RT² Profiler PCR Array (Rotor-Gene® Format)

Dog Apoptosis

Cat. no. 330231 PAFD-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 Dog 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	Assay
A01	N/A	XM_548413	ABL1	C-abl oncogene 1, non-receptor tyrosine kinase	PPF10809A
A02	N/A	XM_538170	AIFM1	Apoptosis-inducing factor, mitochondrion-associated, 1	PPF05004A
A03	N/A	XM_005623876	AKT1	V-akt murine thymoma viral oncogene homolog 1	PPF10547A
A04	N/A	XM_003432034	APAF1	Apoptotic peptidase activating factor 1	PPF05880A
A05	Cfa.38968	NM_001031820	BAD	BCL2-associated agonist of cell death	PPF06521A
A06	N/A	XM_005626987	BAG1	BCL2-associated athanogene	PPF13312C
A07	N/A	XM_544046	BAG3	BCL2-associated athanogene 3	PPF08289A
A08	Cfa.23307	NM_001020808	BAK1	BCL2-antagonist/killer 1	PPF05409A
A09	Cfa.22	NM_001003011	BAX	BCL2-associated X protein	PPF00118A
A10	N/A	XM_547304	BCL10	B-cell CLL/lymphoma 10	PPF10173A
A11	Cfa.110	NM_001002949	BCL2	B-cell CLL/lymphoma 2	PPF00024A
A12	N/A	XM_545888	BCL2A1	BCL2-related protein A1	PPF09289A
B01	Cfa.3481	NM_001003072	BCL2L1	BCL2-like 1	PPF00197A
B02	N/A	XM_014109372	BCL2L10	BCL2-like 10 (apoptosis facilitator)	PPF18209A
B03	N/A	XR_001318022	BCL2L11	Bcl-2-like protein 11-like	PPF13807A
B04	Cfa.48621	NM_001031635	BCL2L2	Poly(A) binding protein, nuclear 1	PPF10407A
B05	N/A	XM_547118	BFAR	Bifunctional apoptosis regulator	PPF10061A
B06	Cfa.10450	NM_001251938	BID	BH3 interacting domain death agonist	PPF08108A
B07	N/A	XM_005625776	BIK	BCL2-interacting killer (apoptosis-inducing)	PPF18210A
B08	Cfa.828	NM_001048023	BIRC2	Baculoviral IAP repeat containing 2	PPF04015A
B09	Cfa.18376	NM_001080725	BIRC3	Baculoviral IAP repeat containing 3	PPF09677A
B10	N/A	XM_014120337	BIRC6	Baculoviral IAP repeat containing 6	PPF01586A
B11	N/A	XM_014109377	BNIP2	BCL2/adenovirus E1B 19kDa interacting protein 2	PPF08687A
B12	N/A	XM_844054	BNIP3	BCL2/adenovirus E1B 19 kDa protein-interacting protein 3-like	PPF11462A
C01	N/A	XM_845605	BNIP3L	BCL2/adenovirus E1B 19kDa interacting protein 3-like	PPF11939A
C02	Cfa.1002	XM_005629550	BRAF	V-raf murine sarcoma viral oncogene homolog B1	PPF01461A
C03	N/A	XM_005640530	CASP10	Caspase 10, apoptosis-related cysteine peptidase	PPF09113A
C04	Cfa.13715	NM_001077236	CASP12	Caspase 12 (gene/pseudogene)	PPF14554A
C05	N/A	XM_014121792	CASP14	Caspase 14, apoptosis-related cysteine peptidase	PPF12749A
C06	Cfa.12400	NM_001195151	CASP2	Caspase 2, apoptosis-related cysteine peptidase	PPF05929A
C07	Cfa.84	NM_001003042	CASP3	Caspase 3, apoptosis-related cysteine peptidase	PPF00153A
C08	Cfa.3589	NM_001003125	CASP4	Caspase 4, apoptosis-related cysteine peptidase	PPF00299A
C09	Cfa.3589	NM_001003125	CASP4	Caspase 4, apoptosis-related cysteine peptidase	PPF00299A
C10	N/A	XM_545022	CASP6	Caspase 6, apoptosis-related cysteine peptidase	PPF08848A
C11	N/A	XM_005637738	CASP7	Caspase 7, apoptosis-related cysteine peptidase	PPF08275A
C12	Cfa.24658	NM_001048029	CASP8	Caspase 8, apoptosis-related cysteine peptidase	PPF09114A
D01	Cfa.20874	NM_001031633	CASP9	Caspase 9, apoptosis-related cysteine peptidase	PPF08596A
D02	N/A	XM_849371	CD27	CD27 molecule	PPF13267A
D03	Cfa.180	NM_001002982	CD40	CD40 molecule, TNF receptor superfamily member 5	PPF00069A
D04	Cfa.179	NM_001002981	CD40LG	CD40 ligand	PPF00068A
D05	N/A	XM_542136	CD70	CD70 molecule	PPF07222A
D06	N/A	XM_545592	CFLAR	CASP8 and FADD-like apoptosis regulator	PPF09112A
D07	N/A	XM_547681	CIDEA	Cell death-inducing DFFA-like effector a	PPF10383A
D08	N/A	XM_845468	CIDEB	Cell death-inducing DFFA-like effector b	PPF18197A
D09	N/A	XM_539721	CRADD	CASP2 and RIPK1 domain containing adaptor with death domain	PPF05869A
D10	Cfa.379	NM_001197045	CYCS	Cytochrome c, somatic	PPF01279A
D11	Cfa.35381	NM_001197157	DAPK1	Death-associated protein kinase 1	PPF06705A
D12	N/A	XM_544574	DFFA	DNA fragmentation factor, 45kDa, alpha polypeptide	PPF08609A
E01	Cfa.11132	NM_001079767	DIABLO	Diablo, IAP-binding mitochondrial protein	PPF02732A
E02	N/A	XM_005631743	FADD	Fas (TNFRSF6)-associated via death domain	PPF17717A
E03	N/A	XM_005634497	FAIM	Fas apoptotic inhibitory molecule	PPF07580A
E04	N/A	XM_005636650	FAS	Fas cell surface death receptor	PPF08028A
E05	Cfa.4547	NM_001287153	FASLG	Fas ligand (TNF superfamily, member 6)	PPF00624A
E06	N/A	XM_003639101	GADD45A	Growth arrest and DNA damage-inducible protein GADD45 alpha-like	PPF18163A
E07	N/A	XM_848964	HRK	Harakiri, BCL2 interacting protein (contains only BH3 domain)	PPF13873A
E08	Cfa.3911	XM_545828	IGF1R	Insulin-like growth factor 1 receptor	PPF00607A

