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

Zebrafish Apoptosis

Cat. no. 330231 PAZF-012ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² 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
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

QIAGEN®

Sample & Assay Technologies

Description

The 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 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	aifm1	akt1	apaf1	api5	badb	bag1	bag3	baxb	bcl10	bcl2a	bcl2l1
B	bcl2l11	bida	bik	birc2	birc5a	birc6	bnip1a	bnip2	bnip3	bnip3lb	boka	braf
C	casp2	casp3a	casp6	casp7	casp8	casp9	caspa	caspb	caspbl	caspxa	cd27	cd40
D	cd40lg	cflara	cideb	cradd	cycsa	dad1	dapk1	dffa	dffb	diabloa	fadd	faima
E	fas	faslg	gadd45aa	gadd45ab	igf1rb	il10	lta	mcl1a	nfkb1	nod1	pycard	ripk1l
F	ripk2	tnfb	tnfrsf11a	tnfrsf11b	tnfrsf13b	tnfrsf17	tnfrsf18	tnfrsf19	tnfrsf1a	tnfrsf1b	tnfrsf21	tnfrsf9b
G	tnfrsfa	tnfsf10	tnfsf12	tp53	tp53bp2a	tp63	tp73	tradd	traf1	traf2a	traf3	xiap
H	acta1b	b2m	hprt1	nono	rpl13a	ZGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description	Assay
A01	Dr.115152	XM_005172047	abl1	C-abl oncogene 1, non-receptor tyrosine kinase	PPZ15445A
A02	Dr.7667	NM_200102	aifm1	Programmed cell death 8 (apoptosis-inducing factor)	PPZ03101A
A03	N/A	NM_001281801	akt1	V-akt murine thymoma viral oncogene homolog 1	PPZ25372A
A04	Dr.78833	NM_131608	apaf1	Apoptotic protease activating factor 1	PPZ00629A
A05	Dr.122501	NM_199540	api5	Apoptosis inhibitor 5	PPZ01313A
A06	Dr.75370	NM_001270595	badb	BCL2-antagonist of cell death	PPZ00602A
A07	Dr.108594	NM_001098736	bag1	Si:dkey-216e9.4	PPZ09538A
A08	Dr.79182	NM_001003533	bag3	BCL2-associated athanogene 3	PPZ06103A
A09	Dr.14459	NM_001013296	baxb	Bcl2-associated X protein, b	PPZ07251A
A10	N/A	XM_002660692	bcl10	B-cell lymphoma/leukemia 10-like	PPZ22908A
A11	Dr.45607	NM_001030253	bcl2a	B-cell leukemia/lymphoma 2	PPZ12998A
A12	Dr.79623	NM_131807	bcl2l1	Bcl2-like 1	PPZ00824A
B01	Dr.126796	NM_001135791	bcl2l11	BCL2-like 11	PPZ17112A
B02	Dr.151151	NM_001079826	bida	BH3 interacting domain death agonist	PPZ09918A
B03	Dr.82304	NM_001045038	bik	BCL2-interacting killer (apoptosis-inducing)	PPZ11186A
