RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Apoptosis

Cat. no. 330231 PARN-012ZR

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 Apoptosis RT² Profiler PCR Array profiles the expression of 84 key genes involved in programmed cell death. Apoptosis plays a critical role in normal biological processes requiring cell removal including differentiation, development, and homeostasis. Stress responses (such as heat shock, ischemia, unfolded proteins, and viral infection) cause badly damaged cells to undergo apoptosis. In cell culture, growth factor withdrawal and many known experimental compounds have a similar effect. An acquired defect in apoptosis activation often leads to uncontrolled cell growth, oncogenesis, and cancer. Ligand-bound tumor necrosis factor (TNF) receptors initiate apoptosis by recruiting FADD and other death domain adaptor proteins that then recruit and activate caspases. Environmental stresses trigger BCL2 protein oligomerization and insertion into the mitochondrial membrane, releasing APAF1 and other CARD family members that also oligomerize to recruit and activate caspases. Caspases promote a proteolysis cascade that degrades cellular protein targets, while the IAP protein family directly inhibits caspases. This array includes TNF ligands and their receptors, members of the bcl-2, caspase, IAP, TRAF, CARD, death domain, death effector domain, and CIDE families, as well as genes involved in the p53 and DNA damage pathways. Monitoring the expression of these genes helps determine the mechanisms behind programmed cell death in your model system and the propensity of a cell type to undergo apoptosis normally. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to apoptosis 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.203165	NM_031356	Aifm1	Apoptosis-inducing factor, mitochondrion-associated 1
A03	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A04	Rn.3318	NM_013132	Anxa5	Annexin A5
A05	Rn.64522	NM_023979	Apaf1	Apoptotic peptidase activating factor 1
A06	Rn.103083	NM_001127379	Api5	Apoptosis inhibitor 5
A07	Rn.145049	NM_001107757	Aven	Apoptosis, caspase activation inhibitor
A08	Rn.36696	NM_022698	Bad	BCL2-associated agonist of cell death
A09	Rn.16320	NM_001106647	Bag1	BCL2-associated athanogene
A10	Rn.14598	NM_053812	Bak1	BCL2-antagonist/killer 1
A11	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A12	Rn.13007	NM_031328	Bcl10	B-cell CLL/lymphoma 10
B01	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
B02	Rn.19770	NM_133416	Bcl2a1d	B-cell leukemia/lymphoma 2 related protein A1d
B03	Rn.10323	NM_031535	Bcl2l1	Bcl2-like 1
B04	Rn.82709	NM_022612	Bcl2l11	BCL2-like 11 (apoptosis facilitator)
B05	Rn.44267	NM_021850	Bcl2l2	Bcl2-like 2
B06	Rn.31142	NM_022684	Bid	BH3 interacting domain death agonist
B07	Rn.38487	NM_053704	Bik	BCL2-interacting killer (apoptosis-inducing)
B08	Rn.205955	NM_021752	Birc2	Baculoviral IAP repeat-containing 2
B09	Rn.64578	NM_023987	Birc3	Baculoviral IAP repeat-containing 3
B10	Rn.54471	NM_022274	Birc5	Baculoviral IAP repeat-containing 5
B11	Rn.11821	NM_001106835	Bnip2	BCL2/adenovirus E1B interacting protein 2
B12	Rn.2060	NM_053420	Bnip3	BCL2/adenovirus E1B interacting protein 3
C01	Rn.44461	NM_017312	Bok	BCL2-related ovarian killer
C02	Rn.138066	NM_001130554	Card10	Caspase recruitment domain family, member 10
C03	Rn.37508	NM_012762	Casp1	Caspase 1
C04	Rn.81078	NM_130422	Casp12	Caspase 12
C05	Rn.198773	XM_234878	Casp14	Caspase 14
C06	Rn.1438	NM_022522	Casp2	Caspase 2
C07	Rn.10562	NM_012922	Casp3	Caspase 3
C08	Rn.16195	NM_053736	Casp4	Caspase 4, apoptosis-related cysteine peptidase
C09	Rn.88160	NM_031775	Casp6	Caspase 6
C10	Rn.53995	NM_022260	Casp7	Caspase 7
C11	Rn.54474	NM_022277	Casp8	Caspase 8
C12	Rn.198715	NM_001107921	Casp8ap2	Caspase 8 associated protein 2
D01	Rn.32199	NM_031632	Casp9	Caspase 9, apoptosis-related cysteine peptidase
D02	Rn.25180	NM_134360	Cd40	CD40 molecule, TNF receptor superfamily member 5
D03	Rn.44218	NM_053353	Cd40lg	CD40 ligand
D04	Rn.204752	NM_057138	Cflar	CASP8 and FADD-like apoptosis regulator
D05	Rn.8171	NM_001170467	Cidea	Cell death-inducing DFFA-like effector a
D06	Rn.204016	NM_001108869	Cideb	Cell death-inducing DFFA-like effector b
D07	Rn.2202	NM_012839	Cycs	Cytochrome c, somatic
D08	Rn.7262	NM_138910	Dad1	Defender against cell death 1
D09	Rn.23108	NM_001107335	Dapk1	Death associated protein kinase 1
D10	Rn.6514	NM_053679	Dffa	DNA fragmentation factor, alpha subunit
D11	Rn.67077	NM_053362	Dffb	DNA fragmentation factor, beta polypeptide (caspase-activated DNase)
D12	Rn.9090	NM_001008292	Diablo	Diablo homolog (Drosophila)
E01	Rn.16183	NM_152937	Fadd	Fas (TNFRSF6)-associated via death domain
E02	Rn.106419	NM_080895	Faim	Fas apoptotic inhibitory molecule
E03	Rn.162521	NM_139194	Fas	Fas (TNF receptor superfamily, member 6)
E04	Rn.9725	NM_012908	Faslg	Fas ligand (TNF superfamily, member 6)
E05	Rn.10250	NM_024127	Gadd45a	Growth arrest and DNA-damage-inducible, alpha
E06	Rn.89639	NM_057130	Hrk	Harakiri, BCL2 interacting protein (contains only BH3 domain)
E07	Rn.9868	NM_012854	Il10	Interleukin 10
E08	Rn.160577	NM_080769	Lta	Lymphotoxin alpha (TNF superfamily, member 1)
E09	Rn.19329	NM_001008315	Ltbr	Lymphotoxin beta receptor (TNFR superfamily, member 3)

