

# RT<sup>2</sup> Profiler PCR Array (Rotor-Gene® Format)

## Chinese Hamster Ovary (CHO) Cell Necrosis

Cat. no. 330231 PAJJ-141ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

### Description

The Chinese Hamster Ovary (CHO) Cell Necrosis RT<sup>2</sup> 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 *RT<sup>2</sup> Profiler PCR Array Handbook*.



## **Shipping and storage**

RT<sup>2</sup> 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 RT<sup>2</sup> 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.

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## Gene table: RT<sup>2</sup> Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
1	N/A	XM_003498976	Aifm1	Apoptosis-inducing factor, mitochondrion-associated, 1
2	N/A	XM_003510871	Ar	Androgen receptor
3	N/A	XM_003508489	Atp6v1g2	ATPase, H <sup>+</sup> transporting, lysosomal 13kDa, V1 subunit G2
4	N/A	NM_001244020	Bax	BCL2-associated X protein
5	N/A	XM_003505722	Bid	BH3 interacting domain death agonist
6	N/A	XM_003496147	Birc3	Baculoviral IAP repeat-containing 3
7	N/A	XM_007628943	Bmf	Bcl2 modifying factor
8	N/A	XM_007609103	Bnip3l	BCL2/adenovirus E1B 19kDa interacting protein 3-like
9	N/A	XM_003505009	Ca9	Carbonic anhydrase IX
10	N/A	XM_007607579	Capn1	Calpain 1, (mu/l) large subunit
11	N/A	XM_003494960	Capn2	Calpain 2
12	N/A	XM_003498049	Capn3	Calpain 3
13	N/A	XM_007623095	Capn5	Calpain 5
14	N/A	XM_007614822	Capn6	Calpain 6
15	N/A	XM_003495295	Capn7	Calpain 7
16	N/A	XM_007624389	Capns1	Calpain, small subunit 1
17	N/A	XM_003495460	Casp8ap2	Caspase 8 associated protein 2
18	N/A	XM_003504508	Ccdc103	Coiled-coil domain containing 103
19	N/A	XM_003500525	Cd40	CD40 molecule, TNF receptor superfamily member 5
20	N/A	XM_003497924	Commd4	COMM domain containing 4
21	N/A	XM_003499504	Cyld	Cylindromatosis (turban tumor syndrome)
22	N/A	XM_007625862	Defb1	Defensin, beta 1
23	N/A	XM_003507139	Dennd4a	DENN/MADD domain containing 4A
24	N/A	XM_003513797	Dpysl4	Dihydropyrimidinase-like 4
25	N/A	XM_003506758	Eda2r	Ectodysplasin A2 receptor
26	N/A	XM_007613840	Eif5b	Eukaryotic translation initiation factor 5B
27	N/A	XM_003505705	Fadd	Fas (TNFRSF6)-associated via death domain
28	N/A	XM_003496486	Faf1	Fas-associated factor 1
29	N/A	XM_007635046	Fas	Fas cell surface death receptor
30	N/A	XM_003497659	Faslg	Fas ligand (TNF superfamily, member 6)
31	N/A	XM_007612113	Fem1b	Fem-1 homolog b (C. elegans)
32	N/A	XM_007634498	Foxi1	Forkhead box I1
33	N/A	XM_003510989	Fus	Fused in sarcoma
34	N/A	XM_003503403	Galnt5	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 5
35	N/A	XM_003495356	Glud1	Glutamate dehydrogenase 1
36	N/A	NM_001246770	Glul	Glutamate-ammonia ligase (glutamine synthetase)
37	N/A	XM_003495657	Grb2	Growth factor receptor-bound protein 2
38	N/A	XM_003495444	Hspbap1	HSPB (heat shock 27kDa) associated protein 1

