

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

Human DNA Damage Signaling Pathway

Cat. no. 330231 PAHS-029ZA

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™



Description

The Human DNA Damage Signaling RT² Profiler PCR Array profiles the expression of 84 genes involved in DNA damage signaling pathways. The genes featured are those associated with the ATR/ATM signaling network and transcriptional targets of DNA damage response. DNA damage can result in cell cycle arrest, apoptosis, and the stabilization and repair of the cellular genome. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to DNA Damage Signaling 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	APEX1	ATM	ATR	ATRIP	ATRX	BARD1	BAX	BBC3	BLM	BRCA1	BRIP1
B	CDC25A	CDC25C	CDK7	CDKN1A	CHEK1	CHEK2	CIB1	CRY1	CSNK2A2	DDB1	DDB2	DDIT3
C	ERCC1	ERCC2	EXO1	FANCA	FANCD2	FANCG	FEN1	GADD45A	GADD45G	H2AFX	HUS1	LIG1
D	MAPK12	MBD4	MCPH1	MDC1	MLH1	MLH3	MPG	MRE11A	MSH2	MSH3	NBN	NTHL1
E	OGG1	PARP1	PCNA	PMS1	PMS2	PNKP	PPM1D	PPP1R15A	PRKDC	RAD1	RAD17	RAD18
F	RAD21	RAD50	RAD51	RAD51B	RAD9A	RBBP8	REV1	RNF168	RNF8	RPA1	SIRT1	SMC1A
G	SUMO1	TOPBP1	TP53	TP53BP1	TP73	UNG	XPA	XPC	XRCC1	XRCC2	XRCC3	XRCC6
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.431048	NM_005157	ABL1	C-abl oncogene 1, non-receptor tyrosine kinase
A02	Hs.73722	NM_080649	APEX1	APEX nuclease (multifunctional DNA repair enzyme) 1
A03	Hs.367437	NM_000051	ATM	Ataxia telangiectasia mutated
A04	Hs.271791	NM_001184	ATR	Ataxia telangiectasia and Rad3 related
A05	Hs.694840	NM_032166	ATRIP	ATR interacting protein
A06	Hs.533526	NM_000489	ATRX	Alpha thalassemia/mental retardation syndrome X-linked
A07	Hs.591642	NM_000465	BARD1	BRCA1 associated RING domain 1
A08	Hs.624291	NM_004324	BAX	BCL2-associated X protein
A09	Hs.467020	NM_014417	BBC3	BCL2 binding component 3
A10	Hs.716515	NM_000057	BLM	Bloom syndrome, RecQ helicase-like
A11	Hs.194143	NM_007294	BRCA1	Breast cancer 1, early onset
A12	Hs.532799	NM_032043	BRIP1	BRCA1 interacting protein C-terminal helicase 1
B01	Hs.437705	NM_001789	CDC25A	Cell division cycle 25 homolog A (<i>S. pombe</i>)
B02	Hs.656	NM_001790	CDC25C	Cell division cycle 25 homolog C (<i>S. pombe</i>)
B03	Hs.184298	NM_001799	CDK7	Cyclin-dependent kinase 7
B04	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B05	Hs.24529	NM_001274	CHEK1	CHK1 checkpoint homolog (<i>S. pombe</i>)
B06	Hs.291363	NM_007194	CHEK2	CHK2 checkpoint homolog (<i>S. pombe</i>)
B07	Hs.135471	NM_006384	CIB1	Calcium and integrin binding 1 (calmyrin)
B08	Hs.151573	NM_004075	CRY1	Cryptochrome 1 (photolyase-like)
B09	Hs.82201	NM_001896	CSNK2A2	Casein kinase 2, alpha prime polypeptide
B10	Hs.290758	NM_001923	DDB1	Damage-specific DNA binding protein 1, 127kDa
B11	Hs.700338	NM_000107	DDB2	Damage-specific DNA binding protein 2, 48kDa
B12	Hs.728989	NM_004083	DDIT3	DNA-damage-inducible transcript 3
C01	Hs.435981	NM_001983	ERCC1	Excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes overlapping antisense sequence)
C02	Hs.487294	NM_000400	ERCC2	Excision repair cross-complementing rodent repair deficiency, complementation group 2
C03	Hs.498248	NM_130398	EXO1	Exonuclease 1
C04	Hs.567267	NM_000135	FANCA	Fanconi anemia, complementation group A
C05	Hs.208388	NM_033084	FANCD2	Fanconi anemia, complementation group D2
C06	Hs.591084	NM_004629	FANCG	Fanconi anemia, complementation group G
C07	Hs.409065	NM_004111	FEN1	Flap structure-specific endonuclease 1
C08	Hs.80409	NM_001924	GADD45A	Growth arrest and DNA-damage-inducible, alpha
C09	Hs.9701	NM_006705	GADD45G	Growth arrest and DNA-damage-inducible, gamma
C10	Hs.477879	NM_002105	H2AFX	H2A histone family, member X
C11	Hs.152983	NM_004507	HUS1	HUS1 checkpoint homolog (<i>S. pombe</i>)
C12	Hs.1770	NM_000234	LIG1	Ligase I, DNA, ATP-dependent
D01	Hs.432642	NM_002969	MAPK12	Mitogen-activated protein kinase 12
D02	Hs.35947	NM_003925	MBD4	Methyl-CpG binding domain protein 4
D03	Hs.709634	NM_024596	MCPH1	Microcephalin 1
D04	Hs.653495	NM_014641	MDC1	Mediator of DNA-damage checkpoint 1
D05	Hs.195364	NM_000249	MLH1	MutL homolog 1, colon cancer, nonpolyposis type 2 (<i>E. coli</i>)
D06	Hs.436650	NM_014381	MLH3	MutL homolog 3 (<i>E. coli</i>)
D07	Hs.459596	NM_002434	MPG	N-methylpurine-DNA glycosylase

