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

Human DNA Repair

Cat. no. 330231 PAHS-042ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² 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
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

QIAGEN®

Sample & Assay Technologies

Description

The Human DNA Repair RT² Profiler PCR Array profiles the expression of 84 key genes encoding the enzymes that repair damaged DNA. This array represents genes involved in the base-excision, nucleotide excision, mismatch, double-strand break, and other repair processes. Daily exposure to environmental agents (such as reactive oxygen species, methylating agents, UV light and other ionizing radiation) and even normal physiological processes (like replication and recombination) all damage DNA. Cells must repair DNA damage to prevent mutations from propagating and accumulating and to maintain genome integrity and stability. Inherited and acquired defects in DNA repair lead to accelerated aging and increased predisposition to cancer. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in DNA Repair 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	APEX1	APEX2	ATM	ATR	ATXN3	BRCA1	BRCA2	BRIP1	CCNH	CCNO	CDK7	DDB1
B	DDB2	DMC1	ERCC1	ERCC2	ERCC3	ERCC4	ERCC5	ERCC6	ERCC8	EXO1	FEN1	LIG1
C	LIG3	LIG4	MGMT	MLH1	MLH3	MMS19	MPG	MRE11A	MSH2	MSH3	MSH4	MSH5
D	MSH6	MUTYH	NEIL1	NEIL2	NEIL3	NTHL1	OGG1	PARP1	PARP2	PARP3	PMS1	PMS2
E	PNKP	POLB	POLD3	POLL	PRKDC	RAD18	RAD21	RAD23A	RAD23B	RAD50	RAD51	RAD51B
F	RAD51C	RAD51D	RAD52	RAD54L	RFC1	RPA1	RPA3	SLK	SMUG1	TDG	TOP3A	TOP3B
G	TREX1	UNG	XAB2	XPA	XPC	XRCC1	XRCC2	XRCC3	XRCC4	XRCC5	XRCC6	XRCC6BP1
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.73722	NM_080649	APEX1	APEX nuclease (multifunctional DNA repair enzyme) 1
A02	Hs.659558	NM_014481	APEX2	APEX nuclease (apurinic/apyrimidinic endonuclease) 2
A03	Hs.367437	NM_000051	ATM	Ataxia telangiectasia mutated
A04	Hs.271791	NM_001184	ATR	Ataxia telangiectasia and Rad3 related
A05	Hs.532632	NM_004993	ATXN3	Ataxin 3
A06	Hs.194143	NM_007294	BRCA1	Breast cancer 1, early onset
A07	Hs.34012	NM_000059	BRCA2	Breast cancer 2, early onset
A08	Hs.532799	NM_032043	BRIP1	BRCA1 interacting protein C-terminal helicase 1
A09	Hs.292524	NM_001239	CCNH	Cyclin H
A10	Hs.3041	NM_021147	CCNO	Cyclin O
A11	Hs.184298	NM_001799	CDK7	Cyclin-dependent kinase 7
A12	Hs.290758	NM_001923	DDB1	Damage-specific DNA binding protein 1, 127kDa
B01	Hs.700338	NM_000107	DDB2	Damage-specific DNA binding protein 2, 48kDa
B02	Hs.339396	NM_007068	DMC1	DMC1 dosage suppressor of mck1 homolog, meiosis-specific homologous recombination (yeast)
B03	Hs.435981	NM_001983	ERCC1	Excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes overlapping antisense sequence)
B04	Hs.487294	NM_000400	ERCC2	Excision repair cross-complementing rodent repair deficiency, complementation group 2
B05	Hs.469872	NM_000122	ERCC3	Excision repair cross-complementing rodent repair deficiency, complementation group 3 (xeroderma pigmentosum group B complementing)
B06	Hs.567265	NM_005236	ERCC4	Excision repair cross-complementing rodent repair deficiency, complementation group 4
B07	Hs.258429	NM_000123	ERCC5	Excision repair cross-complementing rodent repair deficiency, complementation group 5
B08	Hs.654449	NM_000124	ERCC6	Excision repair cross-complementing rodent repair deficiency, complementation group 6
B09	Hs.435237	NM_000082	ERCC8	Excision repair cross-complementing rodent repair deficiency, complementation group 8
B10	Hs.498248	NM_130398	EXO1	Exonuclease 1
B11	Hs.409065	NM_004111	FEN1	Flap structure-specific endonuclease 1
B12	Hs.1770	NM_000234	LIG1	Ligase I, DNA, ATP-dependent
C01	Hs.100299	NM_002311	LIG3	Ligase III, DNA, ATP-dependent
C02	Hs.166091	NM_002312	LIG4	Ligase IV, DNA, ATP-dependent
C03	Hs.501522	NM_002412	MGMT	O-6-methylguanine-DNA methyltransferase
C04	Hs.195364	NM_000249	MLH1	MutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)
C05	Hs.436650	NM_014381	MLH3	MutL homolog 3 (E. coli)
C06	Hs.500721	NM_022362	MMS19	MMS19 nucleotide excision repair homolog (S. cerevisiae)
C07	Hs.459596	NM_002434	MPG	N-methylpurine-DNA glycosylase
C08	Hs.192649	NM_005590	MRE11A	MRE11 meiotic recombination 11 homolog A (S. cerevisiae)
C09	Hs.597656	NM_000251	MSH2	MutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli)
C10	Hs.280987	NM_002439	MSH3	MutS homolog 3 (E. coli)
C11	Hs.216639	NM_002440	MSH4	MutS homolog 4 (E. coli)
C12	Hs.647011	NM_002441	MSH5	MutS homolog 5 (E. coli)
D01	Hs.445052	NM_000179	MSH6	MutS homolog 6 (E. coli)

