

# RT<sup>2</sup> Profiler PCR Array (Rotor-Gene<sup>®</sup> Format)

## Rat DNA Damage Signaling Pathway

Cat. no. 330231 PARN-029ZR

### For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

### Description

The Rat DNA Damage Signaling RT<sup>2</sup> 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 *RT<sup>2</sup> Profiler PCR Array Handbook*.

### Shipping and storage

RT<sup>2</sup> 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 RT<sup>2</sup> 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: RT<sup>2</sup> Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.3105	NM_001100850	Abl1	C-abl oncogene 1, receptor tyrosine kinase
A02	Rn.5949	NM_024148	Apex1	APEX nuclease (multifunctional DNA repair enzyme) 1
A03	Rn.214048	NM_001106821	Atm	Ataxia telangiectasia mutated homolog (human)
A04	Rn.107838	NM_001105757	Atrx	Alpha thalassemia/mental retardation syndrome X-linked (RAD54 homolog, <i>S. cerevisiae</i> )
A05	Rn.48735	NM_022622	Bard1	BRCA1 associated RING domain 1
A06	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A07	Rn.25176	NM_173837	Bbc3	Bcl-2 binding component 3
A08	Rn.211198	NM_001107526	Blm	Bloom syndrome, RecQ helicase-like
A09	Rn.48840	NM_012514	Brc1	Breast cancer 1
A10	Rn.103225	NM_031542	Brc2	Breast cancer 2
A11	Rn.11390	NM_133571	Cdc25a	Cell division cycle 25 homolog A ( <i>S. pombe</i> )
A12	Rn.162298	NM_001107396	Cdc25c	Cell division cycle 25 homolog C ( <i>S. pombe</i> )
B01	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B02	Rn.33267	NM_080400	Chek1	CHK1 checkpoint homolog ( <i>S. pombe</i> )
B03	Rn.163213	NM_053677	Chek2	CHK2 checkpoint homolog ( <i>S. pombe</i> )
B04	Rn.24013	NM_001107409	Csnk2a2	Casein kinase 2, alpha prime polypeptide
B05	Rn.41244	NM_001106201	Dclre1a	DNA cross-link repair 1A, PSO2 homolog ( <i>S. cerevisiae</i> )
B06	Rn.154614	XM_242065	Ddb2	Damage specific DNA binding protein 2
B07	Rn.11183	NM_024134	Ddit3	DNA-damage inducible transcript 3
B08	Rn.7320	NM_001106228	Ercc1	Excision repair cross-complementing rodent repair deficiency, complementation group 1
B09	Rn.74906	NM_001172809	Ercc2	Excision repair cross-complementing rodent repair deficiency, complementation group 2
B10	Rn.52638	NM_001107198	Exo1	Exonuclease 1
B11	Rn.163415	NM_001108455	Fanca	Fanconi anemia, complementation group A
B12	Rn.10798	NM_012557	Fancc	Fanconi anemia, complementation group C
C01	Rn.203979	NM_001001719	Fancd2	Fanconi anemia, complementation group D2
C02	Rn.198713	XM_001076851	Fancg	Fanconi anemia, complementation group G
C03	Rn.16664	NM_053430	Fen1	Flap structure-specific endonuclease 1
C04	Rn.10250	NM_024127	Gadd45a	Growth arrest and DNA-damage-inducible, alpha
C05	Rn.16950	NM_001077640	Gadd45g	Growth arrest and DNA-damage-inducible, gamma
C06	Rn.12812	NM_001109092	Hus1	HUS1 checkpoint homolog ( <i>S. pombe</i> )
C07	Rn.20467	NM_030855	Lig1	Ligase I, DNA, ATP-dependent
C08	Rn.179073	XM_001059437	Mbd4	Methyl-CpG binding domain protein 4
C09	Rn.9836	NM_012861	Mgmt	O-6-methylguanine-DNA methyltransferase
C10	Rn.2661	NM_031051	Mif	Macrophage migration inhibitory factor
C11	Rn.20391	NM_031053	Mlh1	MutL homolog 1 ( <i>E. coli</i> )
C12	Rn.119254	NM_001108043	Mlh3	MutL homolog 3 ( <i>E. coli</i> )
D01	Rn.11241	NM_012601	Mpg	N-methylpurine-DNA glycosylase
D02	Rn.209040	NM_022279	Mre11a	MRE11 meiotic recombination 11 homolog A ( <i>S. cerevisiae</i> )
D03	Rn.3174	NM_031058	Msh2	MutS homolog 2 ( <i>E. coli</i> )
D04	Rn.162551	XM_001065837	Msh3	MutS homolog 3 ( <i>E. coli</i> )
D05	Rn.25214	NM_138873	Nbn	Nibrin
D06	Rn.14632	NM_001105728	Nthl1	Nth (endonuclease III)-like 1 ( <i>E. coli</i> )
D07	Rn.22623	NM_030870	Ogg1	8-oxoguanine DNA glycosylase
D08	Rn.11327	NM_013063	Parp1	Poly (ADP-ribose) polymerase 1
D09	Rn.22730	NM_001106030	Parp2	Poly (ADP-ribose) polymerase 2
D10	Rn.223	NM_022381	Pcna	Proliferating cell nuclear antigen
D11	Rn.47945	NM_001009535	Pms1	Postmeiotic segregation increased 1 ( <i>S. cerevisiae</i> )
D12	Rn.102072	NM_001105908	Pms2	PMS2 postmeiotic segregation increased 2 ( <i>S. cerevisiae</i> )
E01	Rn.162469	NM_001024750	Pold3	Polymerase (DNA-directed), delta 3, accessory subunit
E02	Rn.40977	NM_001107152	Pole	Polymerase (DNA directed), epsilon
E03	Rn.53711	NM_001108204	Polh	Polymerase (DNA directed), eta
E04	Rn.136855	NM_001106137	Poli	Polymerase (DNA directed), iota
E05	Rn.15540	NM_001105825	Ppm1d	Protein phosphatase 1D magnesium-dependent, delta isoform
E06	Rn.2232	NM_133546	Ppp1r15a	Protein phosphatase 1, regulatory (inhibitor) subunit 15A