Position	UniGene	GenBank	Symbol	Description	Assay
E09	Cfa.38	NM_001003077	IL10	Interleukin 10	PPF00207A
E10	N/A	XM_843793	LTA	Lymphotoxin alpha (TNF superfamily, member 1)	PPF11372A
E11	N/A	XM_005637256	LTBR	Lymphotoxin beta receptor (TNFR superfamily, member 3)	PPF08177A
E12	Cfa.34	NM_001003016	MCL1	Myeloid cell leukemia sequence 1 (BCL2-related)	PPF00126A
F01	Cfa.10766	NM_001003344	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	PPF00590A
F02	Cfa.48412	XM_539499	NOD1	Nucleotide-binding oligomerization domain containing 1	PPF05758A
F03	Cfa.25663	XM_848890	NOL3	Nucleolar protein 3 (apoptosis repressor with CARD domain)	PPF13076A
F04	N/A	XM_547045	PYCARD	PYD and CARD domain containing	PPF10009A
F05	N/A	XM_005638101	RIPK2	Receptor-interacting serine-threonine kinase 2	PPF03034A
F06	Cfa.54	NM_001003244	TNF	Tumor necrosis factor	PPF00476A
F07	N/A	XM_539146	TNFRSF11B	Tumor necrosis factor receptor superfamily, member 11b	PPF05576A
F08	Cfa.3498	XM_849381	TNFRSF1A	Tumor necrosis factor receptor superfamily, member 1A	PPF00213A
F09	N/A	XM_005617982	TNFRSF1B	Tumor necrosis factor receptor superfamily, member 1B	PPF08600A
F10	N/A	XM_005627767	TNFRSF21	Tumor necrosis factor receptor superfamily, member 21	PPF12544A
F11	N/A	XM_005620464	TNFRSF25	Tumor necrosis factor receptor superfamily, member 25	PPF09815A
F12	N/A	XM_845243	TNFRSF9	Tumor necrosis factor receptor superfamily, member 9	PPF11822A
G01	Cfa.20893	NM_001130836	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10	PPF13919A
G02	Cfa.48842	NM_001205168	TNFSF12	Tumor necrosis factor (ligand) superfamily, member 12	PPF18193A
G03	N/A	XM_850342	TNFSF8	Tumor necrosis factor (ligand) superfamily, member 8	PPF13689A
G04	Cfa.3658	NM_001003210	TP53	Tumor protein p53	PPF00431A
G05	N/A	XM_005622650	TP53BP2	Tumor protein p53 binding protein, 2	PPF10292A
G06	N/A	XM_005639826	TP63	Tumor protein p63	PPF08969A
G07	N/A	XM_546740	TP73	Tumor protein p73	PPF09804A
G08	N/A	XM_848905	TRADD	TNFRSF1A-associated via death domain	PPF13085A
G09	N/A	XM_014117963	TRAF1	TNF receptor-associated factor 1	PPF13724A
G10	N/A	XM_005625072	TRAF2	TNF receptor-associated factor 2	PPF04817A
G11	N/A	XM_003435066	TRAF3	TNF receptor-associated factor 3	PPF10542A
G12	Cfa.4543	XM_538165	XIAP	X-linked inhibitor of apoptosis	PPF00642A
H01	Cfa.17735	NM_001195845	ACTB	Actin, beta	PPF12880A
H02	N/A	XM_535458	B2M	Beta-2-microglobulin	PPF03253A
H03	Cfa.36213	NM_001003142	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase	PPF00328A
H04	Cfa.4551	NM_001003357	HPRT1	Hypoxanthine phosphoribosyltransferase 1	PPF00602A
H05	N/A	XM_014109387	RPLP1	Ribosomal protein, large, P1	PPF03305A
H06	N/A	SA_00130	FGDC	Dog Genomic DNA Contamination	PPF68934A
H07	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H08	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H09	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H10	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A
H11	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A
H12	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A

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.

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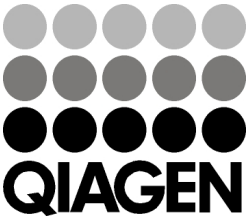

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