RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Telomeres & Telomerase

Cat. no. 330231 PARN-010ZR

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 Rat 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*.

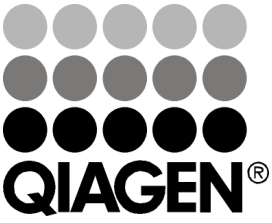
Shipping and storage

RT² Profiler PCR Arrays in 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	Rn.3105	NM_001100850	Abl1	C-abl oncogene 1, receptor tyrosine kinase
A02	Rn.8611	NM_001037193	Acd	Adrenocortical dysplasia homolog (mouse)
A03	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A04	Rn.214048	NM_001106821	Atm	Ataxia telangiectasia mutated homolog (human)
A05	Rn.63959	NM_053825	Atp5c1	ATP synthase, H+ transporting, mitochondrial F1 complex, gamma polypeptide 1
A06	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
A07	Rn.211198	NM_001107526	Blm	Bloom syndrome, RecQ helicase-like
A08	Rn.104460	NM_199501	Cdk2	Cyclin dependent kinase 2
A09	Rn.33267	NM_080400	Chek1	CHK1 checkpoint homolog (S. pombe)
A10	Rn.163213	NM_053677	Chek2	CHK2 checkpoint homolog (S. pombe)
A11	Rn.39355	NM_001025687	Dclre1b	DNA cross-link repair 1B, PSO2 homolog (S. cerevisiae)
A12	Rn.204346	NM_147145	Dclre1c	DNA cross-link repair 1C, PSO2 homolog (S. cerevisiae)
B01	Rn.4223	NM_133419	Dkc1	Dyskeratosis congenita 1, dyskerin
B02	Rn.6075	NM_012842	Egf	Epidermal growth factor
B03	Rn.144707	NM_001105830	Eme1	Essential meiotic endonuclease 1 homolog 1 (S. pombe)
B04	Rn.7320	NM_001106228	Ercc1	Excision repair cross-complementing rodent repair deficiency, complementation group 1
B05	Rn.195555	XM_222534	Ercc4	Excision repair cross-complementing rodent repair deficiency, complementation group 4
B06	Rn.22208	NM_001100771	Esf1	ESF1, nucleolar pre-rRNA processing protein, homolog (S. cerevisiae)
B07	Rn.139751	NM_001009657	Hat1	Histone acetyltransferase 1
B08	Rn.219575	NM_001108418	Heatr1	HEAT repeat containing 1
B09	Rn.4057	NM_001104613	Hnrnpa2b1	Heterogeneous nuclear ribonucleoprotein A2/B1
B10	Rn.94022	NM_024404	Hnrpd	Heterogeneous nuclear ribonucleoprotein D
B11	Rn.119867	NM_175761	Hsp90aa1	Heat shock protein 90, alpha (cytosolic), class A member 1
B12	Rn.187184	NM_212546	Hspa1l	Heat shock protein 1-like
C01	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
C02	Rn.8093	NM_199099	Impdh2	IMP (inosine monophosphate) dehydrogenase 2
C03	Rn.24554	NM_031515	Kras	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
C04	Rn.162726	NM_001108618	Krit1	KRIT1, ankyrin repeat containing
C05	Rn.7652	NM_138509	Mapre1	Microtubule-associated protein, RP/EB family, member 1
C06	Rn.6775	NM_019208	Men1	Multiple endocrine neoplasia 1
C07	Rn.209040	NM_022279	Mre11a	MRE11 meiotic recombination 11 homolog A (S. cerevisiae)
C08	Rn.3174	NM_031058	Msh2	MutS homolog 2 (E. coli)
C09	Rn.162551	XM_001065837	Msh3	MutS homolog 3 (E. coli)
C10	Rn.137652	NM_001025645	Mus81	MUS81 endonuclease homolog (S. cerevisiae)
C11	Rn.12072	NM_012603	Myc	Myelocytomatosis oncogene
C12	Rn.25214	NM_138873	Nbn	Nibrin
D01	Rn.4216	NM_001105779	Nhp2	NHP2 ribonucleoprotein homolog (yeast)
D02	Rn.145204	NM_001025732	Nop56	NOP56 ribonucleoprotein homolog (yeast)
D03	Rn.15899	NM_001011943	Obfc1	Oligonucleotide/oligosaccharide-binding fold containing 1
D04	Rn.11327	NM_013063	Parp1	Poly (ADP-ribose) polymerase 1
D05	Rn.10392	NM_031141	Pax8	Paired box 8
D06	Rn.15365	NM_001083337	Pinx1	PIN2-interacting protein 1
D07	Rn.11034	NM_017100	Plk1	Polo-like kinase 1 (Drosophila)
D08	Rn.23443	NM_013124	Pparg	Peroxisome proliferator-activated receptor gamma
D09	Rn.4108	NM_057140	Ppp2r1a	Protein phosphatase 2 (formerly 2A), regulatory subunit A, alpha isoform
D10	Rn.163017	NM_001025418	Ppp2r1b	Protein phosphatase 2 (formerly 2A), regulatory subunit A, beta isoform
D11	Rn.44437	NM_022209	Ppp2r2b	Protein phosphatase 2 (formerly 2A), regulatory subunit B, beta isoform
D12	Rn.207908	NM_001105713	Prkca	Protein kinase C, alpha
E01	Rn.91118	NM_012713	Prkcb	Protein kinase C, beta
E02	Rn.24110	NM_001108327	Prkdc	Protein kinase, DNA activated, catalytic polypeptide
E03	Rn.211968	NM_001014272	Ptges3l1	Prostaglandin E synthase 3-like 1
E04	Rn.41055	XM_226016	Pura	Purine rich element binding protein A
E05	Rn.154275	NM_001024778	Rad17	RAD17 homolog (S. pombe)
E06	Rn.51136	NM_022246	Rad50	RAD50 homolog (S. cerevisiae)

