RT² Profiler PCR Array (Rotor-Gene® Format)

Mouse Stress & Toxicity PathwayFinder

Cat. no. 330231 PAMM-003ZR

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 Mouse Stress & Toxicity RT² Profiler PCR Array profiles the expression of 84 key genes regulated during cellular responses to stress and toxic compounds. Cells exposed to stress or toxins, either in vitro or in vivo, respond in a variety of ways depending on the stress and the cell type. Key front-line target organs such as heart, kidney, liver, and skin must be equipped to respond to stress-inducing or toxic environmental insults in an appropriate way. Toxicologists use cultured cells from these organs as model systems to ascertain the effects of test compounds. Reactive oxygen species induce oxidative stress, and elevated temperatures induce heat shock. Imbalances in osmolarity and inhibitors of ion channels cause osmotic stress, while protein synthesis inhibitors activate the unfolded protein response. Stress response pathways often cross-talk, particularly under prolonged exposure conditions or exposure to multiple stresses. For example, inflammation induces stress responses, but specific chronic sources of stress, such as oxidative stress and heat shock, also induce inflammation. These stresses can ultimately cause DNA damage or other types of cellular damage, which can lead to cell death if not repaired. Studying the potential activation of these pathways simultaneously can identify compounds or experimental conditions toxic to cells, evaluate the cell's ability to respond to cellular damage, and identify potential interactions between the stress responses. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in cellular stress and toxic insults 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	Mm.1408	NM_009627	Adm	Adrenomedullin
A02	Mm.451	NM_009658	Akr1b3	Aldo-keto reductase family 1, member B3 (aldose reductase)
A03	Mm.18625	NM_007472	Aqp1	Aquaporin 1
A04	Mm.20206	NM_009699	Aqp2	Aquaporin 2
A05	Mm.250786	NM_009700	Aqp4	Aquaporin 4
A06	Mm.250265	NM_009709	Arnt	Aryl hydrocarbon receptor nuclear translocator
A07	Mm.641	NM_009716	Atf4	Activating transcription factor 4
A08	Mm.377046	NM_001081304	Atf6	Activating transcription factor 6
A09	Mm.4068	NM_017406	Atf6b	Activating transcription factor 6 beta
A10	Mm.9852	NM_026217	Atg12	Autophagy-related 12 (yeast)
A11	Mm.22264	NM_053069	Atg5	Autophagy-related 5 (yeast)
A12	Mm.275332	NM_028835	Atg7	Autophagy-related 7 (yeast)
B01	Mm.5088	NM_007499	Atm	Ataxia telangiectasia mutated homolog (human)
B02	Mm.212462	NM_019864	Atr	Ataxia telangiectasia and rad3 related
B03	Mm.178947	NM_019584	Becn1	Beclin 1, autophagy related
B04	Mm.235081	NM_007544	Bid	BH3 interacting domain death agonist
B05	Mm.29820	NM_009761	Bnip3l	BCL2/adenovirus E1B interacting protein 3-like
B06	Mm.1971	NM_007591	Calr	Calreticulin
B07	Mm.283682	NM_139305	Car9	Carbonic anhydrase 9
B08	Mm.1051	NM_009807	Casp1	Caspase 1
B09	Mm.867	NM_011331	Ccl12	Chemokine (C-C motif) ligand 12
B10	Mm.4861	NM_011616	Cd40lg	CD40 ligand
B11	Mm.195663	NM_007669	Cdkn1a	Cyclin-dependent kinase inhibitor 1A (P21)
B12	Mm.15621	NM_021050	Cftr	Cystic fibrosis transmembrane conductance regulator homolog
C01	Mm.16753	NM_007691	Chek1	Checkpoint kinase 1 homolog (S. pombe)
C02	Mm.279308	NM_016681	Chek2	CHK2 checkpoint homolog (S. pombe)
C03	Mm.28767	NM_007768	Crp	C-reactive protein, pentraxin-related
C04	Mm.389334	NM_028119	Ddb2	Damage specific DNA binding protein 2
C05	Mm.110220	NM_007837	Ddit3	DNA-damage inducible transcript 3
C06	Mm.12616	NM_008929	Dnajc3	DnaJ (Hsp40) homolog, subfamily C, member 3
C07	Mm.14543	NM_010104	Edn1	Endothelin 1
C08	Mm.349116	NM_007942	Epo	Erythropoietin
C09	Mm.1626	NM_007987	Fas	Fas (TNF receptor superfamily member 6)
C10	Mm.1776	NM_010239	Fth1	Ferritin heavy chain 1
C11	Mm.72235	NM_007836	Gadd45a	Growth arrest and DNA-damage-inducible 45 alpha
C12	Mm.281298	NM_011817	Gadd45g	Growth arrest and DNA-damage-inducible 45 gamma
D01	Mm.485389	NM_010295	Gclc	Glutamate-cysteine ligase, catalytic subunit
D02	Mm.292676	NM_008129	Gclm	Glutamate-cysteine ligase, modifier subunit
D03	Mm.439649	NM_008163	Grb2	Growth factor receptor bound protein 2
D04	Mm.283573	NM_010344	Gsr	Glutathione reductase
D05	Mm.299292	NM_013541	Gstp1	Glutathione S-transferase, pi 1
D06	Mm.276389	NM_010442	Hmox1	Heme oxygenase (decycling) 1
D07	Mm.1843	NM_010480	Hsp90aa1	Heat shock protein 90, alpha (cytosolic), class A member 1
D08	Mm.87773	NM_011631	Hsp90b1	Heat shock protein 90, beta (Grp94), member 1
D09	Mm.239865	NM_008300	Hspa4	Heat shock protein 4
D10	Mm.39330	NM_011020	Hspa4l	Heat shock protein 4 like
D11	Mm.330160	NM_022310	Hspa5	Heat shock protein 5
D12	Mm.42201	NM_008316	Hus1	Hus1 homolog (S. pombe)
E01	Mm.240327	NM_008337	Ifng	Interferon gamma
E02	Mm.15534	NM_010554	Il1a	Interleukin 1 alpha
E03	Mm.222830	NM_008361	Il1b	Interleukin 1 beta
E04	Mm.1019	NM_031168	Il6	Interleukin 6
E05	Mm.29324	NM_010699	Ldha	Lactate dehydrogenase A
E06	Mm.1639	NM_008562	Mcl1	Myeloid cell leukemia sequence 1
E07	Mm.4406	NM_013599	Mmp9	Matrix metallopeptidase 9
E08	Mm.149071	NM_018736	Mre11a	Meiotic recombination 11 homolog A (S. cerevisiae)
E09	Mm.20866	NM_013752	Nbn	Nibrin