Position	UniGene	GenBank	Symbol	Description
D02	Hs.271353	NM_012222	MUTYH	MutY homolog (E. coli)
D03	Hs.512732	NM_024608	NEIL1	Nei endonuclease VIII-like 1 (E. coli)
D04	Hs.293818	NM_145043	NEIL2	Nei endonuclease VIII-like 2 (E. coli)
D05	Hs.405467	NM_018248	NEIL3	Nei endonuclease VIII-like 3 (E. coli)
D06	Hs.66196	NM_002528	NTHL1	Nth endonuclease III-like 1 (E. coli)
D07	Hs.380271	NM_002542	OGG1	8-oxoguanine DNA glycosylase
D08	Hs.177766	NM_001618	PARP1	Poly (ADP-ribose) polymerase 1
D09	Hs.409412	NM_005484	PARP2	Poly (ADP-ribose) polymerase 2
D10	Hs.271742	NM_005485	PARP3	Poly (ADP-ribose) polymerase family, member 3
D11	Hs.111749	NM_000534	PMS1	PMS1 postmeiotic segregation increased 1 (S. cerevisiae)
D12	Hs.632637	NM_000535	PMS2	PMS2 postmeiotic segregation increased 2 (S. cerevisiae)
E01	Hs.78016	NM_007254	PNKP	Polynucleotide kinase 3'-phosphatase
E02	Hs.654484	NM_002690	POLB	Polymerase (DNA directed), beta
E03	Hs.82502	NM_006591	POLD3	Polymerase (DNA-directed), delta 3, accessory subunit
E04	Hs.523230	NM_013274	POLL	Polymerase (DNA directed), lambda
E05	Hs.491682	NM_006904	PRKDC	Protein kinase, DNA-activated, catalytic polypeptide
E06	Hs.375684	NM_020165	RAD18	RAD18 homolog (S. cerevisiae)
E07	Hs.81848	NM_006265	RAD21	RAD21 homolog (S. pombe)
E08	Hs.643267	NM_005053	RAD23A	RAD23 homolog A (S. cerevisiae)
E09	Hs.521640	NM_002874	RAD23B	RAD23 homolog B (S. cerevisiae)
E10	Hs.655835	NM_005732	RAD50	RAD50 homolog (S. cerevisiae)
E11	Hs.631709	NM_002875	RAD51	RAD51 homolog (S. cerevisiae)
E12	Hs.172587	NM_133509	RAD51B	RAD51 homolog B (S. cerevisiae)
F01	Hs.412587	NM_058216	RAD51C	RAD51 homolog C (S. cerevisiae)
F02	Hs.631757	NM_002878	RAD51D	RAD51 homolog D (S. cerevisiae)
F03	Hs.709202	NM_134424	RAD52	RAD52 homolog (S. cerevisiae)
F04	Hs.642042	NM_003579	RAD54L	RAD54-like (S. cerevisiae)
F05	Hs.507475	NM_002913	RFC1	Replication factor C (activator 1) 1, 145kDa
F06	Hs.461925	NM_002945	RPA1	Replication protein A1, 70kDa
F07	Hs.487540	NM_002947	RPA3	Replication protein A3, 14kDa
F08	Hs.591922	NM_014720	SLK	STE20-like kinase
F09	Hs.632721	NM_014311	SMUG1	Single-strand-selective monofunctional uracil-DNA glycosylase 1
