RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Cell Death PathwayFinder

Cat. no. 330231 PARN-212ZR

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 Cell Death PathwayFinder RT² Profiler PCR Array profiles the expression of 84 key genes important for the central mechanisms of cellular death: apoptosis, autophagy, and necrosis. Apoptosis, or programmed cell death, results in controlled cell shrinkage and fragmentation via the action of caspases, as well as an anti-inflammatory cytokine release. In contrast, necrosis signals via RIPK1 (RIP1), leading to cell swelling, lysis, and a pro-inflammatory cytokine release. Autophagy destroys the cell's damaged proteins and organelles via an intracellular catabolic process in the lysosome. Multiple cellular processes require the removal of specific cells by a controlled cell-death program. For example, tissue remodeling activates apoptosis, whereas energy metabolism and growth regulation responses rely on autophagy. Developmental processes often activate apoptosis, while bodily injuries or infection more commonly induce necrosis. The molecular mechanisms behind these cell death pathways overlap and more than one form of cell death occur simultaneously during some cellular functions. Apoptosis and necrosis both signal through the death domain receptors FAS, TNFRSF1A (TNFR1), and TNFRSF10A (TRAIL-R), while autophagy and apoptosis share BCL2 family members as key players. The results of this array can yield insights into which central cell death mechanism(s) drive normal biological or pathophysiological processes. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in cellular death pathways 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.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A03	Rn.64522	NM_023979	Apaf1	Apoptotic peptidase activating factor 1
A04	Rn.2104	NM_019288	App	Amyloid beta (A4) precursor protein
A05	Rn.6224	NM_001038495	Atg12	ATG12 autophagy related 12 homolog (S. cerevisiae)
A06	Rn.101734	NM_001108809	Atg16l1	ATG16 autophagy related 16-like 1 (S. cerevisiae)
A07	Rn.3084	NM_134394	Atg3	ATG3 autophagy related 3 homolog (S. cerevisiae)
A08	Rn.98385	NM_001014250	Atg5	ATG5 autophagy related 5 homolog (S. cerevisiae)
A09	Rn.162765	NM_001012097	Atg7	ATG7 autophagy related 7 homolog (S. cerevisiae)
A10	Rn.205429	NM_212490	Atp6v1g2	ATPase, H+ transporting, lysosomal V1 subunit G2
A11	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A12	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
B01	Rn.19770	NM_133416	Bcl2a1d	B-cell leukemia/lymphoma 2 related protein A1d
B02	Rn.10323	NM_031535	Bcl2l1	Bcl2-like 1
B03	Rn.82709	NM_022612	Bcl2l11	BCL2-like 11 (apoptosis facilitator)
B04	Rn.2776	NM_053739	Becn1	Beclin 1, autophagy related
B05	Rn.205955	NM_021752	Birc2	Baculoviral IAP repeat-containing 2
B06	Rn.64578	NM_023987	Birc3	Baculoviral IAP repeat-containing 3
B07	Rn.213264	NM_139258	Bmf	Bcl2 modifying factor
B08	Rn.37508	NM_012762	Casp1	Caspase 1
B09	Rn.1438	NM_022522	Casp2	Caspase 2
B10	Rn.10562	NM_012922	Casp3	Caspase 3
B11	Rn.88160	NM_031775	Casp6	Caspase 6
B12	Rn.53995	NM_022260	Casp7	Caspase 7
C01	Rn.32199	NM_031632	Casp9	Caspase 9, apoptosis-related cysteine peptidase
C02	Rn.25180	NM_134360	Cd40	CD40 molecule, TNF receptor superfamily member 5
C03	Rn.44218	NM_053353	Cd40lg	CD40 ligand
C04	Rn.204752	NM_057138	Cflar	CASP8 and FADD-like apoptosis regulator
C05	Rn.17650	NM_001108762	Commd4	COMM domain containing 4
C06	Rn.100909	NM_022597	Ctsb	Cathepsin B
C07	Rn.11347	NM_017320	Ctss	Cathepsin S
C08	Rn.98491	NM_023965	Cybb	Cytochrome b-245, beta polypeptide
C09	Rn.128760	NM_001017380	Cyld	Cylindromatosis (turban tumor syndrome)
C10	Rn.31800	NM_031810	Defb1	Defensin beta 1
C11	Rn.6514	NM_053679	Dffa	DNA fragmentation factor, alpha subunit
C12	Rn.10503	NM_012933	Dpysl4	Dihydropyrimidinase-like 4
D01	Rn.10595	NM_012689	Esr1	Estrogen receptor 1
D02	Rn.162521	NM_139194	Fas	Fas (TNF receptor superfamily, member 6)
D03	Rn.9725	NM_012908	Faslg	Fas ligand (TNF superfamily, member 6)
D04	Rn.32116	NM_001105776	Foxi1	Forkhead box I1
D05	Rn.162368	NM_199118	Gaa	Glucosidase, alpha, acid
D06	Rn.10250	NM_024127	Gadd45a	Growth arrest and DNA-damage-inducible, alpha
D07	Rn.30048	NM_031796	Galnt5	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 5 (GalNAc-T5)
D08	Rn.3360	NM_030846	Grb2	Growth factor receptor bound protein 2
D09	Rn.37915	NM_134419	Hspbap1	Hspb associated protein 1
D10	Rn.11193	NM_024357	Htt	Huntingtin
D11	Rn.10795	NM_138880	Ifng	Interferon gamma
D12	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
E01	Rn.10957	NM_052807	Igf1r	Insulin-like growth factor 1 receptor
E02	Rn.989	NM_019130	Ins2	Insulin 2
E03	Rn.20356	NM_001012007	Irgm	Immunity-related GTPase family, M
E04	Rn.20530	NM_022929	Kcnip1	Kv channel-interacting protein 1
E05	Rn.87331	NM_017190	Mag	Myelin-associated glycoprotein
E06	Rn.3135	NM_199500	Map1lc3a	Microtubule-associated protein 1 light chain 3 alpha
E07	Rn.4090	XM_341399	Mapk8	Mitogen-activated protein kinase 8
E08	Rn.129914	NM_021846	Mcl1	Myeloid cell leukemia sequence 1

