RT² Profiler PCR Array (Rotor-Gene® Format)

Mouse Circadian Rhythms

Cat. no. 330231 PAMM-153ZR

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 Circadian Rhythms RT² Profiler PCR Array profiles the expression of 84 key genes defining and regulating the biological clock. Synchronization, or "entrainment", of the circadian clock occurs via light stimulus of the hypothalamic suprachiasmatic nucleus (SCN) in the brain and via hormone signaling from the SCN in peripheral tissues. Interacting positive and negative circadian gene feedback loops at the transcriptional and post-translational level set up the circadian "oscillator" and insure tight control over transcription factors regulating expression of the appropriate genes required during circadian days or nights. Genes regulated by circadian rhythms are involved in a diverse range of biological processes that affect physiology, metabolism, and behavior. Although the circadian rhythm target genes in its "output" pathways vary widely from tissue to tissue, the transcription factors encoded by central clock and clock-controlled genes are mostly shared across all cell types. Sleeping disorders (such as apnea, insomnia, and desynchronosis) disrupt the timing of the circadian clock, requiring re-entrainment and causing fatigue. Continued disruption of the circadian clock is a source of bodily stress and a risk factor for cancer and cardiovascular disease. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in circadian rhythms 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.42233	NM_009591	Aanat	Arylalkylamine N-acetyltransferase
A02	Mm.290578	NM_020559	Alas1	Aminolevulinic acid synthase 1
A03	Mm.440371	NM_007489	Arntl	Aryl hydrocarbon receptor nuclear translocator-like
A04	Mm.333500	NM_172309	Arntl2	Aryl hydrocarbon receptor nuclear translocator-like 2
A05	Mm.2436	NM_011498	Bhlhe40	Basic helix-loop-helix family, member e40
A06	Mm.154529	NM_024469	Bhlhe41	Basic helix-loop-helix family, member e41
A07	Mm.131530	NM_177407	Camk2a	Calcium/calmodulin-dependent protein kinase II alpha
A08	Mm.439733	NM_007595	Camk2b	Calcium/calmodulin-dependent protein kinase II, beta
A09	Mm.255822	NM_023813	Camk2d	Calcium/calmodulin-dependent protein kinase II, delta
A10	Mm.235182	NM_178597	Camk2g	Calcium/calmodulin-dependent protein kinase II gamma
A11	Mm.75498	NM_013732	Cartpt	CART prepropeptide
A12	Mm.86541	NM_009834	Ccrn4l	CCR4 carbon catabolite repression 4-like (S. cerevisiae)
B01	Mm.35088	NM_009602	Chrnb2	Cholinergic receptor, nicotinic, beta polypeptide 2 (neuronal)
B02	Mm.3552	NM_007715	Clock	Circadian locomotor output cycles kaput
B03	Mm.453295	NM_133828	Creb1	CAMP responsive element binding protein 1
B04	Mm.12407	NM_013497	Creb3	CAMP responsive element binding protein 3
B05	Mm.441911	NM_007770	Crx	Cone-rod homeobox containing gene
B06	Mm.26237	NM_007771	Cry1	Cryptochrome 1 (photolyase-like)
B07	Mm.254181	NM_009963	Cry2	Cryptochrome 2 (photolyase-like)
B08	Mm.26908	NM_146087	Csnk1a1	Casein kinase 1, alpha 1
B09	Mm.216227	NM_139059	Csnk1d	Casein kinase 1, delta
B10	Mm.30199	NM_013767	Csnk1e	Casein kinase 1, epsilon
B11	Mm.23692	NM_007788	Csnk2a1	Casein kinase 2, alpha 1 polypeptide
B12	Mm.440348	NM_009974	Csnk2a2	Casein kinase 2, alpha prime polypeptide
C01	Mm.378235	NM_016974	Dbp	D site albumin promoter binding protein
C02	Mm.181959	NM_007913	Egr1	Early growth response 1
C03	Mm.103737	NM_018781	Egr3	Early growth response 3
C04	Mm.349116	NM_007942	Epo	Erythropoietin
C05	Mm.386776	NM_007953	Esrra	Estrogen related receptor, alpha
C06	Mm.233904	NM_178674	Fbxl21	F-box and leucine-rich repeat protein 21
C07	Mm.214746	NM_015822	Fbxl3	F-box and leucine-rich repeat protein 3
C08	Mm.378937	NM_013546	Hebp1	Heme binding protein 1
C09	Mm.158903	NM_172563	Hlf	Hepatic leukemia factor
C10	Mm.254266	NM_008315	Htr7	5-hydroxytryptamine (serotonin) receptor 7
C11	Mm.105218	NM_008390	Irf1	Interferon regulatory factor 1
C12	Mm.343607	NM_010610	Kcnma1	Potassium large conductance calcium-activated channel, subfamily M, alpha member 1
D01	Mm.196581	NM_011949	Mapk1	Mitogen-activated protein kinase 1
D02	Mm.311337	NM_011951	Mapk14	Mitogen-activated protein kinase 14
D03	Mm.8385	NM_011952	Mapk3	Mitogen-activated protein kinase 3
D04	Mm.29815	NM_145569	Mat2a	Methionine adenosyltransferase II, alpha
D05	Mm.5133	NM_008639	Mtnr1a	Melatonin receptor 1A
D06	Mm.222631	NM_145712	Mtnr1b	Melatonin receptor 1B
D07	Mm.1526	NM_010866	Myod1	Myogenic differentiation 1
D08	Mm.476883	NM_008679	Ncoa3	Nuclear receptor coactivator 3
D09	Mm.136604	NM_017373	Nfil3	Nuclear factor, interleukin 3, regulated
D10	Mm.41974	NM_008700	Nkx2-5	NK2 transcription factor related, locus 5 (Drosophila)
D11	Mm.333709	NM_001011684	Nms	Neuromedin S
D12	Mm.2380	NM_008719	Npas2	Neuronal PAS domain protein 2
E01	Mm.390397	NM_145434	Nr1d1	Nuclear receptor subfamily 1, group D, member 1
E02	Mm.26587	NM_011584	Nr1d2	Nuclear receptor subfamily 1, group D, member 2
E03	Mm.28989	NM_010150	Nr2f6	Nuclear receptor subfamily 2, group F, member 6
E04	Mm.32744	NM_010098	Opn3	Opsin 3
E05	Mm.103670	NM_013887	Opn4	Opsin 4 (melanopsin)
E06	Mm.8026	NM_011038	Pax4	Paired box gene 4
E07	Mm.7373	NM_011065	Per1	Period homolog 1 (Drosophila)
E08	Mm.482463	NM_011066	Per2	Period homolog 2 (Drosophila)

