RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Neurotoxicity

Cat. no. 330231 PARN-096ZR

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 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.

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.3105	NM_001100850	Abl1	C-abl oncogene 1, receptor tyrosine kinase
A02	Rn.119611	NM_199115	Angptl4	Angiopoietin-like 4
A03	Rn.9857	NM_017134	Arg1	Arginase, liver
A04	Rn.11055	NM_019168	Arg2	Arginase type II
A05	Rn.34876	NM_012910	Arrb1	Arrestin, beta 1
A06	Rn.2423	NM_024403	Atf4	Activating transcription factor 4 (tax-responsive enhancer element B67)
A07	Rn.163329	NM_001025130	Bag4	BCL2-associated athanogene 4
A08	Rn.11266	NM_012513	Bdnf	Brain-derived neurotrophic factor
A09	Rn.38487	NM_053704	Bik	BCL2-interacting killer (apoptosis-inducing)
A10	Rn.205955	NM_021752	Birc2	Baculoviral IAP repeat-containing 2
A11	Rn.107499	NM_012920	Camk2a	Calcium/calmodulin-dependent protein kinase II alpha
A12	Rn.87208	NM_012519	Camk2d	Calcium/calmodulin-dependent protein kinase II delta
B01	Rn.53995	NM_022260	Casp7	Caspase 7
B02	Rn.22279	NM_171992	Ccnd1	Cyclin D1
B03	Rn.10330	NM_031539	Cd8b	CD8b molecule
B04	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B05	Rn.2589	NM_052809	Cdo1	Cysteine dioxygenase, type I
B06	Rn.8171	NM_001170467	Cidea	Cell death-inducing DFFA-like effector a
B07	Rn.204016	NM_001108869	Cideb	Cell death-inducing DFFA-like effector b
B08	Rn.10337	NM_017106	Clcn5	Chloride channel 5
B09	Rn.10339	NM_173103	Clcnkb	Chloride channel Kb
B10	Rn.11218	XM_243912	Col12a1	Collagen, type XII, alpha 1
B11	Rn.23108	NM_001107335	Dapk1	Death associated protein kinase 1
B12	Rn.11183	NM_024134	Ddit3	DNA-damage inducible transcript 3
C01	Rn.87299	NM_012547	Drd2	Dopamine receptor D2
C02	Rn.162341	NM_023971	Drp2	Dystrophin related protein 2
C03	Rn.35769	NM_053319	Dynll1	Dynein light chain LC8-type 1
C04	Rn.10994	NM_019371	Egln3	EGL nine homolog 3 (C. elegans)
C05	Rn.24897	NM_031599	Eif2ak3	Eukaryotic translation initiation factor 2 alpha kinase 3
C06	Rn.42897	NM_021689	Ereg	Epiregulin
C07	Rn.162521	NM_139194	Fas	Fas (TNF receptor superfamily, member 6)
C08	Rn.9725	NM_012908	Faslg	Fas ligand (TNF superfamily, member 6)
C09	Rn.8929	NM_033237	Gal	Galanin prepropeptide
C10	Rn.211758	NM_001005888	Galc	Galactosylceramidase
C11	Rn.28195	NM_024356	Gch1	GTP cyclohydrolase 1
C12	Rn.28035	NM_057201	Gpr37	G protein-coupled receptor 37
D01	Rn.9840	NM_017010	Grin1	Glutamate receptor, ionotropic, N-methyl D-aspartate 1
D02	Rn.103770	NM_001004080	Gsn	Gelsolin
D03	Rn.19721	NM_053906	Gsr	Glutathione reductase
D04	Rn.1974	NM_017090	Gucy1a3	Guanylate cyclase 1, soluble, alpha 3
D05	Rn.43849	NM_133304	Heph	Hephaestin
D06	Rn.119867	NM_175761	Hsp90aa1	Heat shock protein 90, alpha (cytosolic), class A member 1
D07	Rn.11088	NM_013083	Hspa5	Heat shock protein 5
D08	Rn.44486	NM_012585	Htr1a	5-hydroxytryptamine (serotonin) receptor 1A
D09	Rn.55109	NM_024394	Htr3a	5-hydroxytryptamine (serotonin) receptor 3a
D10	Rn.9868	NM_012854	Il10	Interleukin 10
D11	Rn.54004	NM_022264	Kit	V-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
D12	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
E01	Rn.215726	NM_001007556	Lefty2	Left-right determination factor 2
E02	Rn.160577	NM_080769	Lta	Lymphotoxin alpha (TNF superfamily, member 1)
E03	Rn.10209	NM_031055	Mmp9	Matrix metallopeptidase 9
E04	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E05	Rn.86956	NM_053516	Nol3	Nucleolar protein 3 (apoptosis repressor with CARD domain)
E06	Rn.9903	NM_138922	Nos1ap	Nitric oxide synthase 1 (neuronal) adaptor protein
E07	Rn.146210	NM_001106260	Nosip	Nitric oxide synthase interacting protein
E08	Rn.39383	NM_001024260	Nostrin	Nitric oxide synthase trafficker
E09	Rn.12967	NM_001002827	Notch4	Notch homolog 4 (Drosophila)

