

RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Rhesus macaque Neurotoxicity

Cat. no. 330231 PAQQ-096ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm® BioMark™



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 formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

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 cyclers (see table above).

Note: Open the package and store the products appropriately immediately on receipt.

Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	ABL1	ARG1	ARG2	ARRB1	ATF4	BAG4	BDNF	BIRC2	CAMK2D	CASP7	CCND1	CD8B
B	CDKN1A	CDO1	CIDEA	CLCN5	CLCNKA	CLCNKB	COL12A1	CRADD	DAPK1	DDIT3	DRD2	DRP2
C	DYNLL1	EGLN3	EIF2AK3	EREG	FAS	FASLG	GALC	GCH1	GPR37	GRIN1	GSN	GUCY1A3
D	HEPH	HSP90AA1	HSPA5	HTR1A	HTR3A	IL10	KIT	LDHA	LEFTY2	GSR	LOC710540	LOC711693
E	TNFRSF10B	LOC719120	LTA	MMP9	NFKB1	NOL3	NOS1AP	NOSIP	NOSTRIN	NOTCH4	NUP50	PAPPA
F	PDIA4	PLP1	POU1F1	PRIM2	PYGB	RASD1	SEMA3B	SFXN5	SLC16A3	SOD2	TACR1	TNFRSF11B
G	TNFRSF25	TP53	TPH1	TPI1	TRAF2	TRAF4	TRPM1	TXNIP	TYRP1	USP7	XIAP	YWHAE
H	ACTB	B2M	GAPDH	LOC709186	RPL13A	QGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mmu.26340	XM_001118598	ABL1	C-abl oncogene 1, non-receptor tyrosine kinase
A02	Mmu.3003	XM_001103609	ARG1	Arginase, liver
A03	Mmu.22105	XM_001107412	ARG2	Arginase, type II
A04	Mmu.26486	XM_001083881	ARRB1	Arrestin, beta 1
A05	Mmu.4189	XM_001099510	ATF4	Activating transcription factor 4 (tax-responsive enhancer element B67)
A06	Mmu.22829	XM_001092290	BAG4	BCL2-associated athanogene 4
A07	Mmu.3380	XM_001089568	BDNF	Brain-derived neurotrophic factor
A08	Mmu.1906	XM_001097089	BIRC2	Baculoviral IAP repeat containing 2
A09	Mmu.28345	XM_001096573	CAMK2D	Calcium/calmodulin-dependent protein kinase II delta
A10	Mmu.11428	XM_001090833	CASP7	Caspase 7, apoptosis-related cysteine peptidase
A11	Mmu.3863	XM_001101029	CCND1	Cyclin D1
A12	Mmu.26735	XR_010580	CD8B	T-cell surface glycoprotein CD8 beta chain-like
B01	Mmu.4393	NM_001194722	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B02	Mmu.4345	XM_001085951	CDO1	Cysteine dioxygenase, type I
B03	N/A	XM_001094509	CIDEA	Cell death-inducing DFFA-like effector a
B04	Mmu.21179	XM_001083430	CLCN5	Chloride channel 5
B05	Mmu.24730	XM_001091558	CLCNKA	Chloride channel Ka
B06	Mmu.24729	XM_001091784	CLCNKB	Chloride channel Kb
B07	Mmu.3531	XM_001109727	COL12A1	Collagen, type XII, alpha 1
B08	Mmu.20442	XM_001105475	CRADD	CASP2 and RIPK1 domain containing adaptor with death domain
B09	Mmu.149	XM_001084983	DAPK1	Death-associated protein kinase 1
B10	Mmu.2559	XM_001116086	DDIT3	DNA-damage-inducible transcript 3
B11	Mmu.3401	XM_001085571	DRD2	Dopamine receptor D2
B12	Mmu.31659	XM_001092374	DRP2	Dystrophin related protein 2