Position	UniGene	GenBank	Symbol	Description
E09	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E10	Rn.86956	NM_053516	Nol3	Nucleolar protein 3 (apoptosis repressor with CARD domain)
E11	Rn.142343	NM_001000080	Olr1583	Olfactory receptor 1583
E12	Rn.11327	NM_013063	Parp1	Poly (ADP-ribose) polymerase 1
F01	Rn.22730	NM_001106030	Parp2	Poly (ADP-ribose) polymerase 2
F02	Rn.30010	NM_022958	Pik3c3	Phosphoinositide-3-kinase, class 3
F03	Rn.22158	NM_031606	Pten	Phosphatase and tensin homolog
F04	Rn.10677	NM_017076	Pvr	Poliovirus receptor
F05	Rn.7929	NM_001107687	Rab25	RAB25, member RAS oncogene family
F06	Rn.83717	NM_001014072	RGD1311517	Similar to RIKEN cDNA 9430015G10
F07	Rn.21843	XR_009072	RGD1562639	Similar to c-myc promoter binding protein
F08	Rn.4042	NM_031985	Rps6kb1	Ribosomal protein S6 kinase, polypeptide 1
F09	Rn.1827	NM_019169	Snca	Synuclein, alpha (non A4 component of amyloid precursor)
F10	Rn.201291	NM_053675	Spata2	Spermatogenesis associated 2
F11	Rn.107103	NM_181550	Sqstm1	Sequestosome 1
F12	Rn.14527	NM_130735	Sycp2	Synaptonemal complex protein 2
G01	Rn.214009	NM_001025699	Tmem57	Transmembrane protein 57
G02	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G03	Rn.105558	NM_001108873	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
G04	Rn.202973	NM_012870	Tnfrsf11b	Tumor necrosis factor receptor superfamily, member 11b
G05	Rn.11119	NM_013091	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
G06	Rn.48883	NM_013049	Tnfrsf4	Tumor necrosis factor receptor superfamily, member 4
G07	Rn.11322	NM_019135	Tnfrsf8	Tumor necrosis factor receptor superfamily, member 8
G08	Rn.54443	NM_030989	Tp53	Tumor protein p53
G09	Rn.105232	NM_001107815	Traf2	Tnf receptor-associated factor 2
G10	Rn.7305	NM_001013891	Txnl4b	Thioredoxin-like 4B
G11	Rn.24509	NM_001108341	Ulk1	Unc-51 like kinase 1 (C. elegans)
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

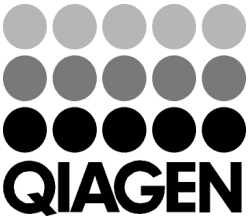
* Larger kit sizes available; please inquire.

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.

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