B04	Dr.77093	NM_194395	birc2	Baculoviral IAP repeat-containing 2	PPZ03089A
B05	Dr.14671	NM_194397	birc5a	Baculoviral IAP repeat-containing 5a	PPZ03091A
B06	Dr.118830	XM_009293036	birc6	Baculoviral IAP repeat-containing 6	PPZ14977A
B07	Dr.85468	XM_684156	bnip1a	Si:ch73-269a20.1	PPZ11672A
B08	Dr.83417	NM_201218	bnip2	BCL2/adenovirus E1B interacting protein 2	PPZ04267A
B09	Dr.76105	NM_001012245	bnip3	BCL2/adenovirus E1B interacting protein 3	PPZ02504A
B10	Dr.78270	NM_205571	bnip3lb	BCL2/adenovirus E1B interacting protein 3-like b	PPZ08664A
B11	Dr.34035	NM_001003612	boka	BCL2-related ovarian killer a	PPZ06177A
B12	Dr.108603	NM_205744	braf	V-raf murine sarcoma viral oncogene homolog B1	PPZ04531A
C01	Dr.162020	NM_001042695	casp2	Caspase 2, apoptosis-related cysteine protease	PPZ03097A
C02	Dr.11726	NM_131877	casp3a	Caspase 3, apoptosis-related cysteine protease a	PPZ00917A
C03	Dr.79640	NM_001020497	casp6	Caspase 6, apoptosis-related cysteine peptidase	PPZ07932A
C04	Dr.88746	NM_001020607	casp7	Caspase 7, apoptosis-related cysteine peptidase	PPZ08308A
C05	Dr.10334	NM_131510	casp8	Caspase 8, apoptosis-related cysteine peptidase	PPZ00538A
C06	Dr.78866	NM_001007404	casp9	Caspase 9, apoptosis-related cysteine protease	PPZ06899A
C07	Dr.76374	NM_131505	caspa	Caspase a	PPZ00525A
C08	Dr.81726	NM_152884	caspb	Caspase b	PPZ01083A
C09	Dr.40733	NM_001145592	caspbl	Caspase b, like	PPZ24859A
C10	Dr.86735	NM_001083862	caspxa	Caspase Xa	PPZ14804A
C11	N/A	XM_005157937	cd27	CD27 molecule	PPZ25968A
C12	Dr.92473	NM_001145246	cd40	CD40 antigen	PPZ17144A
D01	Dr.117952	NM_001144809	cd40lg	CD40 ligand	PPZ14688A
D02	Dr.159804	NM_194399	cflara	CASP8 and FADD-like apoptosis regulator	PPZ03093A
D03	Dr.39823	NM_001256257	cideb	Cell death-inducing DFFA-like effector b	PPZ08170A
D04	Dr.85491	NM_001006066	cradd	CASP2 and RIPK1 domain containing adaptor with death domain	PPZ06717A
D05	N/A	XR_117910	cycsa	Cytochrome c, somatic a	PPZ25969A
D06	Dr.114083	NM_001100439	dad1	Defender against cell death 1	PPZ11865A
D07	Dr.80768	NM_001099990	dapk1	Si:ch211-66i11.1	PPZ09589A
D08	Dr.82562	NM_001002631	dffa	DNA fragmentation factor, alpha polypeptide	PPZ05873A
				DNA fragmentation factor, beta polypeptide (caspase-activated	