Position	UniGene	GenBank	Symbol	Description
E10	Rn.34914	NM_053842	Mapk1	Mitogen activated protein kinase 1
E11	Rn.44266	NM_053777	Mapk8ip1	Mitogen-activated protein kinase 8 interacting protein 1
E12	Rn.129914	NM_021846	Mcl1	Myeloid cell leukemia sequence 1
F01	Rn.92423	XM_226742	Naip2	NLR family, apoptosis inhibitory protein 2
F02	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
F03	Rn.86956	NM_053516	Nol3	Nucleolar protein 3 (apoptosis repressor with CARD domain)
F04	Rn.9346	NM_017141	Polb	Polymerase (DNA directed), beta
F05	Rn.2511	NM_017169	Prdx2	Peroxiredoxin 2
F06	Rn.9757	NM_012630	Prlr	Prolactin receptor
F07	Rn.7817	NM_172322	Pycard	PYD and CARD domain containing
F08	Rn.102179	XM_342810	Ripk2	Receptor-interacting serine-threonine kinase 2
F09	Rn.41053	NM_001012066	Sphk2	Sphingosine kinase 2
F10	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
F11	Rn.105558	NM_001108873	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
F12	Rn.202973	NM_012870	Tnfrsf11b	Tumor necrosis factor receptor superfamily, member 11b
G01	Rn.11119	NM_013091	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
G02	Rn.83633	NM_130426	Tnfrsf1b	Tumor necrosis factor receptor superfamily, member 1b
G03	Rn.83627	NM_145681	Tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10
G04	Rn.3211	NM_001001513	Tnfsf12	Tumor necrosis factor ligand superfamily member 12
G05	Rn.54443	NM_030989	Tp53	Tumor protein p53
G06	Rn.50333	XM_223012	Tp53bp2	Tumor protein p53 binding protein, 2
G07	Rn.42907	NM_019221	Tp63	Tumor protein p63
G08	Rn.103860	NM_001108696	Tp73	Tumor protein p73
G09	Rn.18545	NM_001100480	Tradd	TNFRSF1A-associated via death domain
G10	Rn.105232	NM_001107815	Traf2	Tnf receptor-associated factor 2
G11	Rn.12033	NM_001108724	Traf3	Tnf receptor-associated factor 3
G12	Rn.91239	NM_022231	Xiap	X-linked inhibitor of apoptosis
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.

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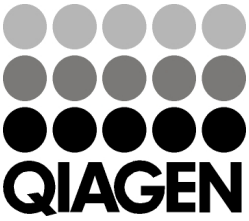

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