

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

Rat Necrosis

Cat. no. 330231 PARN-141ZA

For pathway expression analysis

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



Sample & Assay Technologies

Description

The Rat 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	Capn1	Capn2	Capn3	Capn5
B	Capn6	Capn7	Capns1	Car9	Casp8ap2	Cd40	Cetn1	Commd4	Cyba	Cybb	Cyld	Defb1
C	Dpysl4	Fadd	Faf1	Fas	Faslg	Fem1b	Foxi1	Fus	Galnt5	Glud1	Glul	Grb2
D	Hspbap1	Ikkg	Kcnp1	Lrdd	Madd	Mag	Mgea5	Myd88	Nfk1	Ngf	Ngfr	Ngfrap1
E	Nox1	Nox4	Olr1583	Parp1	Parp2	Phf2	Ppia	Ppid	Pvr	Pygl	Rab25	RGD1311517
F	RGD1562639	Ripk1	Ripk2	Ripk3	Slc25a4	Sp1	Spata2	Sycp2	Tmem123	Tmem57	Tnf	Tnfrsf10b
G	Tnfrsf14	Tnfrsf17	Tnfrsf1a	Tnfrsf1b	Tnfrsf25	Tnfrsf4	Tnfrsf8	Tnfrsf10	Tnfrsf15	Trodd	Traf2	Txn14b
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.203165	NM_031356	Aifm1	Apoptosis-inducing factor, mitochondrion-associated 1
A02	Rn.9813	NM_012502	Ar	Androgen receptor
A03	Rn.205429	NM_212490	Atp6v1g2	ATPase, H ⁺ transporting, lysosomal V1 subunit G2
A04	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A05	Rn.31142	NM_022684	Bid	BH3 interacting domain death agonist
A06	Rn.64578	NM_023987	Birc3	Baculoviral IAP repeat-containing 3
A07	Rn.213264	NM_139258	Bmf	Bcl2 modifying factor
A08	Rn.827	NM_080888	Bnip3l	BCL2/adenovirus E1B interacting protein 3-like
A09	Rn.6037	NM_019152	Capn1	Calpain 1
A10	Rn.6822	NM_017116	Capn2	Calpain 2
A11	Rn.9726	NM_017117	Capn3	Calpain 3
A12	Rn.205446	NM_134461	Capn5	Calpain 5
B01	Rn.2862	NM_031808	Capn6	Calpain 6
B02	Rn.104104	NM_001030037	Capn7	Calpain 7
B03	Rn.3430	NM_017118	Capns1	Calpain, small subunit 1
B04	Rn.162391	NM_001107956	Car9	Carbonic anhydrase 9
B05	Rn.198715	NM_001107921	Casp8ap2	Caspase 8 associated protein 2
B06	Rn.25180	NM_134360	Cd40	CD40 molecule, TNF receptor superfamily member 5
B07	Rn.74781	NM_053461	Cetn1	Centrin, EF-hand protein, 1
B08	Rn.17650	NM_001108762	Commd4	COMM domain containing 4
B09	Rn.5856	NM_024160	Cyba	Cytochrome b-245, alpha polypeptide
B10	Rn.98491	NM_023965	Cybb	Cytochrome b-245, beta polypeptide
B11	Rn.128760	NM_001017380	Cyld	Cylindromatosis (turban tumor syndrome)
B12	Rn.31800	NM_031810	Defb1	Defensin beta 1
C01	Rn.10503	NM_012933	Dpysl4	Dihydropyrimidinase-like 4
C02	Rn.16183	NM_152937	Fadd	Fas (TNFRSF6)-associated via death domain
C03	Rn.203087	NM_130406	Faf1	Fas (TNFRSF6) associated factor 1
C04	Rn.162521	NM_139194	Fas	Fas (TNF receptor superfamily, member 6)
C05	Rn.9725	NM_012908	Faslg	Fas ligand (TNF superfamily, member 6)
C06	Rn.219320	NM_001108157	Fem1b	Fem-1 homolog b (C. elegans)
C07	Rn.32116	NM_001105776	Foxi1	Forkhead box I1
C08	Rn.100218	NM_001012137	Fus	Fusion (involved in t(12;16) in malignant liposarcoma) (human)
C09	Rn.30048	NM_031796	Galnt5	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 5 (GalNAc-T5)
C10	Rn.55106	NM_012570	Glud1	Glutamate dehydrogenase 1
C11	Rn.2204	NM_017073	Glul	Glutamate-ammonia ligase (glutamine synthetase)
C12	Rn.3360	NM_030846	Grb2	Growth factor receptor bound protein 2
D01	Rn.37915	NM_134419	Hspbap1	Hspb associated protein 1
D02	Rn.214715	NM_199103	Ikkg	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma
D03	Rn.20530	NM_022929	Kcnp1	Kv channel-interacting protein 1
D04	Rn.127674	XM_219485	Lrdd	Leucine-rich repeats and death domain containing
D05	Rn.90117	NM_053585	Madd	MAP-kinase activating death domain
D06	Rn.87331	NM_017190	Mag	Myelin-associated glycoprotein
D07	Rn.162539	NM_131904	Mgea5	Meningioma expressed antigen 5 (hyaluronidase)
D08	Rn.37341	NM_198130	Myd88	Myeloid differentiation primary response gene 88