Position	UniGene	GenBank	Symbol	Description
E09	Mm.121361	NM_011067	Per3	Period homolog 3 (Drosophila)
E10	Mm.245261	NM_198934	Pou2f1	POU domain, class 2, transcription factor 1
E11	Mm.212789	NM_011144	Ppara	Peroxisome proliferator activated receptor alpha
E12	Mm.259072	NM_008904	Ppargc1a	Peroxisome proliferative activated receptor, gamma, coactivator 1 alpha
F01	Mm.240313	NM_011073	Prf1	Perforin 1 (pore forming protein)
F02	Mm.19111	NM_008854	Prkaca	Protein kinase, cAMP dependent, catalytic, alpha
F03	Mm.16766	NM_011100	Prkacb	Protein kinase, cAMP dependent, catalytic, beta
F04	Mm.30039	NM_021880	Prkar1a	Protein kinase, cAMP dependent regulatory, type I, alpha
F05	Mm.306163	NM_008923	Prkar1b	Protein kinase, cAMP dependent regulatory, type I beta
F06	Mm.253102	NM_008924	Prkar2a	Protein kinase, cAMP dependent regulatory, type II alpha
F07	Mm.25594	NM_011158	Prkar2b	Protein kinase, cAMP dependent regulatory, type II beta
F08	Mm.222178	NM_011101	Prkca	Protein kinase C, alpha
F09	Mm.207496	NM_008855	Prkcb	Protein kinase C, beta
F10	Mm.283777	NM_144944	Prokr2	Prokineticin receptor 2
F11	Mm.1008	NM_008963	Ptgds	Prostaglandin D2 synthase (brain)
F12	Mm.378450	NM_013646	Rora	RAR-related orphan receptor alpha
G01	Mm.485649	NM_146095	Rorb	RAR-related orphan receptor beta
G02	Mm.4372	NM_011281	Rorc	RAR-related orphan receptor gamma
G03	Mm.261564	NM_001081060	Slc9a3	Solute carrier family 9 (sodium/hydrogen exchanger), member 3
G04	Mm.100399	NM_008540	Smad4	MAD homolog 4 (Drosophila)
G05	Mm.4618	NM_013672	Sp1	Trans-acting transcription factor 1
G06	Mm.278701	NM_011480	Srebf1	Sterol regulatory element binding transcription factor 1
G07	Mm.277403	NM_011488	Stat5a	Signal transducer and activator of transcription 5A
G08	Mm.85544	NM_011547	Tcfap2a	Transcription factor AP-2, alpha
G09	Mm.270278	NM_017376	Tef	Thyrotroph embryonic factor
G10	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G11	Mm.6458	NM_011589	Timeless	Timeless homolog (Drosophila)
G12	Mm.287173	NM_009516	Wee1	WEE 1 homolog 1 (S. pombe)
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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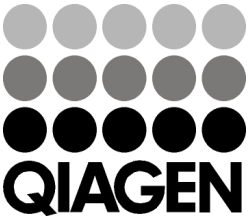

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