

RT² Profiler PCR Array (Rotor-Gene® Format)

Rhesus macaque Neurotoxicity

Cat. no. 330231 PAQQ-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 Rhesus macaque 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
1	Mmu.26340	XM_001118598	ABL1	C-abl oncogene 1, non-receptor tyrosine kinase
2	Mmu.3003	XM_001103609	ARG1	Arginase, liver
3	Mmu.22105	XM_001107412	ARG2	Arginase, type II
4	Mmu.26486	XM_001083881	ARRB1	Arrestin, beta 1
5	Mmu.4189	XM_001099510	ATF4	Activating transcription factor 4 (tax-responsive enhancer element B67)
6	Mmu.22829	XM_001092290	BAG4	BCL2-associated athanogene 4
7	Mmu.3380	XM_001089568	BDNF	Brain-derived neurotrophic factor
8	Mmu.1906	XM_001097089	BIRC2	Baculoviral IAP repeat containing 2
9	Mmu.28345	XM_001096573	CAMK2D	Calcium/calmodulin-dependent protein kinase II delta
10	Mmu.11428	XM_001090833	CASP7	Caspase 7, apoptosis-related cysteine peptidase
11	Mmu.3863	XM_001101029	CCND1	Cyclin D1
12	Mmu.26735	XR_010580	CD8B	T-cell surface glycoprotein CD8 beta chain-like
13	Mmu.4393	NM_001194722	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
14	Mmu.4345	XM_001085951	CDO1	Cysteine dioxygenase, type I
15	N/A	XM_001094509	CIDEA	Cell death-inducing DFFA-like effector a
16	Mmu.21179	XM_001083430	CLCN5	Chloride channel 5
17	Mmu.24730	XM_001091558	CLCNKA	Chloride channel Ka
18	Mmu.24729	XM_001091784	CLCNKB	Chloride channel Kb
19	Mmu.3531	XM_001109727	COL12A1	Collagen, type XII, alpha 1
20	Mmu.20442	XM_001105475	CRADD	CASP2 and RIPK1 domain containing adaptor with death domain
21	Mmu.149	XM_001084983	DAPK1	Death-associated protein kinase 1
22	Mmu.2559	XM_001116086	DDIT3	DNA-damage-inducible transcript 3
23	Mmu.3401	XM_001085571	DRD2	Dopamine receptor D2
24	Mmu.31659	XM_001092374	DRP2	Dystrophin related protein 2
25	Mmu.1253	XM_001089607	DYNLL1	Dynein light chain 1, cytoplasmic-like
26	Mmu.18378	XM_001108734	EGLN3	Egl nine homolog 3 (C. elegans)
27	Mmu.22581	XM_001094493	EIF2AK3	Eukaryotic translation initiation factor 2-alpha kinase 3
28	N/A	XM_001102069	EREG	Epiregulin
29	Mmu.649	NM_001032933	FAS	Fas (TNF receptor superfamily, member 6)
30	Mmu.3579	NM_001032838	FASLG	Fas ligand (TNF superfamily, member 6)
31	Mmu.3412	NM_001044262	GALC	Galactosylceramidase
32	Mmu.27900	XM_001087365	GCH1	GTP cyclohydrolase 1
33	Mmu.21710	XM_001087229	GPR37	G protein-coupled receptor 37 (endothelin receptor type B-like)
34	Mmu.3788	XM_001117773	GRIN1	Glutamate receptor, ionotropic, N-methyl D-aspartate 1
35	Mmu.3965	XM_001093567	GSN	Gelsolin
36	Mmu.4927	XM_002804231	GUCY1A3	Guanylate cyclase 1, soluble, alpha 3
37	Mmu.22816	XM_001099571	HEPH	Hephaestin
38	Mmu.2598	NM_001195667	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1

