RT² Profiler PCR Array (Rotor-Gene® Format)

Human Telomeres & Telomerase

Cat. no. 330231 PAHS-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 Human 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	Hs.431048	NM_005157	ABL1	C-abl oncogene 1, non-receptor tyrosine kinase
A02	Hs.78019	NM_022914	ACD	Adrenocortical dysplasia homolog (mouse)
A03	Hs.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
A04	Hs.367437	NM_000051	ATM	Ataxia telangiectasia mutated
A05	Hs.271135	NM_005174	ATP5C1	ATP synthase, H+ transporting, mitochondrial F1 complex, gamma polypeptide 1
A06	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A07	Hs.716515	NM_000057	BLM	Bloom syndrome, RecQ helicase-like
A08	Hs.19192	NM_001798	CDK2	Cyclin-dependent kinase 2
A09	Hs.24529	NM_001274	CHEK1	CHK1 checkpoint homolog (S. pombe)
A10	Hs.291363	NM_007194	CHEK2	CHK2 checkpoint homolog (S. pombe)
A11	Hs.591412	NM_022836	DCLRE1B	DNA cross-link repair 1B
A12	Hs.656065	NM_022487	DCLRE1C	DNA cross-link repair 1C
B01	Hs.4747	NM_001363	DKC1	Dyskeratosis congenita 1, dyskerin
B02	Hs.419815	NM_001963	EGF	Epidermal growth factor
B03	Hs.514330	NM_152463	EME1	Essential meiotic endonuclease 1 homolog 1 (S. pombe)
B04	Hs.435981	NM_001983	ERCC1	Excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes overlapping antisense sequence)
B05	Hs.567265	NM_005236	ERCC4	Excision repair cross-complementing rodent repair deficiency, complementation group 4
B06	Hs.69851	NM_018983	GAR1	GAR1 ribonucleoprotein homolog (yeast)
B07	Hs.632532	NM_003642	HAT1	Histone acetyltransferase 1
B08	Hs.487774	NM_002137	HNRNPA2B1	Heterogeneous nuclear ribonucleoprotein A2/B1
B09	Hs.480073	NM_002138	HNRNPD	Heterogeneous nuclear ribonucleoprotein D (AU-rich element RNA binding protein 1, 37kDa)
B10	Hs.525600	NM_001017963	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
B11	Hs.690634	NM_005527	HSPA1L	Heat shock 70kDa protein 1-like
B12	Hs.160562	NM_000618	IGF1	Insulin-like growth factor 1 (somatomedin C)
C01	Hs.505033	NM_004985	KRAS	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
C02	Hs.531987	NM_194454	KRIT1	KRIT1, ankyrin repeat containing
C03	Hs.423348	NM_000244	MEN1	Multiple endocrine neoplasia I
C04	Hs.192649	NM_005590	MRE11A	MRE11 meiotic recombination 11 homolog A (S. cerevisiae)
C05	Hs.597656	NM_000251	MSH2	MutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli)
C06	Hs.280987	NM_002439	MSH3	MutS homolog 3 (E. coli)
C07	Hs.288798	NM_025128	MUS81	MUS81 endonuclease homolog (S. cerevisiae)
C08	Hs.202453	NM_002467	MYC	V-myc myelocytomatosis viral oncogene homolog (avian)
C09	Hs.492208	NM_002485	NBN	Nibrin
C10	Hs.79110	NM_005381	NCL	Nucleolin
C11	Hs.728908	NM_017838	NHP2	NHP2 ribonucleoprotein homolog (yeast)
C12	Hs.14317	NM_018648	NOP10	NOP10 ribonucleoprotein homolog (yeast)
D01	Hs.62314	NM_024928	OBFC1	Oligonucleotide/oligosaccharide-binding fold containing 1
D02	Hs.177766	NM_001618	PARP1	Poly (ADP-ribose) polymerase 1
D03	Hs.469728	NM_003466	PAX8	Paired box 8
D04	Hs.112160	NM_025049	PIF1	PIF1 5'-to-3' DNA helicase homolog (S. cerevisiae)
D05	Hs.490991	NM_017884	PINX1	PIN2/TERF1 interacting, telomerase inhibitor 1
D06	Hs.592049	NM_005030	PLK1	Polo-like kinase 1
D07	Hs.31968	NM_015450	POT1	Protection of telomeres 1 homolog (S. pombe)
D08	Hs.162646	NM_015869	PPARG	Peroxisome proliferator-activated receptor gamma
D09	Hs.467192	NM_014225	PPP2R1A	Protein phosphatase 2, regulatory subunit A, alpha
D10	Hs.584790	NM_002716	PPP2R1B	Protein phosphatase 2, regulatory subunit A, beta
D11	Hs.531704	NM_002737	PRKCA	Protein kinase C, alpha
D12	Hs.460355	NM_002738	PRKCB	Protein kinase C, beta
E01	Hs.491682	NM_006904	PRKDC	Protein kinase, DNA-activated, catalytic polypeptide
E02	Hs.50425	NM_006601	PTGES3	Prostaglandin E synthase 3 (cytosolic)
E03	Hs.443121	NM_005859	PURA	Purine-rich element binding protein A
E04	Hs.16184	NM_002873	RAD17	RAD17 homolog (S. pombe)
E05	Hs.655835	NM_005732	RAD50	RAD50 homolog (S. cerevisiae)