Position	UniGene	GenBank	Symbol	Description
D09	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
D10	Rn.22168	XM_227525	Ngf	Nerve growth factor (beta polypeptide)
D11	Rn.10980	NM_012610	Ngfr	Nerve growth factor receptor (TNFR superfamily, member 16)
D12	Rn.3126	NM_053401	Ngfrap1	Nerve growth factor receptor (TNFRSF16) associated protein 1
E01	Rn.220465	NM_053683	Nox1	NADPH oxidase 1
E02	Rn.14744	NM_053524	Nox4	NADPH oxidase 4
E03	Rn.142343	NM_001000080	Olr1583	Olfactory receptor 1583
E04	Rn.11327	NM_013063	Parp1	Poly (ADP-ribose) polymerase 1
E05	Rn.22730	NM_001106030	Parp2	Poly (ADP-ribose) polymerase 2
E06	Rn.18302	NM_001106577	Phf2	Putative homeodomain transcription factor 2
E07	Rn.1463	NM_017101	Ppia	Peptidylprolyl isomerase A (cyclophilin A)
E08	Rn.136915	NM_001004279	Ppid	Peptidylprolyl isomerase D (cyclophilin D)
E09	Rn.10677	NM_017076	Pvr	Poliavirus receptor
E10	Rn.21399	NM_022268	Pygl	Phosphorylase, glycogen, liver
E11	Rn.7929	NM_001107687	Rab25	RAB25, member RAS oncogene family
E12	Rn.83717	NM_001014072	RGD1311517	Similar to RIKEN cDNA 9430015G10
F01	Rn.21843	XR_009072	RGD1562639	Similar to c-myc promoter binding protein
F02	Rn.7572	NM_001107350	Ripk1	Receptor (TNFRSF)-interacting serine-threonine kinase 1
F03	Rn.102179	XM_342810	Ripk2	Receptor-interacting serine-threonine kinase 2
F04	Rn.7110	NM_139342	Ripk3	Receptor-interacting serine-threonine kinase 3
F05	Rn.4092	NM_053515	Slc25a4	Solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 4
F06	Rn.44609	NM_012655	Sp1	Sp1 transcription factor
F07	Rn.201291	NM_053675	Spata2	Spermatogenesis associated 2
F08	Rn.14527	NM_130735	Sypc2	Synaptonemal complex protein 2
F09	Rn.12767	NM_001014205	Tmem123	Transmembrane protein 123
F10	Rn.214009	NM_001025699	Tmem57	Transmembrane protein 57
F11	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
F12	Rn.105558	NM_001108873	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
G01	Rn.14734	NM_001015034	Tnfrsf14	Tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator)
G02	Rn.17380	NM_001105761	Tnfrsf17	Tumor necrosis factor receptor superfamily, member 17
G03	Rn.11119	NM_013091	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
G04	Rn.83633	NM_130426	Tnfrsf1b	Tumor necrosis factor receptor superfamily, member 1b
G05	Rn.106560	NM_001137644	Tnfrsf25	Tumor necrosis factor receptor superfamily, member 25
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.83627	NM_145681	Tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10
G09	Rn.84873	NM_145765	Tnfsf15	Tumor necrosis factor (ligand) superfamily, member 15
G10	Rn.18545	NM_001100480	Tradd	TNFRSF1A-associated via death domain
G11	Rn.105232	NM_001107815	Traf2	Tnf receptor-associated factor 2
G12	Rn.7305	NM_001013891	Txn14b	Thioredoxin-like 4B
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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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
RT ² 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
RT ² 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.

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