Position	UniGene	GenBank	Symbol	Description
39	Mmu.4069	XM_001099110	HSPA5	Heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)
40	Mmu.19879	XM_001083407	HTR1A	5-hydroxytryptamine (serotonin) receptor 1A
41	Mmu.26439	XM_001085523	HTR3A	5-hydroxytryptamine (serotonin) receptor 3A
42	Mmu.3374	NM_001044727	IL10	Interleukin 10
43	Mmu.32169	NM_001266095	KIT	V-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
44	Mmu.16533	XM_001084383	LDHA	Lactate dehydrogenase A
45	N/A	XM_001092296	LEFTY2	Left-right determination factor 2
46	Mmu.28724	XM_028852536	GSR	Glutathione-disulfide reductase
47	Mmu.3717	XR_092202	LOC710540	Calcium/calmodulin-dependent protein kinase type II subunit alpha-like
48	Mmu.9773	XM_002801057	LOC711693	Angiopoietin-related protein 4-like
49	Mmu.27783	XM_015144972	TNFRSF10B	TNF receptor superfamily member 10b
50	Mmu.25444	XM_001112814	LOC719120	Transient receptor potential cation channel subfamily M member 4-like
51	Mmu.10857	NM_001047148	LTA	Lymphotoxin alpha (TNF superfamily, member 1)
52	Mmu.28433	XM_001104871	MMP9	Matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
53	Mmu.3512	XM_001109277	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
54	Mmu.25154	XM_001087572	NOL3	Nucleolar protein 3 (apoptosis repressor with CARD domain)
55	Mmu.17792	NM_001164764	NOS1AP	Nitric oxide synthase 1 (neuronal) adaptor protein
56	Mmu.19165	XM_001115348	NOSIP	Nitric oxide synthase interacting protein
57	Mmu.20687	XM_001102941	NOSTRIN	Nitric oxide synthase trafficker
58	Mmu.28966	XM_002803684	NOTCH4	Notch 4
59	Mmu.1537	XM_001109448	NUP50	Nucleoporin 50kDa
60	Mmu.1193	XM_001095160	PAPPA	Pregnancy-associated plasma protein A, pappalysin 1
61	Mmu.12088	XM_002803513	PDIA4	Protein disulfide-isomerase A4-like
62	Mmu.3262	XM_001087984	PLP1	Myelin proteolipid protein-like
63	Mmu.3411	NM_001042860	POU1F1	POU class 1 homeobox 1
64	Mmu.21189	XM_001110968	PRIM2	Primase, DNA, polypeptide 2 (58kDa)
65	Mmu.20428	XM_001100276	PYGB	Phosphorylase, glycogen; brain
66	Mmu.34005	XM_001090082	RASD1	RAS, dexamethasone-induced 1
67	Mmu.24226	XM_001102773	SEMA3B	Sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3B
68	Mmu.26759	XM_001103924	SFXN5	Sideroflexin 5
69	Mmu.2713	XM_001113202	SLC16A3	Solute carrier family 16, member 3 (monocarboxylic acid transporter 4)
70	Mmu.1131	NM_001032805	SOD2	Mn-superoxide dismutase
71	Mmu.4899	NM_001037861	TACR1	NK-1 receptor
72	Mmu.27716	XM_001096915	TNFRSF11B	Tumor necrosis factor receptor superfamily, member 11b
73	Mmu.24755	XM_001093543	TNFRSF25	Tumor necrosis factor receptor superfamily, member 25
74	Mmu.3286	NM_001047151	TP53	Tumor protein p53
75	Mmu.22935	XM_001083991	TPH1	Tryptophan hydroxylase 1
76	N/A	XM_001101998	TPII	Triosephosphate isomerase 1
77	Mmu.18775	NM_001194792	TRAF2	TNF receptor-associated factor 2
78	Mmu.26083	XM_001107048	TRAF4	TNF receptor-associated factor 4

Position	UniGene	GenBank	Symbol	Description
79	Mmu.28093	XM_001116180	TRPM1	Transient receptor potential cation channel, subfamily M, member 1
80	Mmu.3252	XM_001092636	TXNIP	Thioredoxin interacting protein
81	N/A	XM_00111475	TYRP1	Tyrosinase-related protein 1
82	Mmu.5147	XM_002802388	USP7	Ubiquitin specific peptidase 7 (herpes virus-associated)
83	Mmu.24874	XM_001114854	XIAP	X-linked inhibitor of apoptosis
84	N/A	XM_001117283	YWHAE	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, epsilon polypeptide
85	Mmu.11089	NM_001033084	ACTB	Actin, beta
86	Mmu.5037	NM_001047137	B2M	Beta-2-microglobulin
87	Mmu.3145	NM_001195426	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
88	Mmu.12316	XM_001097691	LOC709186	Hypoxanthine-guanine phosphoribosyltransferase-like
89	Mmu.2512	XM_001115079	RPL13A	Ribosomal protein L13A
90	N/A	SA_00125	QGDC	Rhesus Macaque Genomic DNA Contamination
91	N/A	SA_00104	RTC	Reverse Transcription Control
92	N/A	SA_00104	RTC	Reverse Transcription Control
93	N/A	SA_00104	RTC	Reverse Transcription Control
94	N/A	SA_00103	PPC	Positive PCR Control
95	N/A	SA_00103	PPC	Positive PCR Control
96	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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