Position	UniGene	GenBank	Symbol	Description	Assay
D09	Dr.82509	NM_194404	dffb	DNase)	PPZ03104A
D10	Dr.18420	NM_200346	diabloa	Zgc:63938	PPZ03506A
D11	Dr.94478	XM_001923858	fadd	Fas (tnfrsf6)-associated via death domain	PPZ10696A
D12	Dr.85425	NM_001002583	faima	Zgc:92723	PPZ05829A
E01	Dr.150815	XM_685355	fas	Fas (TNF receptor superfamily, member 6)	PPZ14203A
E02	Dr.72304	NM_001042701	faslg	Fas ligand (TNF superfamily, member 6)	PPZ13810A
E03	Dr.27107	NM_200576	gadd45aa	Growth arrest and DNA-damage-inducible, alpha, a	PPZ03705A
E04	Dr.83410	NM_001002216	gadd45ab	Growth arrest and DNA-damage-inducible, alpha, b	PPZ05549A
E05	Dr.76293	NM_152969	igf1rb	Insulin-like growth factor 1b receptor	PPZ01034A
E06	Dr.135567	NM_001020785	il10	Interleukin 10	PPZ08480A
E07	Dr.94014	NM_001024821	lta	Lymphotoxin alpha (TNF superfamily, member 1)	PPZ08653A
E08	Dr.33208	NM_131599	mcl1a	Myeloid cell leukemia sequence 1a	PPZ00621A
E09	Dr.47468	XM_003199975	nfkb1	NF-kB1 precursor protein	PPZ11652A
E10	N/A	XM_002665060	nod1	Nucleotide-binding oligomerization domain containing 1	PPZ17371A
E11	Dr.8329	NM_131495	pycard	PYD and CARD domain containing	PPZ00518A
E12	Dr.103967	NM_001043350	ripk1l	Receptor (TNFRSF)-interacting serine-threonine kinase 1, like	PPZ12124A
F01	Dr.150902	NM_194411	ripk2	Receptor-interacting serine-threonine kinase 2	PPZ03118A
F02	Dr.94015	NM_001024447	tnfb	Tumor necrosis factor b (TNF superfamily, member 2)	PPZ08636A
F03	Dr.155306	XM_005162629	tnfrsf11a	Tumor necrosis factor receptor superfamily member 11A-like	PPZ22685A
F04	Dr.83114	XM_002665433	tnfrsf11b	Si:ch1073-210b3.1	PPZ05307A
F05	N/A	XM_009306381	tnfrsf13b	Tumor necrosis factor receptor superfamily, member 13B	PPZ25970A
F06	N/A	XM_009306702	tnfrsf17	Tumor necrosis factor receptor superfamily, member 17	PPZ25971A
F07	Dr.90157	NM_001113524	tnfrsf18	Tumor necrosis factor receptor superfamily, member 18	PPZ13070A
F08	Dr.67639	NM_001044904	tnfrsf19	Tumor necrosis factor receptor superfamily, member 19	PPZ09998A
F09	Dr.27758	NM_213190	tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a	PPZ04964A
F10	Dr.90354	NM_001089510	tnfrsf1b	Zgc:163064	PPZ16360A
F11	Dr.108925	NM_001042688	tnfrsf21	Tumor necrosis factor receptor superfamily, member 21	PPZ11419A
F12	Dr.94249	XM_001923079	tnfrsf9b	Tumor necrosis factor receptor superfamily, member 9b	PPZ25564A
G01	Dr.10712	NM_131840	tnfrsfa	Tumor necrosis factor receptor superfamily, member a	PPZ00869A
G02	Dr.86839	NM_001002593	tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10 like 2	PPZ05839A
G03	Dr.88400	NM_001076607	tnfsf12	Zgc:153941	PPZ12143A
G04	Dr.75100	NM_131327	tp53	Tumor protein p53	PPZ00370A
G05	Dr.32621	NM_214814	tp53bp2a	Tumor protein p53 binding protein, 2	PPZ05361A
G06	Dr.32588	NM_152248	tp63	Tumor protein p63	PPZ01089A
G07	Dr.24319	NM_183340	tp73	Tumor protein p73	PPZ02871A
G08	Dr.105498	NM_131607	tradd	Tnfrsf1a-associated via death domain	PPZ00628A
G09	Dr.134981	NM_001128381	traf1	TNF receptor-associated factor 1	PPZ16826A
G10	Dr.92260	XM_005171946	traf2a	Tnf receptor-associated factor 2a	PPZ11256A
G11	Dr.81587	NM_001003513	traf3	TNF receptor-associated factor 3	PPZ06085A
G12	Dr.77503	NM_194396	xiap	X-linked inhibitor of apoptosis	PPZ03090A
H01	Dr.47173	NM_214784	acta1b	Actin, alpha 1b, skeletal muscle	PPZ05295A
H02	Dr.51646	NM_001159768	b2m	Beta-2-microglobulin	PPZ00226A
H03	Dr.77915	NM_212986	hprt1	Hypoxanthine phosphoribosyltransferase 1	PPZ04796A
H04	Dr.150274	NM_201579	nono	Non-POU domain containing, octamer-binding	PPZ01381A
H05	Dr.32450	NM_212784	rpl13a	Ribosomal protein L13a	PPZ10281A
H06	N/A zebrafish	SA_00143	ZGDC	Zebrafish Genomic DNA Contamination	PPZ24726A
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 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
RT² 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
RT² 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

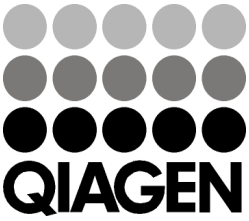
* Larger kit sizes available; please inquire.

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.

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