

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

Pig Pain: Neuropathic & Inflammatory

Cat. no. 330231 PASS-162ZR

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 Pig Pain: Neuropathic & Inflammatory RT² Profiler PCR Array profiles the expression of 84 genes involved in the transduction, maintenance, and modulation of pain responses. Noxious environmental stimuli, tissue damage, and disease all evoke pain. Since it afflicts up to 20% of the population at any given time, pain provides both a massive therapeutic target and a route to understanding the molecular mechanisms of nervous system function. While neuropathic pain often results from damage to the peripheral (PNS) or central nervous system (CNS), peripheral tissue damage and/or inflammation generally initiates inflammatory pain. Neuropathic and inflammatory pain both cause activation of damage-sensing neurons (nociceptors) that innervate the skin, muscle, and viscera and terminate in the laminae of the spinal cord dorsal horn. Nociceptors conduct information to the CNS via neurotransmission and action potentials generated by ion channel and purinergic, opioid, and cannabinoid receptors leading to second order neuron activation. Synaptic transmission via glutamate, serotonin, and dopamine systems then follows. The transduction by nociceptors can be modulated by mediators of inflammation released by infiltrating immune cells and damaged neurons. Excitability of spinal neurons is also modulated by activation of resident microglia that release growth factors (such as BDNF), chemokines, and cytokines. Endogenous opioid peptides and arachidonic acid metabolites acting through G-protein coupled receptors also modulate neuronal excitability. A number of these pathways are currently being evaluated as potential pharmacological targets for analgesic development for pain management. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes associated with neuropathic and inflammatory pain 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 cyclers (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	Ssc.25769	NM_001033015	ACE	Angiotensin I converting enzyme (peptidyl-dipeptidase A) 1
A02	Ssc.16075	NM_001123074	ADRB1	Adrenergic, beta-1-, receptor
A03	Ssc.16077	NM_001128436	ADRB2	Adrenergic, beta-2-, receptor, surface
A04	Ssc.36826	XM_001927671	ALOX5	Arachidonate 5-lipoxygenase
A05	Ssc.69896	NM_001113064	BDKRB1	Bradykinin receptor B1
A06	Ssc.16243	NM_214259	BDNF	Brain-derived neurotrophic factor
A07	Ssc.717	NM_214237	CCK	Cholecystokinin
A08	Ssc.657	NM_214214	CCL2	Chemokine (C-C motif) ligand 2
A09	Ssc.26329	NM_001001619	CCR2	Chemokine (C-C motif) receptor 2
A10	Ssc.4978	NM_001097445	CD14	CD14 molecule
A11	Ssc.16239	NM_001001908	CD4	CD4 molecule
A12	N/A	XM_003125722	CHRN2	Cholinergic receptor, nicotinic, beta 2 (neuronal)
B01	N/A	XM_003121292	CNR1	Cannabinoid receptor 1 (brain)
B02	Ssc.46647	NM_001195330	COMT	Catechol-O-methyltransferase
B03	N/A	NM_001244523	CSF1	Colony stimulating factor 1 (macrophage)
B04	Ssc.42690	XM_001927211	DBH	Dopamine beta-hydroxylase (dopamine beta-monoxygenase)
B05	Ssc.9364	NM_213882	EDN1	Endothelin 1
B06	Ssc.16189	NM_214229	EDNRA	Endothelin receptor type A
B07	Ssc.69824	NM_001244372	F2R	Coagulation factor II (thrombin) receptor
B08	Ssc.2698	NM_213914	FAAH	Fatty acid amide hydrolase
B09	Ssc.76350	XM_003133897	GDNF	Glial cell derived neurotrophic factor
B10	N/A	XM_003362144	GRIN1	Glutamate receptor, ionotropic, N-methyl D-aspartate 1
B11	N/A	XM_003355567	GRIN2B	Glutamate receptor, ionotropic, N-methyl D-aspartate 2B
B12	Ssc.33476	XM_003127274	GRIN2D	Glutamate receptor, ionotropic, N-methyl D-aspartate 2D
C01	N/A	XM_003353188	GRM1	Glutamate receptor, metabotropic 1
C02	Ssc.16141	NM_214217	HTR2A	5-hydroxytryptamine (serotonin) receptor 2A
C03	Ssc.148	NM_214041	IL10	Interleukin 10
C04	Ssc.20	NM_213997	IL18	Interleukin 18 (interferon-gamma-inducing factor)
C05	Ssc.113	NM_214029	IL1A	Interleukin 1, alpha
C06	Ssc.28829	NM_214055	IL1B	Interleukin 1, beta
C07	Ssc.16224	NM_213861	IL2	Interleukin 2
C08	Ssc.62	NM_214399	IL6	Interleukin 6 (interferon, beta 2)
C09	Ssc.16206	XM_003124492	ITGAM	Integrin, alpha M (complement component 3 receptor 3 subunit)
C10	Ssc.14561	NM_213908	ITGB2	Integrin, beta 2 (complement component 3 receptor 3 and 4 subunit)
C11	N/A	XM_003355103	KCNJ10	Potassium inwardly-rectifying channel, subfamily J, member 10
C12	N/A	XM_003358959	KCNJ6	Potassium inwardly-rectifying channel, subfamily J, member 6
D01	Ssc.52878	NM_214402	LIF	Leukemia inhibitory factor (cholinergic differentiation factor)
D02	Ssc.93834	XM_003353488	LOC100127164	Prostaglandin E receptor 2 subtype EP2
D03	Ssc.90068	XM_001929161	LOC100152038	Oncostatin-M-like
D04	Ssc.94124	XM_001924207	LOC100157152	Potassium voltage-gated channel subfamily KQT member 3-like
D05	Ssc.18377	XM_001926787	LOC100157723	Purinergic receptor P2X4
D06	N/A	XM_003356041	LOC100518074	Protein kinase C gamma type-like
D07	Ssc.79274	XM_003124836	LOC100524248	Calsenilin-like
D08	N/A	XM_003356198	LOC100621002	Cannabinoid receptor 2-like
D09	N/A	XM_003358374	LOC100622126	CX3C chemokine receptor 1-like
D10	N/A	XM_003357235	LOC100622280	Metabotropic glutamate receptor 5-like
D11	Ssc.32244	XM_003361740	LOC100622645	GTP cyclohydrolase 1-like

