

RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Mouse Telomeres & Telomerase

Cat. no. 330231 PAMM-010ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm® BioMark™



Sample & Assay Technologies

Description

The Mouse Telomeres & Telomerase RT² Profiler PCR Array profiles the expression of 84 key genes central to telomere replication and maintenance. Telomeres, repetitive DNA regions of hexanucleotide repeats, protect chromosomal ends from deterioration during DNA replication. Telomerase (TERT), a reverse transcriptase, forms a complex with an RNA template and cofactors to extend telomeres. The shelterin protein complex then binds the 3' single-stranded end of telomeric DNA, protecting it from DNA damage responses. Inhibition of this process leads to short telomeres and premature aging-related diseases, whereas uncontrolled telomere lengthening promotes carcinogenesis. Research into telomeres often utilizes simpler model organisms, such as yeast, meaning that many mechanistic details have yet to be discovered or confirmed in mammalian systems by you. This array contains genes involved in telomere maintenance as well as genes comprising the telomerase and shelterin complexes and their regulators. This array also includes genes recently described in telomere regulation, such as the SLX4 complex, as well as other genes associated with telomeres but with poorly understood functions. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in telomere maintenance and genome integrity with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² Profiler PCR Arrays in formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

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 (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	Abl1	Acd	Akt1	Atm	Atp5c1	Bcl2	Blm	Cdk2	Chek1	Chek2	Dclre1b	Dclre1c
B	Dkc1	Egf	Eif5b	Eme1	Ercc1	Ercc4	Esf1	Gar1	Hat1	Hnrnpa2b1	Hnrnpd	Hsp90aa1
C	Hspa11	Igf1	Kras	Krit1	Men1	Mre11a	Msh2	Msh3	Mus81	Myc	Nbn	Nhp2
D	Nop10	Obfc1	Parp1	Pax8	Pif1	Pinx1	Plk1	Pot1a	Pparg	Ppp2r1a	Ppp2r1b	Prkca
E	Prkcb	Prkdc	Ptges3	Rad17	Rad50	Rap1a	Rapgef1	Rassf1	Rb1	Rfc1	Rif1	Rtel1
F	Sart1	Sirt2	Sirt6	Slx4	Smad3	Smg6	Sp1	Ssb	Sun1	Tep1	Terf1	Terf2
G	Terf2ip	Tert	Tgfb1	Tinf2	Tnks	Tnks2	Tpp1	Trp53	Trp53bp1	Wrap53	Xrcc5	Xrcc6
H	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.1318	NM_009594	Abl1	C-abl oncogene 1, non-receptor tyrosine kinase
A02	Mm.386965	NM_001012638	Acd	Adrenocortical dysplasia
A03	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A04	Mm.5088	NM_007499	Atm	Ataxia telangiectasia mutated homolog (human)
A05	Mm.12677	NM_020615	Atp5c1	ATP synthase, H+ transporting, mitochondrial F1 complex, gamma polypeptide 1
A06	Mm.257460	NM_009741	Bcl2	B-cell leukemia/lymphoma 2
A07	Mm.12932	NM_007550	Blm	Bloom syndrome, RecQ helicase-like
A08	Mm.111326	NM_016756	Cdk2	Cyclin-dependent kinase 2
A09	Mm.16753	NM_007691	Chek1	Checkpoint kinase 1 homolog (S. pombe)
A10	Mm.279308	NM_016681	Chek2	CHK2 checkpoint homolog (S. pombe)
A11	Mm.374850	NM_133865	Dclre1b	DNA cross-link repair 1B, PSO2 homolog (S. cerevisiae)
A12	Mm.23483	NM_146114	Dclre1c	DNA cross-link repair 1C, PSO2 homolog (S. cerevisiae)
B01	Mm.291062	NM_001030307	Dkc1	Dyskeratosis congenita 1, dyskerin homolog (human)
B02	Mm.252481	NM_010113	Egf	Epidermal growth factor
B03	Mm.260943	NM_198303	Eif5b	Eukaryotic translation initiation factor 5B
B04	Mm.358937	NM_177752	Eme1	Essential meiotic endonuclease 1 homolog 1 (S. pombe)
B05	Mm.280913	NM_007948	Ercc1	Excision repair cross-complementing rodent repair deficiency, complementation group 1
B06	Mm.287837	NM_015769	Ercc4	Excision repair cross-complementing rodent repair deficiency, complementation group 4
B07	Mm.21228	NM_001081090	Esf1	ESF1, nucleolar pre-rRNA processing protein, homolog (S. cerevisiae)
B08	Mm.24873	NM_026578	Gar1	GAR1 ribonucleoprotein homolog (yeast)
B09	Mm.272472	NM_026115	Hat1	Histone aminotransferase 1
B10	Mm.155896	NM_182650	Hnrnpa2b1	Heterogeneous nuclear ribonucleoprotein A2/B1
B11	Mm.150231	NM_007516	Hnrnpd	Heterogeneous nuclear ribonucleoprotein D
B12	Mm.1843	NM_010480	Hsp90aa1	Heat shock protein 90, alpha (cytosolic), class A member 1
C01	Mm.14287	NM_013558	Hspa11	Heat shock protein 1-like
C02	Mm.268521	NM_010512	Igf1	Insulin-like growth factor 1
C03	Mm.383182	NM_021284	Kras	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
C04	Mm.32368	NM_030675	Krit1	KRIT1, ankyrin repeat containing
C05	Mm.12917	NM_008583	Men1	Multiple endocrine neoplasia 1
C06	Mm.149071	NM_018736	Mre11a	Meiotic recombination 11 homolog A (S. cerevisiae)
C07	Mm.4619	NM_008628	Msh2	MutS homolog 2 (E. coli)
C08	Mm.343101	NM_010829	Msh3	MutS homolog 3 (E. coli)
C09	Mm.27697	NM_027877	Mus81	MUS81 endonuclease homolog (yeast)
C10	Mm.2444	NM_010849	Myc	Myelocytomatosis oncogene
C11	Mm.20866	NM_013752	Nbn	Nibrin
C12	Mm.28203	NM_026631	Nhp2	NHP2 ribonucleoprotein homolog (yeast)
D01	Mm.272346	NM_025403	Nop10	NOP10 ribonucleoprotein homolog (yeast)
D02	Mm.218048	NM_175360	Obfc1	Oligonucleotide/oligosaccharide-binding fold containing 1
D03	Mm.277779	NM_007415	Parp1	Poly (ADP-ribose) polymerase family, member 1
D04	Mm.2533	NM_011040	Pax8	Paired box gene 8
D05	Mm.211032	NM_172453	Pif1	PIF1 5'-to-3' DNA helicase homolog (S. cerevisiae)
D06	Mm.379214	NM_028228	Pinx1	PIN2/TERF1 interacting, telomerase inhibitor 1

