

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

Rat Liver Cancer

Cat. no. 330231 PARN-133ZA

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 Liver Cancer RT² Profiler PCR Array profiles the expression of 84 key genes involved in the progression of hepatocellular carcinoma (HCC), as well as other forms of hepatocarcinogenesis. HCC is a common form of liver cancer with a poor prognosis and low survival rate, and its incidence is on the rise. Underlying liver diseases or infections are potential oncogenic mechanisms involving chronic immune and inflammatory responses. However, the link between disease or infection and carcinogenesis is currently nebulous and a focus of intensive research. Microarray studies have identified many dysregulated genes, and many are important for cellular signaling and other normal biological processes. Research directed at these genes may yield insights into the molecular mechanisms behind hepatic oncogenesis. This array includes genes commonly up- and down-regulated in HCC, genes involved in commonly altered signal transduction pathways, and genes involved in other dysregulated biological pathways such as epithelial to mesenchymal transition, cell cycle, apoptosis, and inflammation. Using realtime PCR, your research study can easily and reliably analyze the expression of a focused panel of genes involved in HCC initiation 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	Adam17	Akt1	Angpt2	Bax	Bcl2	Bcl2l1	Bid	Birc2	Birc5	Casp8	Ccl5	Ccnd1
B	Ccnd2	Cdh1	Cdh13	Cdkn1a	Cdkn1b	Cdkn2a	Cflar	Ctnnb1	Cxcr4	Dab2ip	Dlc1	E2f1
C	Egf	Egfr	Ep300	Fadd	Fas	Fhit	Fhl1	Fzd7	Gadd45b	Gstp1	Hgf	Hhip
D	Hras	Igf2	Igfbp1	Igfbp3	Irs1	Ilgb1	Kdr	Lef1	Mcl1	Met	Msh2	Msh3
E	Mtdh	Myc	Nfkb1	Nras	Opcml	Pdgfra	Pin1	Plen	Ptgs2	Plk2	Pycard	Rac1
F	Rassf1	Rb1	Reln	Rhoa	Runx3	Sfrp2	Smad4	Smad7	Socs1	Socs3	Stat3	Tcf4
G	Tert	Tgfa	Tgfb1	Tgfb2	Tlr4	Tnfrsf10b	Tnfrsf10	Tp53	Vegfa	Wt1	Xiap	Yap1
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.144585	NM_020306	Adam17	ADAM metalloproteinase domain 17
A02	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A03	Rn.138360	NM_134454	Angpt2	Angiopoietin 2
A04	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A05	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
A06	Rn.10323	NM_031535	Bcl2l1	Bcl2-like 1
A07	Rn.31142	NM_022684	Bid	BH3 interacting domain death agonist
A08	Rn.205955	NM_021752	Birc2	Baculoviral IAP repeat-containing 2
A09	Rn.54471	NM_022274	Birc5	Baculoviral IAP repeat-containing 5
A10	Rn.54474	NM_022277	Casp8	Caspase 8
A11	Rn.8019	NM_031116	Ccl5	Chemokine (C-C motif) ligand 5
A12	Rn.22279	NM_171992	Ccnd1	Cyclin D1
B01	Rn.96083	NM_022267	Ccnd2	Cyclin D2
B02	Rn.1303	NM_031334	Cdh1	Cadherin 1
B03	Rn.23806	NM_138889	Cdh13	Cadherin 13
B04	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B05	Rn.29897	NM_031762	Cdkn1b	Cyclin-dependent kinase inhibitor 1B
B06	Rn.48717	NM_031550	Cdkn2a	Cyclin-dependent kinase inhibitor 2A
B07	Rn.204752	NM_057138	Cflar	CASP8 and FADD-like apoptosis regulator
B08	Rn.112601	NM_053357	Ctnnb1	Catenin (cadherin associated protein), beta 1
B09	Rn.44431	NM_022205	Cxcr4	Chemokine (C-X-C motif) receptor 4
B10	Rn.14323	NM_138710	Dab2ip	DAB2 interacting protein
B11	Rn.7255	NM_001127446	Dlc1	Deleted in liver cancer 1
B12	Rn.72471	NM_001100778	E2f1	E2F transcription factor 1
C01	Rn.6075	NM_012842	Egf	Epidermal growth factor
C02	Rn.37227	NM_031507	Egfr	Epidermal growth factor receptor
C03	Rn.12447	XM_576312	Ep300	E1A binding protein p300
C04	Rn.16183	NM_152937	Fadd	Fas (TNFRSF6)-associated via death domain
C05	Rn.162521	NM_139194	Fas	Fas (TNF receptor superfamily, member 6)
C06	Rn.45598	NM_021774	Fhit	Fragile histidine triad gene
C07	Rn.10239	NM_019306	Fhl1	Fms-related tyrosine kinase 1
C08	Rn.1806	XM_237191	Fzd7	Frizzled homolog 7 (Drosophila)
C09	Rn.35886	NM_001008321	Gadd45b	Growth arrest and DNA-damage-inducible, beta
C10	Rn.87063	NM_012577	Gstp1	Glutathione S-transferase pi 1
C11	Rn.10468	NM_017017	Hgf	Hepatocyte growth factor
C12	Rn.204425	XM_238042	Hhip	Hedgehog-interacting protein
D01	Rn.102180	NM_001098241	Hras	Harvey rat sarcoma virus oncogene
D02	Rn.118681	NM_031511	Igf2	Insulin-like growth factor 2
D03	Rn.34026	NM_013144	Igfbp1	Insulin-like growth factor binding protein 1
D04	Rn.26369	NM_012588	Igfbp3	Insulin-like growth factor binding protein 3
D05	Rn.10476	NM_012969	Irs1	Insulin receptor substrate 1
D06	Rn.25733	NM_017022	Ilgb1	Integrin, beta 1
D07	Rn.88869	NM_013062	Kdr	Kinase insert domain receptor
D08	Rn.21926	NM_130429	Lef1	Lymphoid enhancer binding factor 1
D09	Rn.129914	NM_021846	Mcl1	Myeloid cell leukemia sequence 1