Position	UniGene	GenBank	Symbol	Description
E10	Mm.390057	NM_018823	Nfat5	Nuclear factor of activated T-cells 5
E11	Mm.252	NM_008706	Nqo1	NAD(P)H dehydrogenase, quinone 1
E12	Mm.277779	NM_007415	Parp1	Poly (ADP-ribose) polymerase family, member 1
F01	Mm.30929	NM_011034	Prdx1	Peroxiredoxin 1
F02	Mm.227506	NM_027514	Pvr	Poliovirus receptor
F03	Mm.248489	NM_011233	Rad17	RAD17 homolog (S. pombe)
F04	Mm.471596	NM_011234	Rad51	RAD51 homolog (S. cerevisiae)
F05	Mm.277629	NM_011237	Rad9	RAD9 homolog (S. pombe)
F06	Mm.374799	NM_009068	Ripk1	Receptor (TNFRSF)-interacting serine-threonine kinase 1
F07	Mm.46612	NM_019955	Ripk3	Receptor-interacting serine-threonine kinase 3
F08	Mm.250422	NM_008871	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
F09	Mm.21002	NM_011400	Slc2a1	Solute carrier family 2 (facilitated glucose transporter), member 1
F10	Mm.358665	NM_017391	Slc5a3	Solute carrier family 5 (inositol transporters), member 3
F11	Mm.261564	NM_001081060	Slc9a3	Solute carrier family 9 (sodium/hydrogen exchanger), member 3
F12	Mm.40828	NM_011018	Sqstm1	Sequestosome 1
G01	Mm.38049	NM_021297	Tlr4	Toll-like receptor 4
G02	Mm.1293	NM_013693	Tnf	Tumor necrosis factor
G03	Mm.193430	NM_020275	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
G04	Mm.1258	NM_011609	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
G05	Mm.222	NM_011640	Trp53	Transformation related protein 53
G06	Mm.260618	NM_011660	Txn1	Thioredoxin 1
G07	Mm.37667	NM_175646	Txnl4b	Thioredoxin-like 4B
G08	Mm.210155	NM_015762	Txnrd1	Thioredoxin reductase 1
G09	Mm.271898	NM_009469	Ulk1	Unc-51 like kinase 1 (C. elegans)
G10	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
G11	Mm.469937	NM_013842	Xbp1	X-box binding protein 1
G12	Mm.2806	NM_009531	Xpc	Xeroderma pigmentosum, complementation group C
H01	Mm.328431	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H05	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90 alpha (cytosolic), class B member 1
H06	N/A	SA_00106	MGDC	Mouse 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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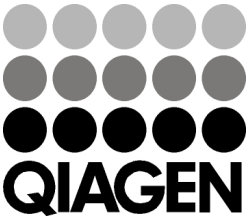

Sample & Assay Technologies