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

Chinese Hamster Ovary (CHO) Cell Necrosis

Cat. no. 330231 PAJJ-141ZA

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™

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Sample & Assay Technologies

Description

The Chinese Hamster Ovary (CHO) Cell Necrosis RT² Profiler PCR Array profiles the expression of 84 key genes central to necrotic cell death. Historically considered an accidental or uncontrolled cell death via swelling and lysis, necrosis (also known as necroptosis, programmed necrosis, oncosis, or type III cell death) has been found by recent scientific studies to act like a specific controlled cellular program. Activated death receptors (FAS, TNFRSF1A (TNFR1), and TNFRSF10A (TRAIL-R)) signal through the serine/threonine kinase RIPK1 (RIP1). RIPK1 interacts with RIPK3 and activates PARP1 leading to mitochondrial effects such as increased reactive oxygen species (ROS), increased cytosolic calcium, and ATP depletion. This array includes genes involved in programmed necrosis, potential necrotic genes downstream of key necrotic activators, genes involved in death receptor signaling, and genes involved in ROS production or mitochondrial activity. The same death receptors initiate both necrotic signaling and apoptosis; therefore, this array also represents downstream effectors shared by these cell death programs. Results obtained using this array can yield new insights into the molecular mechanisms of necrotic cell death. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in programmed necrosis 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	Aifm1	Ar	Atp6v1g2	Bax	Bid	Birc3	Bmf	Bnip3l	Ca9	Capn1	Capn2	Capn3
B	Capn5	Capn6	Capn7	Capns1	Casp8ap2	Ccdc103	Cd40	Commd4	Cyld	Defb1	Dennd4a	Dpysl4
C	Eda2r	Eif5b	Fadd	Faf1	Fas	Faslg	Fem1b	Foxi1	Fus	Galnt5	Glud1	Glul
D	Grb2	Hspbap1	Ikbkg	Jph3	Kcnip1	LOC100753288	LOC100760802	LOC100766833	Nfkb1	LOC103161439	Madd	Mgea5
E	Mpg	Myd88	Ngf	Ngfr	Ngfrap1	Nox1	Nox4	Palm	Parp1	Parp2	Phtf2	Pidd
F	Rab25	Ripk1	Ripk2	Ripk3	Slc25a4	Sp1	Spata2	Sycp2	Tmem123	Tmem57	Tnf	Tnfrsf14
G	Tnfrsf17	Tnfrsf1a	Tnfrsf1b	Tnfrsf25	Tnfrsf4	Tnfrsf8	Tnfsf10	Tnfsf15	Tradd	Traf2	Traf5	Txnl4b
H	Actb	Actr5	B2m	Gapdh	Hprt1	JGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	N/A	XM_003498976	Aifm1	Apoptosis-inducing factor, mitochondrion-associated, 1
A02	N/A	XM_003510871	Ar	Androgen receptor
A03	N/A	XM_003508489	Atp6v1g2	ATPase, H+ transporting, lysosomal 13kDa, V1 subunit G2
A04	N/A	NM_001244020	Bax	BCL2-associated X protein
A05	N/A	XM_003505722	Bid	BH3 interacting domain death agonist
A06	N/A	XM_003496147	Birc3	Baculoviral IAP repeat-containing 3
A07	N/A	XM_007628943	Bmf	Bcl2 modifying factor
A08	N/A	XM_007609103	Bnip3l	BCL2/adenovirus E1B 19kDa interacting protein 3-like
A09	N/A	XM_003505009	Ca9	Carbonic anhydrase IX
A10	N/A	XM_007607579	Capn1	Calpain 1, (mu/l) large subunit
A11	N/A	XM_003494960	Capn2	Calpain 2
A12	N/A	XM_003498049	Capn3	Calpain 3
B01	N/A	XM_007623095	Capn5	Calpain 5
B02	N/A	XM_007614822	Capn6	Calpain 6
B03	N/A	XM_003495295	Capn7	Calpain 7
B04	N/A	XM_007624389	Capns1	Calpain, small subunit 1
B05	N/A	XM_003495460	Casp8ap2	Caspase 8 associated protein 2
B06	N/A	XM_003504508	Ccdc103	Coiled-coil domain containing 103
B07	N/A	XM_003500525	Cd40	CD40 molecule, TNF receptor superfamily member 5
B08	N/A	XM_003497924	Commd4	COMM domain containing 4
B09	N/A	XM_003499504	Cyld	Cylindromatosis (turban tumor syndrome)
B10	N/A	XM_007625862	Defb1	Defensin, beta 1
B11	N/A	XM_003507139	Dennd4a	DENN/MADD domain containing 4A
B12	N/A	XM_003513797	Dpysl4	Dihydropyrimidinase-like 4