Position	UniGene	GenBank	Symbol	Description
C01	Mmu.1253	XM_001089607	DYNLL1	Dynein light chain 1, cytoplasmic-like
C02	Mmu.18378	XM_001108734	EGLN3	Egl nine homolog 3 (C. elegans)
C03	Mmu.22581	XM_001094493	EIF2AK3	Eukaryotic translation initiation factor 2-alpha kinase 3
C04	N/A	XM_001102069	EREG	Epiregulin
C05	Mmu.649	NM_001032933	FAS	Fas (TNF receptor superfamily, member 6)
C06	Mmu.3579	NM_001032838	FASLG	Fas ligand (TNF superfamily, member 6)
C07	Mmu.3412	NM_001044262	GALC	Galactosylceramidase
C08	Mmu.27900	XM_001087365	GCH1	GTP cyclohydrolase 1
C09	Mmu.21710	XM_001087229	GPR37	G protein-coupled receptor 37 (endothelin receptor type B-like)
C10	Mmu.3788	XM_001117773	GRIN1	Glutamate receptor, ionotropic, N-methyl D-aspartate 1
C11	Mmu.3965	XM_001093567	GSN	Gelsolin
C12	Mmu.4927	XM_002804231	GUCY1A3	Guanylate cyclase 1, soluble, alpha 3
D01	Mmu.22816	XM_001099571	HEPH	Hephaestin
D02	Mmu.2598	NM_001195667	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
D03	Mmu.4069	XM_001099110	HSPA5	Heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)
D04	Mmu.19879	XM_001083407	HTR1A	5-hydroxytryptamine (serotonin) receptor 1A
D05	Mmu.26439	XM_001085523	HTR3A	5-hydroxytryptamine (serotonin) receptor 3A
D06	Mmu.3374	NM_001044727	IL10	Interleukin 10
D07	Mmu.32169	NM_001266095	KIT	V-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
D08	Mmu.16533	XM_001084383	LDHA	Lactate dehydrogenase A
D09	N/A	XM_001092296	LEFTY2	Left-right determination factor 2
D10	Mmu.28724	XM_028852536	GSR	Glutathione-disulfide reductase
D11	Mmu.3717	XR_092202	LOC710540	Calcium/calmodulin-dependent protein kinase type II subunit alpha-like
D12	Mmu.9773	XM_002801057	LOC711693	Angiopoietin-related protein 4-like
E01	Mmu.27783	XM_015144972	TNFRSF10B	TNF receptor superfamily member 10b
E02	Mmu.25444	XM_001112814	LOC719120	Transient receptor potential cation channel subfamily M member 4-like
E03	Mmu.10857	NM_001047148	LTA	Lymphotoxin alpha (TNF superfamily, member 1)
E04	Mmu.28433	XM_001104871	MMP9	Matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
E05	Mmu.3512	XM_001109277	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E06	Mmu.25154	XM_001087572	NOL3	Nucleolar protein 3 (apoptosis repressor with CARD domain)
E07	Mmu.17792	NM_001164764	NOS1AP	Nitric oxide synthase 1 (neuronal) adaptor protein
E08	Mmu.19165	XM_001115348	NOSIP	Nitric oxide synthase interacting protein
E09	Mmu.20687	XM_001102941	NOSTRIN	Nitric oxide synthase trafficker
E10	Mmu.28966	XM_002803684	NOTCH4	Notch 4
E11	Mmu.1537	XM_001109448	NUP50	Nucleoporin 50kDa
E12	Mmu.1193	XM_001095160	PAPPA	Pregnancy-associated plasma protein A, pappalysin 1
F01	Mmu.12088	XM_002803513	PDIA4	Protein disulfide-isomerase A4-like
F02	Mmu.3262	XM_001087984	PLP1	Myelin proteolipid protein-like
F03	Mmu.3411	NM_001042860	POU1F1	POU class 1 homeobox 1
F04	Mmu.21189	XM_001110968	PRIM2	Primase, DNA, polypeptide 2 (58kDa)

Position	UniGene	GenBank	Symbol	Description
F05	Mmu.20428	XM_001100276	PYGB	Phosphorylase, glycogen; brain
F06	Mmu.34005	XM_001090082	RASD1	RAS, dexamethasone-induced 1
F07	Mmu.24226	XM_001102773	SEMA3B	Sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3B
F08	Mmu.26759	XM_001103924	SFXN5	Sideroflexin 5
F09	Mmu.2713	XM_001113202	SLC16A3	Solute carrier family 16, member 3 (monocarboxylic acid transporter 4)
F10	Mmu.1131	NM_001032805	SOD2	Mn-superoxide dismutase
F11	Mmu.4899	NM_001037861	TACR1	NK-1 receptor
F12	Mmu.27716	XM_001096915	TNFRSF11B	Tumor necrosis factor receptor superfamily, member 11b
G01	Mmu.24755	XM_001093543	TNFRSF25	Tumor necrosis factor receptor superfamily, member 25
G02	Mmu.3286	NM_001047151	TP53	Tumor protein p53
G03	Mmu.22935	XM_001083991	TPH1	Tryptophan hydroxylase 1
G04	N/A	XM_001101998	TPI1	Triosephosphate isomerase 1
G05	Mmu.18775	NM_001194792	TRAF2	TNF receptor-associated factor 2
G06	Mmu.26083	XM_001107048	TRAF4	TNF receptor-associated factor 4
G07	Mmu.28093	XM_001116180	TRPM1	Transient receptor potential cation channel, subfamily M, member 1
G08	Mmu.3252	XM_001092636	TXNIP	Thioredoxin interacting protein
G09	N/A	XM_001111475	TYRP1	Tyrosinase-related protein 1
G10	Mmu.5147	XM_002802388	USP7	Ubiquitin specific peptidase 7 (herpes virus-associated)
G11	Mmu.24874	XM_001114854	XIAP	X-linked inhibitor of apoptosis
G12	N/A	XM_001117283	YWHAE	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, epsilon polypeptide
H01	Mmu.11089	NM_001033084	ACTB	Actin, beta
H02	Mmu.5037	NM_001047137	B2M	Beta-2-microglobulin
H03	Mmu.3145	NM_001195426	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mmu.12316	XM_001097691	LOC709186	Hypoxanthine-guanine phosphoribosyltransferase-like
H05	Mmu.2512	XM_001115079	RPL13A	Ribosomal protein L13A
H06	N/A	SA_00125	QGDC	Rhesus Macaque 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 qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT ² SYBR Green ROX [™] qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT ² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* 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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