Position	UniGene	GenBank	Symbol	Description
D08	Hs.192649	NM_005590	MRE11A	MRE11 meiotic recombination 11 homolog A (S. cerevisiae)
D09	Hs.597656	NM_000251	MSH2	MutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli)
D10	Hs.280987	NM_002439	MSH3	MutS homolog 3 (E. coli)
D11	Hs.492208	NM_002485	NBN	Nibrin
D12	Hs.661196	NM_002528	NTHL1	Nth endonuclease III-like 1 (E. coli)
E01	Hs.380271	NM_002542	OGG1	8-oxoguanine DNA glycosylase
E02	Hs.177766	NM_001618	PARP1	Poly (ADP-ribose) polymerase 1
E03	Hs.728886	NM_182649	PCNA	Proliferating cell nuclear antigen
E04	Hs.111749	NM_000534	PMS1	PMS1 postmeiotic segregation increased 1 (S. cerevisiae)
E05	Hs.632637	NM_000535	PMS2	PMS2 postmeiotic segregation increased 2 (S. cerevisiae)
E06	Hs.78016	NM_007254	PNKP	Polynucleotide kinase 3'-phosphatase
E07	Hs.591184	NM_003620	PPM1D	Protein phosphatase, Mg2+/Mn2+ dependent, 1D
E08	Hs.631593	NM_014330	PPP1R15A	Protein phosphatase 1, regulatory (inhibitor) subunit 15A
E09	Hs.491682	NM_006904	PRKDC	Protein kinase, DNA-activated, catalytic polypeptide
E10	Hs.531879	NM_002853	RAD1	RAD1 homolog (S. pombe)
E11	Hs.16184	NM_002873	RAD17	RAD17 homolog (S. pombe)
E12	Hs.375684	NM_020165	RAD18	RAD18 homolog (S. cerevisiae)
F01	Hs.81848	NM_006265	RAD21	RAD21 homolog (S. pombe)
F02	Hs.655835	NM_005732	RAD50	RAD50 homolog (S. cerevisiae)
F03	Hs.631709	NM_002875	RAD51	RAD51 homolog (S. cerevisiae)
F04	Hs.172587	NM_133509	RAD51B	RAD51 homolog B (S. cerevisiae)
F05	Hs.655354	NM_004584	RAD9A	RAD9 homolog A (S. pombe)
F06	Hs.546282	NM_002894	RBBP8	Retinoblastoma binding protein 8
F07	Hs.443077	NM_016316	REV1	REV1 homolog (S. cerevisiae)
F08	Hs.660132	NM_152617	RNF168	Ring finger protein 168
F09	Hs.485278	NM_183078	RNF8	Ring finger protein 8
F10	Hs.461925	NM_002945	RPA1	Replication protein A1, 70kDa
F11	Hs.369779	NM_012238	SIRT1	Sirtuin 1
F12	Hs.211602	NM_006306	SMC1A	Structural maintenance of chromosomes 1A
G01	Hs.81424	NM_003352	SUMO1	SMT3 suppressor of mif two 3 homolog 1 (S. cerevisiae)
G02	Hs.53454	NM_007027	TOPBP1	Topoisomerase (DNA) II binding protein 1
G03	Hs.654481	NM_000546	TP53	Tumor protein p53
G04	Hs.440968	NM_005657	TP53BP1	Tumor protein p53 binding protein 1
G05	Hs.697294	NM_005427	TP73	Tumor protein p73
G06	Hs.191334	NM_003362	UNG	Uracil-DNA glycosylase
G07	Hs.654364	NM_000380	XPA	Xeroderma pigmentosum, complementation group A
G08	Hs.475538	NM_004628	XPC	Xeroderma pigmentosum, complementation group C
G09	Hs.98493	NM_006297	XRCC1	X-ray repair complementing defective repair in Chinese hamster cells 1
G10	Hs.647093	NM_005431	XRCC2	X-ray repair complementing defective repair in Chinese hamster cells 2
G11	Hs.592325	NM_005432	XRCC3	X-ray repair complementing defective repair in Chinese hamster cells 3
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.
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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