Position	UniGene	GenBank	Symbol	Description
D07	Mm.16525	NM_011121	Plk1	Polo-like kinase 1 (Drosophila)
D08	Mm.274589	NM_133931	Pot1a	Protection of telomeres 1A
D09	Mm.3020	NM_011146	Pparg	Peroxisome proliferator activated receptor gamma
D10	Mm.294138	NM_016891	Ppp2r1a	Protein phosphatase 2 (formerly 2A), regulatory subunit A (PR 65), alpha isoform
D11	Mm.7726	NM_001034085	Ppp2r1b	Protein phosphatase 2 (formerly 2A), regulatory subunit A (PR 65), beta isoform
D12	Mm.222178	NM_011101	Prkca	Protein kinase C, alpha
E01	Mm.207496	NM_008855	Prkcb	Protein kinase C, beta
E02	Mm.71	NM_011159	Prkdc	Protein kinase, DNA activated, catalytic polypeptide
E03	Mm.305816	NM_019766	Ptges3	Prostaglandin E synthase 3 (cytosolic)
E04	Mm.248489	NM_011233	Rad17	RAD17 homolog (S. pombe)
E05	Mm.4888	NM_009012	Rad50	RAD50 homolog (S. cerevisiae)
E06	Mm.458171	NM_145541	Rap1a	RAS-related protein-1a
E07	Mm.298274	NM_054050	Rapgef1	Rap guanine nucleotide exchange factor (GEF) 1
E08	Mm.12091	NM_019713	Rassf1	Ras association (RalGDS/AF-6) domain family member 1
E09	Mm.273862	NM_009029	Rb1	Retinoblastoma 1
E10	Mm.148877	NM_011258	Rfc1	Replication factor C (activator 1) 1
E11	Mm.254530	NM_175238	Rif1	Rap1 interacting factor 1 homolog (yeast)
E12	Mm.11333	NM_001001882	Rtel1	Regulator of telomere elongation helicase 1
F01	Mm.34562	NM_016882	Sart1	Squamous cell carcinoma antigen recognized by T-cells 1
F02	Mm.272443	NM_022432	Sirt2	Sirtuin 2 (silent mating type information regulation 2, homolog) 2 (S. cerevisiae)
F03	Mm.25643	NM_181586	Sirt6	Sirtuin 6 (silent mating type information regulation 2, homolog) 6 (S. cerevisiae)
F04	Mm.29935	NM_177472	Slx4	SLX4 structure-specific endonuclease subunit homolog (S. cerevisiae)
F05	Mm.7320	NM_016769	Smad3	MAD homolog 3 (Drosophila)
F06	Mm.288460	NM_001002764	Smg6	Smg-6 homolog, nonsense mediated mRNA decay factor (C. elegans)
F07	Mm.4618	NM_013672	Sp1	Trans-acting transcription factor 1
F08	Mm.10508	NM_009278	Ssb	Sjogren syndrome antigen B
F09	Mm.210845	NM_024451	Sun1	Sad1 and UNC84 domain containing 1
F10	Mm.318736	NM_009351	Tep1	Telomerase associated protein 1
F11	Mm.4306	NM_009352	Terf1	Telomeric repeat binding factor 1
F12	Mm.6402	NM_009353	Terf2	Telomeric repeat binding factor 2
G01	Mm.213064	NM_020584	Terf2ip	Telomeric repeat binding factor 2, interacting protein
G02	Mm.10109	NM_009354	Tert	Telomerase reverse transcriptase
G03	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G04	Mm.29346	NM_145705	Tinf2	Terf1 (TRF1)-interacting nuclear factor 2
G05	Mm.88364	NM_175091	Tnks	Tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase
G06	Mm.249310	NM_001163635	Tnks2	Tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase 2
G07	Mm.20837	NM_009906	Tpp1	Tripeptidyl peptidase I
G08	Mm.222	NM_011640	Trp53	Transformation related protein 53
G09	Mm.215389	NM_013735	Trp53bp1	Transformation related protein 53 binding protein 1
G10	Mm.31586	NM_144824	Wrap53	WD repeat containing, antisense to TP53
G11	Mm.246952	NM_009533	Xrcc5	X-ray repair complementing defective repair in Chinese hamster cells 5
G12	Mm.288809	NM_010247	Xrcc6	X-ray repair complementing defective repair in Chinese hamster cells 6
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 qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT ² SYBR Green ROX [™] qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT ² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* 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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