Position	UniGene	GenBank	Symbol	Description
D12	N/A	XM_003482524	LOC100625698	Gastrin/cholecystokinin type B receptor-like
E01	N/A	XM_003358809	LOC100626182	OX-2 membrane glycoprotein-like
E02	N/A	XM_003357585	LOC100627197	Potassium channel subfamily K member 2-like
E03	Ssc.95056	NM_001032354	LOC606743	A1 adenosine receptor
E04	Ssc.7297	NM_001001864	MAOB	Monoamine oxidase B
E05	Ssc.72142	NM_001198922	MAPK1	Extracellular signal-regulated kinase-2
E06	Ssc.11018	XM_001929490	MAPK14	Mitogen-activated protein kinase 14
E07	Ssc.5924	XM_003360728	MAPK3	Mitogen-activated protein kinase 3
E08	Ssc.83372	XM_003359272	MAPK8	Mitogen-activated protein kinase 8
E09	Ssc.16117	NM_001143690	NOS2	Nitric oxide synthase 2, inducible
E10	Ssc.75350	XM_003134854	NPVF	Neuropeptide VF precursor
E11	Ssc.71680	XM_001929525	NTRK1	Neurotrophic tyrosine kinase, receptor, type 1
E12	Ssc.15820	XM_003356260	OPRD1	Opioid receptor, delta 1
F01	Ssc.16371	XM_003355059	OPRK1	Opioid receptor, kappa 1
F02	Ssc.15774	NM_001001538	OPRM1	Opioid receptor, mu 1
F03	Ssc.30749	XM_001926804	P2RX7	Purinergic receptor P2X, ligand-gated ion channel, 7
F04	Ssc.36621	XM_001926786	P2RY1	Purinergic receptor P2Y, G-protein coupled, 1
F05	Ssc.29121	XM_003353865	P2X3R	Purinergic receptor P2X3
F06	Ssc.121	NM_001004040	PDYN	Prodynorphin
F07	Ssc.11281	XM_003125621	PENK	Proenkephalin
F08	Ssc.23994	NM_214321	PGHS-2	Prostaglandin G/H synthase-2
F09	Ssc.16207	NM_001004037	PLA2G1B	Phospholipase A2, group IB (pancreas)
F10	Ssc.15910	XM_001928692	PNOC	Prepronociceptin
F11	Ssc.58723	NM_213834	PTGER3	Prostaglandin E receptor 3 (subtype EP3)
F12	Ssc.1310	NM_001038631	PTGES	Prostaglandin E synthase
G01	Ssc.84270	XM_001927936	PTGES2	Prostaglandin E synthase 2
G02	Ssc.1986	XM_001926129	PTGS1	Prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase)
G03	Ssc.94392	NM_001129963	RTN4	Reticulon 4
G04	N/A	XM_003483149	SCN11A	Sodium channel, voltage-gated, type XI, alpha subunit
G05	Ssc.91023	XM_003133452	SCN9A	Sodium channel, voltage-gated, type IX, alpha subunit
G06	N/A	XM_003122918	SLC6A2	Solute carrier family 6 (neurotransmitter transporter, noradrenalin), member 2
G07	Ssc.17337	NM_213761	TLR2	Toll-like receptor 2
G08	Ssc.19703	NM_001113039	TLR4	Toll-like receptor 4
G09	Ssc.100	NM_214022	TNF	Tumor necrosis factor
G10	Ssc.73147	XM_001926115	TRPA1	Transient receptor potential cation channel, subfamily A, member 1
G11	N/A	XM_003131845	TRPV3	Transient receptor potential cation channel, subfamily V, member 3
G12	Ssc.5936	NM_213753	TSP0	Translocator protein (18kDa)
H01	Ssc.10316	XM_003357928	ACTB	Actin, beta
H02	Ssc.73773	NM_213978	B2M	Beta-2-microglobulin
H03	Ssc.16135	NM_001206359	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Ssc.4158	NM_001032376	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Ssc.27927	XM_003127305	RPL13A	Ribosomal protein L13a
H06	N/A	SA_00133	SGDC	Pig 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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