Position	UniGene	GenBank	Symbol	Description
D10	Rn.10617	NM_031517	Met	Met proto-oncogene
D11	Rn.3174	NM_031058	Msh2	MutS homolog 2 (E. coli)
D12	Rn.162551	XM_001065837	Msh3	MutS homolog 3 (E. coli)
E01	Rn.6864	NM_133398	Midh	Metadherin
E02	Rn.12072	NM_012603	Myc	Myelocytomatosis oncogene
E03	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E04	Rn.217722	NM_080766	Nras	Neuroblastoma ras oncogene
E05	Rn.11366	NM_053848	Opcml	Opioid binding protein/cell adhesion molecule-like
E06	Rn.55127	NM_012802	Pdgfra	Platelet derived growth factor receptor, alpha polypeptide
E07	Rn.6291	NM_001106701	Pin1	Peptidylprolyl cis/trans isomerase, NIMA-interacting 1
E08	Rn.22158	NM_031606	Pten	Phosphatase and tensin homolog
E09	Rn.44369	NM_017232	Ptgs2	Prostaglandin-endoperoxide synthase 2
E10	Rn.2809	NM_013081	Plk2	PTK2 protein tyrosine kinase 2
E11	Rn.7817	NM_172322	Pycard	PYD and CARD domain containing
E12	Rn.29157	NM_134366	Rac1	Ras-related C3 botulinum toxin substrate 1
F01	Rn.83042	NM_001007754	Rassf1	Ras association (RalGDS/AF-6) domain family member 1
F02	Rn.55115	NM_017045	Rb1	Retinoblastoma 1
F03	Rn.98353	NM_080394	Reln	Reelin
F04	Rn.107401	NM_057132	Rhoa	Ras homolog gene family, member A
F05	Rn.205217	NM_130425	Runx3	Runt-related transcription factor 3
F06	Rn.102416	NM_001100700	Sfrp2	Secreted frizzled-related protein 2
F07	Rn.9774	NM_019275	Smad4	SMAD family member 4
F08	Rn.29980	NM_030858	Smad7	SMAD family member 7
F09	Rn.82754	NM_145879	Socs1	Suppressor of cytokine signaling 1
F10	Rn.127801	NM_053565	Socs3	Suppressor of cytokine signaling 3
F11	Rn.10247	NM_012747	Stat3	Signal transducer and activator of transcription 3
F12	Rn.23354	NM_053369	Tcf4	Transcription factor 4
G01	Rn.48802	NM_053423	Tert	Telomerase reverse transcriptase
G02	Rn.9952	NM_012671	Tgfa	Transforming growth factor alpha
G03	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G04	Rn.9954	NM_031132	Tgfb2	Transforming growth factor, beta receptor II
G05	Rn.14534	NM_019178	Tlr4	Toll-like receptor 4
G06	Rn.105558	NM_001108873	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
G07	Rn.83627	NM_145681	Tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10
G08	Rn.54443	NM_030989	Tp53	Tumor protein p53
G09	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G10	Rn.92531	NM_031534	Wt1	Wilms tumor 1
G11	Rn.91239	NM_022231	Xiap	X-linked inhibitor of apoptosis
G12	Rn.162978	NM_001034002	Yap1	Yes-associated protein 1
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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