

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

Mouse Unfolded Protein Response

Cat. no. 330231 PAMM-089ZR

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 Mouse Unfolded Protein Response RT² Profiler PCR Array profiles the expression of 84 key genes recognizing and responding to misfolded protein accumulation in the endoplasmic reticulum (ER). Chaperones bound to unfolded proteins in the ER initiate protein kinase cascades that immediately inhibit ER translation, reverse ER translocation, activate ER-specific ubiquitination enzymes, and even induce apoptosis under extreme stress. The signaling event also activates endonucleases to process specific mature cytosolic mRNA into variants that now translate into active transcription factors that increase the expression of heat shock proteins, protein disulfide isomerases, and even more chaperones. The pathway also includes protein glycosylation enzymes mediating ER protein folding quality control and the sensors recognizing, and the transcription factors responding to, stress from cholesterol biosynthesis dysregulation in the ER. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes responding to unfolded protein and other ER stresses 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.



Sample & Assay Technologies

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.34641	NM_011787	Amfr	Autocrine motility factor receptor
A02	Mm.641	NM_009716	Atf4	Activating transcription factor 4
A03	Mm.377046	NM_001081304	Atf6	Activating transcription factor 6
A04	Mm.4068	NM_017406	Atf6b	Activating transcription factor 6 beta
A05	Mm.485508	NM_029705	Atxn3	Ataxin 3
A06	Mm.19904	NM_007527	Bax	Bcl2-associated X protein
A07	Mm.1971	NM_007591	Calr	Calreticulin
A08	Mm.248827	NM_007597	Canx	Calnexin
A09	Mm.296985	NM_009837	Cct4	Chaperonin containing Tcp1, subunit 4 (delta)
A10	Mm.289900	NM_007638	Cct7	Chaperonin containing Tcp1, subunit 7 (eta)
A11	Mm.439656	NM_009883	Cebpb	CCAAT/enhancer binding protein (C/EBP), beta
A12	Mm.12407	NM_013497	Creb3	CAMP responsive element binding protein 3
B01	Mm.294693	NM_145365	Creb3l3	CAMP responsive element binding protein 3-like 3
B02	Mm.110220	NM_007837	Ddit3	DNA-damage inducible transcript 3
B03	Mm.289387	NM_024207	Der1l	Der1-like domain family, member 1
B04	Mm.28131	NM_033562	Der12	Der1-like domain family, member 2
B05	Mm.248776	NM_178055	Dnajb2	DnaJ (Hsp40) homolog, subfamily B, member 2
B06	Mm.27432	NM_013760	Dnajb9	DnaJ (Hsp40) homolog, subfamily B, member 9
B07	Mm.21762	NM_024181	Dnajc10	DnaJ (Hsp40) homolog, subfamily C, member 10
B08	Mm.12616	NM_008929	Dnajc3	DnaJ (Hsp40) homolog, subfamily C, member 3
B09	Mm.10721	NM_020566	Dnajc4	DnaJ (Hsp40) homolog, subfamily C, member 4
B10	Mm.21596	NM_138677	Edem1	ER degradation enhancer, mannosidase alpha-like 1
B11	Mm.337691	NM_001039644	Edem3	ER degradation enhancer, mannosidase alpha-like 3
B12	Mm.21617	NM_001005509	Eif2a	Eukaryotic translation initiation factor 2a
C01	Mm.247167	NM_010121	Eif2ak3	Eukaryotic translation initiation factor 2 alpha kinase 3
C02	Mm.340943	NM_023913	Ern1	Endoplasmic reticulum (ER) to nucleus signalling 1
C03	Mm.20452	NM_012016	Ern2	Endoplasmic reticulum (ER) to nucleus signalling 2
C04	Mm.387108	NM_015774	Ero1l	ERO1-like (<i>S. cerevisiae</i>)
C05	Mm.358706	NM_026184	Ero1lb	ERO1-like beta (<i>S. cerevisiae</i>)
C06	Mm.317701	NM_029572	Erp44	Endoplasmic reticulum protein 44
C07	Mm.27445	NM_015797	Fbxo6	F-box protein 6
C08	Mm.3196	NM_008060	Ganab	Alpha glucosidase 2 alpha neutral subunit
C09	Mm.38851	NM_172672	Ganc	Glucosidase, alpha; neutral C
C10	Mm.482127	NM_024439	H47	Histocompatibility 47
C11	Mm.29151	NM_022331	Herpud1	Homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
C12	Mm.14287	NM_013558	Hspa1l	Heat shock protein 1-like
D01	Mm.296181	NM_008301	Hspa2	Heat shock protein 2
D02	Mm.239865	NM_008300	Hspa4	Heat shock protein 4
D03	Mm.39330	NM_011020	Hspa4l	Heat shock protein 4 like
D04	Mm.330160	NM_022310	Hspa5	Heat shock protein 5
D05	Mm.46175	NM_029307	Hspb9	Heat shock protein, alpha-crystallin-related, B9
D06	Mm.270681	NM_013559	Hsph1	Heat shock 105kDa/110kDa protein 1
D07	Mm.21880	NM_019752	Htra2	HtrA serine peptidase 2
D08	Mm.334452	NM_001081187	Htra4	HtrA serine peptidase 4
D09	Mm.30221	NM_153526	Insig1	Insulin induced gene 1
D10	Mm.27136	NM_178082	Insig2	Insulin induced gene 2
D11	Mm.29778	NM_029103	Manf	Mesencephalic astrocyte-derived neurotrophic factor
D12	Mm.39253	NM_009158	Mapk10	Mitogen-activated protein kinase 10
E01	Mm.21495	NM_016700	Mapk8	Mitogen-activated protein kinase 8
E02	Mm.68933	NM_016961	Mapk9	Mitogen-activated protein kinase 9
E03	Mm.206934	NM_019709	Mbtps1	Membrane-bound transcription factor peptidase, site 1
E04	Mm.37577	NM_172307	Mbtps2	Membrane-bound transcription factor peptidase, site 2
E05	Mm.309520	NM_199469	Nploc4	Nuclear protein localization 4 homolog (<i>S. cerevisiae</i>)
E06	Mm.258923	NM_008749	Nucb1	Nucleobindin 1
E07	Mm.295246	NM_177614	Os9	Amplified in osteosarcoma
E08	Mm.263177	NM_007952	Pdia3	Protein disulfide isomerase associated 3

