RT² Profiler PCR Array (Rotor-Gene® Format)

Human Pain: Neuropathic & Inflammatory

Cat. no. 330231 PAHS-162ZR

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 Human 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 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	Hs.654434	NM_000789	ACE	Angiotensin I converting enzyme (peptidyl-dipeptidase A) 1
A02	Hs.77867	NM_000674	ADORA1	Adenosine A1 receptor
A03	Hs.591251	NM_000024	ADRB2	Adrenergic, beta-2-, receptor, surface
A04	Hs.89499	NM_000698	ALOX5	Arachidonate 5-lipoxygenase
A05	Hs.525572	NM_000710	BDKRB1	Bradykinin receptor B1
A06	Hs.502182	NM_001709	BDNF	Brain-derived neurotrophic factor
A07	Hs.495522	NM_000718	CACNA1B	Calcium channel, voltage-dependent, N type, alpha 1B subunit
A08	Hs.37058	NM_001741	CALCA	Calcitonin-related polypeptide alpha
A09	Hs.458426	NM_000729	CCK	Cholecystokinin
A10	Hs.203	NM_176875	CCKBR	Cholecystokinin B receptor
A11	Hs.303649	NM_002982	CCL2	Chemokine (C-C motif) ligand 2
A12	Hs.511794	NM_001123396	CCR2	Chemokine (C-C motif) receptor 2
B01	Hs.79015	NM_005944	CD200	CD200 molecule
B02	Hs.631659	NM_000616	CD4	CD4 molecule
B03	Hs.10734	NM_000744	CHRNA4	Cholinergic receptor, nicotinic, alpha 4
B04	Hs.75110	NM_016083	CNR1	Cannabinoid receptor 1 (brain)
B05	Hs.73037	NM_001841	CNR2	Cannabinoid receptor 2 (macrophage)
B06	Hs.370408	NM_000754	COMT	Catechol-O-methyltransferase
B07	Hs.591402	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)
B08	Hs.78913	NM_001337	CX3CR1	Chemokine (C-X3-C motif) receptor 1
B09	Hs.591890	NM_000787	DBH	Dopamine beta-hydroxylase (dopamine beta-monooxygenase)
B10	Hs.511899	NM_001955	EDN1	Endothelin 1
B11	Hs.183713	NM_001957	EDNRA	Endothelin receptor type A
B12	Hs.528334	NM_001441	FAAH	Fatty acid amide hydrolase
C01	Hs.86724	NM_000161	GCH1	GTP cyclohydrolase 1
C02	Hs.248114	NM_000514	GDNF	Glial cell derived neurotrophic factor
C03	Hs.558334	NM_007327	GRIN1	Glutamate receptor, ionotropic, N-methyl D-aspartate 1
C04	Hs.654430	NM_000834	GRIN2B	Glutamate receptor, ionotropic, N-methyl D-aspartate 2B
C05	Hs.32945	NM_000838	GRM1	Glutamate receptor, metabotropic 1
C06	Hs.147361	NM_000842	GRM5	Glutamate receptor, metabotropic 5
C07	Hs.247940	NM_000524	HTR1A	5-hydroxytryptamine (serotonin) receptor 1A
C08	Hs.654586	NM_000621	HTR2A	5-hydroxytryptamine (serotonin) receptor 2A
C09	Hs.193717	NM_000572	IL10	Interleukin 10
C10	Hs.83077	NM_001562	IL18	Interleukin 18 (interferon-gamma-inducing factor)
C11	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
C12	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
D01	Hs.89679	NM_000586	IL2	Interleukin 2
D02	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
D03	Hs.172631	NM_000632	ITGAM	Integrin, alpha M (complement component 3 receptor 3 subunit)
D04	Hs.375957	NM_000211	ITGB2	Integrin, beta 2 (complement component 3 receptor 3 and 4 subunit)
D05	Hs.437376	NM_013434	KCNIP3	Kv channel interacting protein 3, calsenilin
D06	Hs.658533	NM_002240	KCNJ6	Potassium inwardly-rectifying channel, subfamily J, member 6
D07	Hs.161851	NM_004518	KCNQ2	Potassium voltage-gated channel, KQT-like subfamily, member 2
D08	Hs.374023	NM_004519	KCNQ3	Potassium voltage-gated channel, KQT-like subfamily, member 3
D09	Hs.654473	NM_000898	MAOB	Monoamine oxidase B
D10	Hs.431850	NM_002745	MAPK1	Mitogen-activated protein kinase 1
D11	Hs.485233	NM_001315	MAPK14	Mitogen-activated protein kinase 14
D12	Hs.861	NM_002746	MAPK3	Mitogen-activated protein kinase 3
E01	Hs.138211	NM_002750	MAPK8	Mitogen-activated protein kinase 8
E02	Hs.2561	NM_002506	NGF	Nerve growth factor (beta polypeptide)
E03	Hs.406293	NM_002529	NTRK1	Neurotrophic tyrosine kinase, receptor, type 1
E04	Hs.372	NM_000911	OPRD1	Opioid receptor, delta 1
E05	Hs.106795	NM_000912	OPRK1	Opioid receptor, kappa 1
E06	Hs.2353	NM_000914	OPRM1	Opioid receptor, mu 1
E07	Hs.146738	NM_002559	P2RX3	Purinergic receptor P2X, ligand-gated ion channel, 3
E08	Hs.321709	NM_002560	P2RX4	Purinergic receptor P2X, ligand-gated ion channel, 4
E09	Hs.729169	NM_002562	P2RX7	Purinergic receptor P2X, ligand-gated ion channel, 7