Position	UniGene	GenBank	Symbol	Description
E10	Rn.3242	NM_012991	Npap60	Nuclear pore associated protein
E11	Rn.207940	NM_001107939	Pappa	Pregnancy-associated plasma protein A
E12	Rn.39305	NM_053849	Pdia4	Protein disulfide isomerase family A, member 4
F01	Rn.4550	NM_030990	Plp1	Proteolipid protein 1
F02	Rn.10445	NM_013008	Pou1f1	POU class 1 homeobox 1
F03	Rn.11846	NM_001024762	Prim2	Primase, DNA, polypeptide 2
F04	Rn.1518	NM_013188	Pygb	Phosphorylase, glycogen; brain
F05	Rn.54720	XM_340809	Rasd1	RAS, dexamethasone-induced 1
F06	Rn.26859	NM_001079942	Sema3b	Sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3B
F07	Rn.161851	NM_153298	Sfxn5	Sideroflexin 5
F08	Rn.10826	NM_030834	Slc16a3	Solute carrier family 16, member 3 (monocarboxylic acid transporter 4)
F09	Rn.10488	NM_017051	Sod2	Superoxide dismutase 2, mitochondrial
F10	Rn.89609	NM_012667	Tacr1	Tachykinin receptor 1
F11	Rn.105558	NM_001108873	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
F12	Rn.202973	NM_012870	Tnfrsf11b	Tumor necrosis factor receptor superfamily, member 11b
G01	Rn.106560	NM_001137644	Tnfrsf25	Tumor necrosis factor receptor superfamily, member 25
G02	Rn.54443	NM_030989	Tp53	Tumor protein p53
G03	Rn.219628	NM_001100634	Tph1	Tryptophan hydroxylase 1
G04	Rn.105232	NM_001107815	Traf2	Tnf receptor-associated factor 2
G05	Rn.3219	NM_001107017	Traf4	Tnf receptor associated factor 4
G06	Rn.211311	NM_001037733	Trpm1	Transient receptor potential cation channel, subfamily M, member 1
G07	Rn.205004	NM_001136229	Trpm4	Transient receptor potential cation channel, subfamily M, member 4
G08	Rn.2758	NM_001008767	Txnip	Thioredoxin interacting protein
G09	Rn.40774	NM_001106664	Tyrp1	Tyrosinase-related protein 1
G10	Rn.72721	NM_001024790	Usp7	Ubiquitin specific peptidase 7 (herpes virus-associated)
G11	Rn.91239	NM_022231	Xiap	X-linked inhibitor of apoptosis
G12	Rn.4225	NM_031603	Ywhae	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, epsilon polypeptide
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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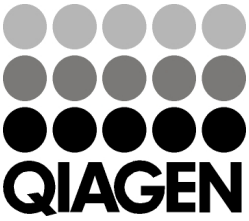

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