F10	Hs.584809	NM_003211	TDG	Thymine-DNA glycosylase
F11	Hs.592115	NM_004618	TOP3A	Topoisomerase (DNA) III alpha
F12	Hs.436401	NM_003935	TOP3B	Topoisomerase (DNA) III beta
G01	Hs.707026	NM_016381	TREX1	Three prime repair exonuclease 1
G02	Hs.191334	NM_003362	UNG	Uracil-DNA glycosylase
G03	Hs.9822	NM_020196	XAB2	XPA binding protein 2
G04	Hs.654364	NM_000380	XPA	Xeroderma pigmentosum, complementation group A
G05	Hs.475538	NM_004628	XPC	Xeroderma pigmentosum, complementation group C
G06	Hs.98493	NM_006297	XRCC1	X-ray repair complementing defective repair in Chinese hamster cells 1
G07	Hs.647093	NM_005431	XRCC2	X-ray repair complementing defective repair in Chinese hamster cells 2
G08	Hs.592325	NM_005432	XRCC3	X-ray repair complementing defective repair in Chinese hamster cells 3
G09	Hs.567359	NM_003401	XRCC4	X-ray repair complementing defective repair in Chinese hamster cells 4
G10	Hs.388739	NM_021141	XRCC5	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining)
G11	Hs.292493	NM_001469	XRCC6	X-ray repair complementing defective repair in Chinese hamster cells 6
G12	Hs.61188	NM_033276	XRCC6BP1	XRCC6 binding protein 1
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 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
RT² 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
RT² 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

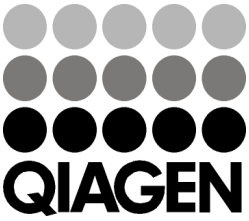
* Larger kit sizes available; please inquire.

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.

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.

www.qiagen.com

Australia ▪ 1-800-243-800
Austria ▪ 0800/281010
Belgium ▪ 0800-79612
Brazil ▪ 0800-557779
Canada ▪ 800-572-9613
China ▪ 8621-3865-3865
Denmark ▪ 80-885945
Finland ▪ 0800-914416
France ▪ 01-60-920-930
Germany ▪ 02103-29-12000
Hong Kong ▪ 800 933 965
Ireland ▪ 1800 555 049
Italy ▪ 800-787980
Japan ▪ 03-6890-7300
Korea (South) ▪ 080-000-7145
Luxembourg ▪ 8002 2076
Mexico ▪ 01-800-7742-436
The Netherlands ▪ 0800 0229592
Norway ▪ 800-18859
Singapore ▪ 1800-742-4368
Spain ▪ 91-630-7050
Sweden ▪ 020-790282
Switzerland ▪ 055-254-22-11
UK ▪ 01293-422-911
USA ▪ 800-426-8157



Sample & Assay Technologies