Position	UniGene	GenBank	Symbol	Description
E07	Rn.106321	NM_001005765	Rap1a	RAP1A, member of RAS oncogene family
E08	Rn.85879	XM_216018	Rapgef1	Rap guanine nucleotide exchange factor (GEF) 1
E09	Rn.12223	NM_013135	Rasa1	RAS p21 protein activator (GTPase activating protein) 1
E10	Rn.83042	NM_001007754	Rassf1	Ras association (RalGDS/AF-6) domain family member 1
E11	Rn.55115	NM_017045	Rb1	Retinoblastoma 1
E12	Rn.103272	NM_053547	Rfc1	Replication factor C (activator 1) 1
F01	Rn.25144	NM_031596	Sart1	Squamous cell carcinoma antigen recognized by T cells
F02	Rn.59887	NM_001008368	Sirt2	Sirtuin (silent mating type information regulation 2 homolog) 2 (S. cerevisiae)
F03	Rn.8108	NM_001031649	Sirt6	Sirtuin (silent mating type information regulation 2 homolog) 6 (S. cerevisiae)
F04	Rn.10636	NM_013095	Smad3	SMAD family member 3
F05	Rn.1945	NM_001105808	Smg6	Smg-6 homolog, nonsense mediated mRNA decay factor (C. elegans)
F06	Rn.11169	NM_031117	Snrpn	Small nuclear ribonucleoprotein polypeptide N
F07	Rn.44609	NM_012655	Sp1	Sp1 transcription factor
F08	Rn.24494	NM_031119	Ssb	Sjogren syndrome antigen B
F09	Rn.5890	NM_022591	Tep1	Telomerase associated protein 1
F10	Rn.33853	NM_001012464	Terf1	Telomeric repeat binding factor (NIMA-interacting) 1
F11	Rn.35087	NM_001108448	Terf2	Telomeric repeat binding factor 2
F12	Rn.2055	NM_001013143	Terf2ip	Telomeric repeat binding factor 2, interacting protein
G01	Rn.48802	NM_053423	Tert	Telomerase reverse transcriptase
G02	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G03	Rn.107132	NM_001006962	Tinf2	TERF1 (TRF1)-interacting nuclear factor 2
G04	Rn.213840	NM_001106084	Tnks	Tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase
G05	Rn.75288	NM_001107607	Tnks2	Tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase 2
G06	Rn.54443	NM_030989	Tp53	Tumor protein p53
G07	Rn.221896	NM_001106501	Tp53bp1	Tumor protein p53 binding protein 1
G08	Rn.162472	NM_031357	Tpp1	Tripeptidyl peptidase I
G09	Rn.100642	NM_001007147	Unc84a	Unc-84 homolog A (C. elegans)
G10	Rn.23316	NM_001007610	Wrap53	WD repeat containing, antisense to TP53
G11	Rn.52078	NM_177419	Xrcc5	X-ray repair complementing defective repair in Chinese hamster cells 5
G12	Rn.161996	NM_139080	Xrcc6	X-ray repair complementing defective repair in Chinese hamster cells 6
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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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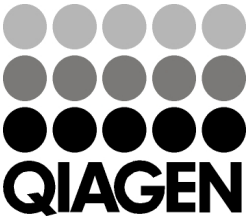

Sample & Assay Technologies