Position	UniGene	GenBank	Symbol	Description
E06	Hs.190334	NM_002884	RAP1A	RAP1A, member of RAS oncogene family
E07	Hs.127897	NM_005312	RAPGEF1	Rap guanine nucleotide exchange factor (GEF) 1
E08	Hs.476270	NM_007182	RASSF1	Ras association (RalGDS/AF-6) domain family member 1
E09	Hs.408528	NM_000321	RB1	Retinoblastoma 1
E10	Hs.507475	NM_002913	RFC1	Replication factor C (activator 1) 1, 145kDa
E11	Hs.655671	NM_018151	RIF1	RAP1 interacting factor homolog (yeast)
E12	Hs.434878	NM_016434	RTEL1	Regulator of telomere elongation helicase 1
F01	Hs.502883	NM_005146	SART1	Squamous cell carcinoma antigen recognized by T cells
F02	Hs.466693	NM_012237	SIRT2	Sirtuin 2
F03	Hs.423756	NM_016539	SIRT6	Sirtuin 6
F04	Hs.143681	NM_032444	SLX4	SLX4 structure-specific endonuclease subunit homolog (S. cerevisiae)
F05	Hs.714621	NM_005902	SMAD3	SMAD family member 3
F06	Hs.448342	NM_017575	SMG6	Smg-6 homolog, nonsense mediated mRNA decay factor (C. elegans)
F07	Hs.620754	NM_138473	SP1	Sp1 transcription factor
F08	Hs.632535	NM_003142	SSB	Sjogren syndrome antigen B (autoantigen La)
F09	Hs.438072	NM_025154	SUN1	Sad1 and UNC84 domain containing 1
F10	Hs.508835	NM_007110	TEP1	Telomerase-associated protein 1
F11	Hs.442707	NM_017489	TERF1	Telomeric repeat binding factor (NIMA-interacting) 1
F12	Hs.63335	NM_005652	TERF2	Telomeric repeat binding factor 2
G01	Hs.301419	NM_018975	TERF2IP	Telomeric repeat binding factor 2, interacting protein
G02	Hs.492203	NM_198253	TERT	Telomerase reverse transcriptase
G03	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
G04	Hs.496191	NM_012461	TINF2	TERF1 (TRF1)-interacting nuclear factor 2
G05	Hs.370267	NM_003747	TNKS	Tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase
G06	Hs.329327	NM_025235	TNKS2	Tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase 2
G07	Hs.654481	NM_000546	TP53	Tumor protein p53
G08	Hs.440968	NM_005657	TP53BP1	Tumor protein p53 binding protein 1
G09	Hs.523454	NM_000391	TPP1	Tripeptidyl peptidase I
G10	Hs.437460	NM_018081	WRAP53	WD repeat containing, antisense to TP53
G11	Hs.388739	NM_021141	XRCC5	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining)
G12	Hs.292493	NM_001469	XRCC6	X-ray repair complementing defective repair in Chinese hamster cells 6
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human 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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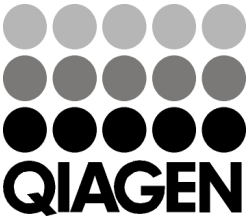

Sample & Assay Technologies