTCH4	Notch 4
E11	Hs.715672	NM_007172	NUP50	Nucleoporin 50kDa
E12	Hs.728832	NM_002581	PAPPA	Pregnancy-associated plasma protein A, pappalysin 1
F01	Hs.93659	NM_004911	PDIA4	Protein disulfide isomerase family A, member 4
F02	Hs.1787	NM_000533	PLP1	Proteolipid protein 1
F03	Hs.591654	NM_000306	POU1F1	POU class 1 homeobox 1
F04	Hs.654580	NM_000947	PRIM2	Primase, DNA, polypeptide 2 (58kDa)
F05	Hs.25829	NM_016084	RASD1	RAS, dexamethasone-induced 1
F06	Hs.82222	NM_004636	SEMA3B	Sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3B
F07	Hs.368171	NM_144579	SFXN5	Sideroflexin 5
F08	Hs.500761	NM_004207	SLC16A3	Solute carrier family 16, member 3 (monocarboxylic acid transporter 4)
F09	Hs.487046	NM_000636	SOD2	Superoxide dismutase 2, mitochondrial
F10	Hs.633301	NM_001058	TACR1	Tachykinin receptor 1
F11	Hs.521456	NM_003842	TNFRSF10B	Tumor necrosis factor receptor superfamily, member 10b
F12	Hs.81791	NM_002546	TNFRSF11B	Tumor necrosis factor receptor superfamily, member 11b
G01	Hs.462529	NM_003790	TNFRSF25	Tumor necrosis factor receptor superfamily, member 25
G02	Hs.654481	NM_000546	TP53	Tumor protein p53
G03	Hs.591999	NM_004179	TPH1	Tryptophan hydroxylase 1
G04	Hs.522506	NM_021138	TRAF2	TNF receptor-associated factor 2
G05	Hs.8375	NM_004295	TRAF4	TNF receptor-associated factor 4
G06	Hs.155942	NM_002420	TRPM1	Transient receptor potential cation channel, subfamily M, member 1
G07	Hs.467101	NM_017636	TRPM4	Transient receptor potential cation channel, subfamily M, member 4
G08	Hs.533977	NM_006472	TXNIP	Thioredoxin interacting protein
G09	Hs.270279	NM_000550	TYRP1	Tyrosinase-related protein 1
G10	Hs.706830	NM_003470	USP7	Ubiquitin specific peptidase 7 (herpes virus-associated)
G11	Hs.356076	NM_001167	XIAP	X-linked inhibitor of apoptosis
G12	Hs.513851	NM_006761	YWHAE	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, epsilon polypeptide
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.

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