Position	UniGene	GenBank	Symbol	Description
E07	Rn.24110	NM_001108327	Prkdc	Protein kinase, DNA activated, catalytic polypeptide
E08	Rn.271	NM_022391	Pttg1	Pituitary tumor-transforming 1
E09	Rn.27018	NM_001106419	Rad1	RAD1 homolog (S. pombe)
E10	Rn.154275	NM_001024778	Rad17	RAD17 homolog (S. pombe)
E11	Rn.22793	NM_001077673	Rad18	RAD18 homolog (S. cerevisiae)
E12	Rn.3991	NM_001025701	Rad21	RAD21 homolog (S. pombe)
F01	Rn.51136	NM_022246	Rad50	RAD50 homolog (S. cerevisiae)
F02	Rn.214052	NM_001109204	Rad51	RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae)
F03	Rn.160309	NM_001129777	Rad51c	Rad51 homolog c (S. cerevisiae)
F04	Rn.124221	XM_576058	Rad5111	RAD51-like 1 (S. cerevisiae)
F05	Rn.8154	NM_001106617	Rad52	RAD52 homolog (S. cerevisiae)
F06	Rn.145016	XM_219684	Rad9	RAD9 homolog (S. pombe)
F07	Rn.94641	NM_001108213	Rev1	REV1 homolog (S. cerevisiae)
F08	Rn.12463	NM_001025727	Rnf8	Ring finger protein 8
F09	Rn.14841	NM_001047843	Rpa1	Replication protein A1
F10	Rn.219976	NM_001107627	Sirt1	Sirtuin (silent mating type information regulation 2 homolog) 1 (S. cerevisiae)
F11	Rn.11763	NM_031683	Smc1a	Structural maintenance of chromosomes 1A
F12	Rn.11074	NM_031583	Smc3	Structural maintenance of chromosomes 3
G01	Rn.1221	NM_001009672	Sumo1	SMT3 suppressor of mif two 3 homolog 1 (S. cerevisiae)
G02	Rn.33853	NM_001012464	Terf1	Telomeric repeat binding factor (NIMA-interacting) 1
G03	Rn.204161	XM_236578	Topbp1	Topoisomerase (DNA) II binding protein 1
G04	Rn.54443	NM_030989	Tp53	Tumor protein p53
G05	Rn.221896	NM_001106501	Tp53bp1	Tumor protein p53 binding protein 1
G06	Rn.104379	NM_001013124	Ung	Uracil-DNA glycosylase
G07	Rn.144144	XM_214361	Wrrn	Werner syndrome
G08	Rn.8783	NM_172332	Wrrnip1	Werner helicase interacting protein 1
G09	Rn.22820	NM_001107874	Xpc	Xeroderma pigmentosum, complementation group C
G10	Rn.13754	NM_053435	Xrcc1	X-ray repair complementing defective repair in Chinese hamster cells 1
G11	Rn.8224	NM_001109215	Xrcc2	X-ray repair complementing defective repair in Chinese hamster cells 2
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, RT<sup>2</sup> Profiler PCR Arrays should be used together with the RT<sup>2</sup> First Strand Kit for cDNA synthesis and RT<sup>2</sup> SYBR<sup>®</sup> Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT <sup>2</sup> First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT <sup>2</sup> SYBR Green ROX <sup>™</sup> 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.

RT<sup>2</sup> 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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