Position	UniGene	GenBank	Symbol	Description
E10	Hs.654526	NM_002563	P2RY1	Purinergic receptor P2Y, G-protein coupled, 1
E11	Hs.22584	NM_024411	PDYN	Prodynorphin
E12	Hs.339831	NM_006211	PENK	Proenkephalin
F01	Hs.992	NM_000928	PLA2G1B	Phospholipase A2, group IB (pancreas)
F02	Hs.88218	NM_006228	PNOC	Prepronociceptin
F03	Hs.528665	NM_021935	PROK2	Prokineticin 2
F04	Hs.159360	NM_000955	PTGER1	Prostaglandin E receptor 1 (subtype EP1), 42kDa
F05	Hs.445000	NM_198715	PTGER3	Prostaglandin E receptor 3 (subtype EP3)
F06	Hs.199248	NM_000958	PTGER4	Prostaglandin E receptor 4 (subtype EP4)
F07	Hs.146688	NM_004878	PTGES	Prostaglandin E synthase
F08	Hs.495219	NM_025072	PTGES2	Prostaglandin E synthase 2
F09	Hs.50425	NM_006601	PTGES3	Prostaglandin E synthase 3 (cytosolic)
F10	Hs.201978	NM_000962	PTGS1	Prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase)
F11	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
F12	Hs.250443	NM_006514	SCN10A	Sodium channel, voltage-gated, type X, alpha subunit
G01	Hs.591657	NM_014139	SCN11A	Sodium channel, voltage-gated, type XI, alpha subunit
G02	Hs.435274	NM_006922	SCN3A	Sodium channel, voltage-gated, type III, alpha subunit
G03	Hs.439145	NM_002977	SCN9A	Sodium channel, voltage-gated, type IX, alpha subunit
G04	Hs.78036	NM_001043	SLC6A2	Solute carrier family 6 (neurotransmitter transporter, noradrenalin), member 2
G05	Hs.2563	NM_013998	TAC1	Tachykinin, precursor 1
G06	Hs.633301	NM_001058	TACR1	Tachykinin receptor 1
G07	Hs.519033	NM_003264	TLR2	Toll-like receptor 2
G08	Hs.174312	NM_138554	TLR4	Toll-like receptor 4
G09	Hs.241570	NM_000594	TNF	Tumor necrosis factor
G10	Hs.667156	NM_007332	TRPA1	Transient receptor potential cation channel, subfamily A, member 1
G11	Hs.655380	NM_018727	TRPV1	Transient receptor potential cation channel, subfamily V, member 1
G12	Hs.446255	NM_145068	TRPV3	Transient receptor potential cation channel, subfamily V, member 3
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.
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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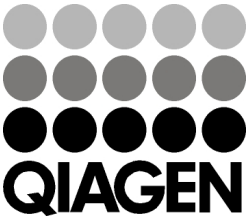

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