Position	UniGene	GenBank	Symbol	Description
E09	Mm.10756	NM_011070	Pfdn2	Prefoldin 2
E10	Mm.158264	NM_027044	Pfdn5	Prefoldin 5
E11	Mm.5246	NM_008907	Ppia	Peptidylprolyl isomerase A
E12	Mm.293628	NM_133819	Ppp1r15b	Protein phosphatase 1, regulatory (inhibitor) subunit 15b
F01	Mm.214593	NM_008925	Prkcsh	Protein kinase C substrate 80K-H
F02	Mm.4537	NM_175226	Rnf139	Ring finger protein 139
F03	Mm.274542	NM_019403	Rnf5	Ring finger protein 5
F04	Mm.188544	NM_133933	Rpn1	Ribophorin I
F05	Mm.288741	NM_001001144	Scap	SREBF chaperone
F06	Mm.26017	NM_027016	Sec62	SEC62 homolog (S. cerevisiae)
F07	Mm.214344	NM_153055	Sec63	SEC63-like (S. cerevisiae)
F08	Mm.250605	NM_001039089	Sel11	Sel-1 suppressor of lin-12-like (C. elegans)
F09	Mm.29702	NM_030685	Serp1	Stress-associated endoplasmic reticulum protein 1
F10	Mm.291482	NM_030749	Sil1	Endoplasmic reticulum chaperone SIL1 homolog (S. cerevisiae)
F11	Mm.278701	NM_011480	Srebf1	Sterol regulatory element binding transcription factor 1
F12	Mm.38016	NM_033218	Srebf2	Sterol regulatory element binding factor 2
G01	Mm.149870	NM_028769	Synv1	Synovial apoptosis inhibitor 1, synoviolin
G02	Mm.439645	NM_013686	Tcp1	T-complex protein 1
G03	Mm.154994	NM_144884	Tor1a	Torsin family 1, member A (torsin A)
G04	Mm.458125	NM_019803	Ube2g2	Ubiquitin-conjugating enzyme E2G 2
G05	Mm.371673	NM_001039157	Ube2j2	Ubiquitin-conjugating enzyme E2, J2 homolog (yeast)
G06	Mm.293321	NM_026390	Ubxn4	UBX domain protein 4
G07	Mm.237594	NM_011672	Ufd11	Ubiquitin fusion degradation 1 like
G08	Mm.261022	NM_198899	Uggf1	UDP-glucose glycoprotein glucosyltransferase 1
G09	Mm.213406	NM_001081252	Uggf2	UDP-glucose glycoprotein glucosyltransferase 2
G10	Mm.329277	NM_021522	Usp14	Ubiquitin specific peptidase 14
G11	Mm.245976	NM_009503	Vcp	Valosin containing protein
G12	Mm.469937	NM_013842	Xbp1	X-box binding protein 1
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.
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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