Position	UniGene	GenBank	Symbol	Description
39	N/A	XM_007628073	Ikbkg	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma
40	N/A	XM_003495141	Jph3	Junctophilin 3
41	N/A	XM_003506731	Kcnip1	Kv channel interacting protein 1
42	N/A	XM_007638757	LOC100753288	Glycogen phosphorylase, liver form
43	N/A	XM_003508153	LOC100760802	Cytochrome b-245 heavy chain
44	N/A	XM_007623915	LOC100766833	Cytochrome b-245 light chain-like
45	N/A	XM_003515791	Nfkb1	Nuclear factor kappa B subunit 1
46	N/A	XM_007624336	LOC103161439	Myelin-associated glycoprotein
47	N/A	XM_003497311	Madd	MAP-kinase activating death domain
48	N/A	XM_007628302	Mgea5	Meningioma expressed antigen 5 (hyaluronidase)
49	N/A	XM_003511845	Mpg	N-methylpurine-DNA glycosylase
50	N/A	XM_003505920	Myd88	Myeloid differentiation primary response 88
51	N/A	XM_003503859	Ngf	Nerve growth factor (beta polypeptide)
52	N/A	XM_003503946	Ngfr	Nerve growth factor receptor
53	N/A	XM_003507898	Ngfrap1	Nerve growth factor receptor (TNFRSF16) associated protein 1
54	N/A	XM_003499620	Nox1	NADPH oxidase 1
55	N/A	XM_007628481	Nox4	NADPH oxidase 4
56	N/A	XM_003502601	Palm	Paralemmin
57	N/A	NM_001246721	Parp1	Poly (ADP-ribose) polymerase 1
58	N/A	XM_003509203	Parp2	Poly (ADP-ribose) polymerase family, member 2
59	N/A	XM_003504432	Pthf2	Putative homeodomain transcription factor 2
60	N/A	XM_003509765	Pidd	P53-induced death domain protein
61	N/A	XM_003502921	Rab25	RAB25, member RAS oncogene family
62	N/A	XM_003513192	Ripk1	Receptor (TNFRSF)-interacting serine-threonine kinase 1
63	N/A	XM_007621493	Ripk2	Receptor (TNFRSF)-interacting serine-threonine kinase 2
64	N/A	XM_007611038	Ripk3	Receptor-interacting serine-threonine kinase 3
65	N/A	XM_003511471	Slc25a4	Solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 4
66	N/A	XM_003507200	Sp1	Sp1 transcription factor
67	N/A	XM_003502480	Spata2	Spermatogenesis associated 2
68	N/A	XM_003496764	Sycp2	Synaptonemal complex protein 2
69	N/A	XM_007639569	Tmem123	Transmembrane protein 123
70	N/A	XM_003510661	Tmem57	Transmembrane protein 57
71	N/A	XM_003508487	Tnf	Tumor necrosis factor
72	N/A	XM_003513850	Tnfrsf14	Tumor necrosis factor receptor superfamily, member 14
73	N/A	XM_003496711	Tnfrsf17	Tumor necrosis factor receptor superfamily, member 17
74	N/A	XM_007628515	Tnfrsfla	Tumor necrosis factor receptor superfamily, member 1A
75	N/A	XM_003515142	Tnfrsflb	Tumor necrosis factor receptor superfamily, member 1B
76	N/A	XM_003514969	Tnfrsf25	Tumor necrosis factor receptor superfamily, member 25
77	N/A	XM_003509959	Tnfrsf4	Tumor necrosis factor receptor superfamily, member 4
78	N/A	XM_007607759	Tnfrsf8	Tumor necrosis factor receptor superfamily, member 8

<b>Position</b>	<b>UniGene</b>	<b>GenBank</b>	<b>Symbol</b>	<b>Description</b>
79	N/A	XM_003499791	Tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10
80	N/A	XM_007631344	Tnfsf15	Tumor necrosis factor (ligand) superfamily, member 15
81	N/A	XM_007611815	Tradd	TNFRSF1A-associated via death domain
82	N/A	XM_003514068	Traf2	TNF receptor-associated factor 2
83	N/A	XM_003498563	Traf5	TNF receptor-associated factor 5
84	N/A	XM_003501069	Txnl4b	Thioredoxin-like 4B
85	N/A	NM_001244575	Actb	Actin, beta
86	N/A	XM_007607973	Actr5	ARP5 actin-related protein 5 homolog (yeast)
87	N/A	NM_001246674	B2m	Beta-2 microglobulin
88	N/A	NM_001244854	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
89	N/A	XM_007623161	Hprt1	Hypoxanthine-guanine phosphoribosyltransferase-like
90	N/A	SA_00519	JGDC	Hamster Genomic DNA Contamination
91	N/A	SA_00104	RTC	Reverse Transcription Control
92	N/A	SA_00104	RTC	Reverse Transcription Control
93	N/A	SA_00104	RTC	Reverse Transcription Control
94	N/A	SA_00103	PPC	Positive PCR Control
95	N/A	SA_00103	PPC	Positive PCR Control
96	N/A	SA_00103	PPC	Positive PCR Control

## Related products

For optimal performance, RT<sup>2</sup> Profiler PCR Arrays should be used together with the RT<sup>2</sup> First Strand Kit for cDNA synthesis and RT2 SYBR<sup>®</sup> Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT <sup>2</sup> First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT <sup>2</sup> SYBR Green ROX <sup>™</sup> 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.

RT<sup>2</sup> 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](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

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