Position	UniGene	GenBank	Symbol	Description
C01	N/A	XM_003506758	Eda2r	Ectodysplasin A2 receptor
C02	N/A	XM_007613840	Eif5b	Eukaryotic translation initiation factor 5B
C03	N/A	XM_003505705	Fadd	Fas (TNFRSF6)-associated via death domain
C04	N/A	XM_003496486	Faf1	Fas-associated factor 1
C05	N/A	XM_007635046	Fas	Fas cell surface death receptor
C06	N/A	XM_003497659	Faslg	Fas ligand (TNF superfamily, member 6)
C07	N/A	XM_007612113	Fem1b	Fem-1 homolog b (C. elegans)
C08	N/A	XM_007634498	Foxi1	Forkhead box I1
C09	N/A	XM_003510989	Fus	Fused in sarcoma
C10	N/A	XM_003503403	Galnt5	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 5
C11	N/A	XM_003495356	Glud1	Glutamate dehydrogenase 1
C12	N/A	NM_001246770	Glul	Glutamate-ammonia ligase (glutamine synthetase)
D01	N/A	XM_003495657	Grb2	Growth factor receptor-bound protein 2
D02	N/A	XM_003495444	Hspbap1	HSPB (heat shock 27kDa) associated protein 1
D03	N/A	XM_007628073	Ikbkg	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma
D04	N/A	XM_003495141	Jph3	Junctophilin 3
D05	N/A	XM_003506731	Kcnip1	Kv channel interacting protein 1
D06	N/A	XM_007638757	LOC100753288	Glycogen phosphorylase, liver form
D07	N/A	XM_003508153	LOC100760802	Cytochrome b-245 heavy chain
D08	N/A	XM_007623915	LOC100766833	Cytochrome b-245 light chain-like
D09	N/A	XM_003515791	Nfkb1	Nuclear factor kappa B subunit 1
D10	N/A	XM_007624336	LOC103161439	Myelin-associated glycoprotein
D11	N/A	XM_003497311	Madd	MAP-kinase activating death domain
D12	N/A	XM_007628302	Mgea5	Meningioma expressed antigen 5 (hyaluronidase)
E01	N/A	XM_003511845	Mpg	N-methylpurine-DNA glycosylase
E02	N/A	XM_003505920	Myd88	Myeloid differentiation primary response 88
E03	N/A	XM_003503859	Ngf	Nerve growth factor (beta polypeptide)
E04	N/A	XM_003503946	Ngfr	Nerve growth factor receptor
E05	N/A	XM_003507898	Ngfrap1	Nerve growth factor receptor (TNFRSF16) associated protein 1
E06	N/A	XM_003499620	Nox1	NADPH oxidase 1
E07	N/A	XM_007628481	Nox4	NADPH oxidase 4
E08	N/A	XM_003502601	Palm	Paralemmin
E09	N/A	NM_001246721	Parp1	Poly (ADP-ribose) polymerase 1
E10	N/A	XM_003509203	Parp2	Poly (ADP-ribose) polymerase family, member 2
E11	N/A	XM_003504432	Phtf2	Putative homeodomain transcription factor 2
E12	N/A	XM_003509765	Pidd	P53-induced death domain protein
F01	N/A	XM_003502921	Rab25	RAB25, member RAS oncogene family
F02	N/A	XM_003513192	Ripk1	Receptor (TNFRSF)-interacting serine-threonine kinase 1
F03	N/A	XM_007621493	Ripk2	Receptor (TNFRSF)-interacting serine-threonine kinase 2
F04	N/A	XM_007611038	Ripk3	Receptor-interacting serine-threonine kinase 3

Position	UniGene	GenBank	Symbol	Description
F05	N/A	XM_003511471	Slc25a4	Solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 4
F06	N/A	XM_003507200	Sp1	Sp1 transcription factor
F07	N/A	XM_003502480	Spata2	Spermatogenesis associated 2
F08	N/A	XM_003496764	Sycp2	Synaptonemal complex protein 2
F09	N/A	XM_007639569	Tmem123	Transmembrane protein 123
F10	N/A	XM_003510661	Tmem57	Transmembrane protein 57
F11	N/A	XM_003508487	Tnf	Tumor necrosis factor
F12	N/A	XM_003513850	Tnfrsf14	Tumor necrosis factor receptor superfamily, member 14
G01	N/A	XM_003496711	Tnfrsf17	Tumor necrosis factor receptor superfamily, member 17
G02	N/A	XM_007628515	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1A
G03	N/A	XM_003515142	Tnfrsf1b	Tumor necrosis factor receptor superfamily, member 1B
G04	N/A	XM_003514969	Tnfrsf25	Tumor necrosis factor receptor superfamily, member 25
G05	N/A	XM_003509959	Tnfrsf4	Tumor necrosis factor receptor superfamily, member 4
G06	N/A	XM_007607759	Tnfrsf8	Tumor necrosis factor receptor superfamily, member 8
G07	N/A	XM_003499791	Tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10
G08	N/A	XM_007631344	Tnfsf15	Tumor necrosis factor (ligand) superfamily, member 15
G09	N/A	XM_007611815	Tradd	TNFRSF1A-associated via death domain
G10	N/A	XM_003514068	Traf2	TNF receptor-associated factor 2
G11	N/A	XM_003498563	Traf5	TNF receptor-associated factor 5
G12	N/A	XM_003501069	Txnl4b	Thioredoxin-like 4B
H01	N/A	NM_001244575	Actb	Actin, beta
H02	N/A	XM_007607973	Actr5	ARP5 actin-related protein 5 homolog (yeast)
H03	N/A	NM_001246674	B2m	Beta-2 microglobulin
H04	N/A	NM_001244854	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H05	N/A	XM_007623161	Hprt1	Hypoxanthine-guanine phosphoribosyltransferase-like
H06	N/A	SA_00519	JGDC	Hamster 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 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.

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