

# RT<sup>2</sup> Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

## Mouse Liver Cancer

Cat. no. 330231 PAMM-133ZA

For pathway expression analysis

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



## Description

The Mouse Liver Cancer RT<sup>2</sup> 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 *RT<sup>2</sup> Profiler PCR Array Handbook*.

## Shipping and storage

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

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## Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT<sup>2</sup> Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
<b>A</b>	Adam17	Akt1	Angpt2	Bax	Bcl2	Bcl2l1	Bid	Birc2	Birc5	Casp8	Ccl5	Ccnd1
<b>B</b>	Ccnd2	Cdh1	Cdh13	Cdkn1a	Cdkn1b	Cdkn2a	Cflar	Ctnnb1	Cxcr4	Dab2ip	Dlc1	E2f1
<b>C</b>	Egf	Egfr	Ep300	Fadd	Fas	Fhit	Fhl1	Fzd7	Gadd45b	Gstp1	Hgf	Hhip
<b>D</b>	Hras1	Igf2	Igfbp1	Igfbp3	Irs1	Ilgb1	Kdr	Lef1	Mcl1	Mef	Msh2	Msh3
<b>E</b>	Mtdh	Myc	Nfkb1	Nras	Opocml	Pdgfra	Pin1	Pten	Ptgs2	Ptk2	Pycard	Rac1
<b>F</b>	Rassf1	Rb1	Reln	Rhoa	Runx3	Sfrp2	Smad4	Smad7	Socs1	Socs3	Stat3	Tcf4
<b>G</b>	Tert	Tgfa	Tgfb1	Tgfb2	Tlr4	Tnfrsf10b	Tnfrsf10	Trp53	Vegfa	Wt1	Xiap	Yap1
<b>H</b>	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

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

Position	UniGene	GenBank	Symbol	Description
A01	Mm.27681	NM_009615	Adam17	A disintegrin and metallopeptidase domain 17
A02	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A03	Mm.439874	NM_007426	Angpt2	Angiopoietin 2
A04	Mm.19904	NM_007527	Bax	Bcl2-associated X protein
A05	Mm.257460	NM_009741	Bcl2	B-cell leukemia/lymphoma 2
A06	Mm.238213	NM_009743	Bcl2l1	Bcl2-like 1
A07	Mm.235081	NM_007544	Bid	BH3 interacting domain death agonist
A08	Mm.335659	NM_007465	Birc2	Baculoviral IAP repeat-containing 2
A09	Mm.8552	NM_009689	Birc5	Baculoviral IAP repeat-containing 5
A10	Mm.336851	NM_009812	Casp8	Caspase 8
A11	Mm.284248	NM_013653	Ccl5	Chemokine (C-C motif) ligand 5
A12	Mm.273049	NM_007631	Ccnd1	Cyclin D1
B01	Mm.333406	NM_009829	Ccnd2	Cyclin D2
B02	Mm.35605	NM_009864	Cdh1	Cadherin 1
B03	Mm.334841	NM_019707	Cdh13	Cadherin 13
B04	Mm.195663	NM_007669	Cdkn1a	Cyclin-dependent kinase inhibitor 1A (P21)
B05	Mm.2958	NM_009875	Cdkn1b	Cyclin-dependent kinase inhibitor 1B
B06	Mm.4733	NM_009877	Cdkn2a	Cyclin-dependent kinase inhibitor 2A
B07	Mm.336848	NM_009805	Cflar	CASP8 and FADD-like apoptosis regulator
B08	Mm.291928	NM_007614	Ctnnb1	Catenin (cadherin associated protein), beta 1
B09	Mm.1401	NM_009911	Cxcr4	Chemokine (C-X-C motif) receptor 4
B10	Mm.29629	NM_001001602	Dab2ip	Disabled homolog 2 (Drosophila) interacting protein
B11	Mm.210875	NM_015802	Dlc1	Deleted in liver cancer 1
B12	Mm.18036	NM_007891	E2f1	E2F transcription factor 1
C01	Mm.252481	NM_010113	Egf	Epidermal growth factor
C02	Mm.8534	NM_007912	Egfr	Epidermal growth factor receptor
C03	Mm.258397	NM_177821	Ep300	E1A binding protein p300
C04	Mm.5126	NM_010175	Fadd	Fas (TNFRSF6)-associated via death domain
C05	Mm.1626	NM_007987	Fas	Fas (TNF receptor superfamily member 6)
C06	Mm.397619	NM_010210	Fhit	Fragile histidine triad gene
C07	Mm.389712	NM_010228	Fhl1	FMS-like tyrosine kinase 1
C08	Mm.297906	NM_008057	Fzd7	Frizzled homolog 7 (Drosophila)
C09	Mm.1360	NM_008655	Gadd45b	Growth arrest and DNA-damage-inducible 45 beta
C10	Mm.299292	NM_013541	Gstp1	Glutathione S-transferase, pi 1
C11	Mm.267078	NM_010427	Hgf	Hepatocyte growth factor
C12	Mm.254493	NM_020259	Hhip	Hedgehog-interacting protein
D01	Mm.334313	NM_008284	Hras1	Harvey rat sarcoma virus oncogene 1
D02	Mm.3862	NM_010514	Igf2	Insulin-like growth factor 2
D03	Mm.21300	NM_008341	Igfbp1	Insulin-like growth factor binding protein 1
D04	Mm.29254	NM_008343	Igfbp3	Insulin-like growth factor binding protein 3
D05	Mm.4952	NM_010570	Irs1	Insulin receptor substrate 1
D06	Mm.263396	NM_010578	Ilgb1	Integrin beta 1 (fibronectin receptor beta)
D07	Mm.285	NM_010612	Kdr	Kinase insert domain protein receptor
D08	Mm.255219	NM_010703	Lef1	Lymphoid enhancer binding factor 1
D09	Mm.1639	NM_008562	Mcl1	Myeloid cell leukemia sequence 1

Position	UniGene	GenBank	Symbol	Description
D10	Mm.86844	NM_008591	Met	Met proto-oncogene
D11	Mm.4619	NM_008628	Msh2	MutS homolog 2 (E. coli)
D12	Mm.343101	NM_010829	Msh3	MutS homolog 3 (E. coli)
E01	Mm.130883	NM_026002	Mtdh	Metadherin
E02	Mm.2444	NM_010849	Myc	Myelocytomatosis oncogene
E03	Mm.256765	NM_008689	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1, p105
E04	Mm.400954	NM_010937	Nras	Neuroblastoma ras oncogene
E05	Mm.379474	NM_177906	Opcml	Opioid binding protein/cell adhesion molecule-like
E06	Mm.221403	NM_011058	Pdgfra	Platelet derived growth factor receptor, alpha polypeptide
E07	Mm.7906	NM_023371	Pin1	Protein (peptidyl-prolyl cis/trans isomerase) NIMA-interacting 1
E08	Mm.245395	NM_008960	Pten	Phosphatase and tensin homolog
E09	Mm.292547	NM_011198	Pigs2	Prostaglandin-endoperoxide synthase 2
E10	Mm.254494	NM_007982	Plk2	PTK2 protein tyrosine kinase 2
E11	Mm.24163	NM_023258	Pycard	PYD and CARD domain containing
E12	Mm.292510	NM_009007	Rac1	RAS-related C3 botulinum substrate 1
F01	Mm.12091	NM_019713	Rassf1	Ras association (RalGDS/AF-6) domain family member 1
F02	Mm.273862	NM_009029	Rb1	Retinoblastoma 1
F03	Mm.425236	NM_011261	Reln	Reelin
F04	Mm.757	NM_016802	Rhoa	Ras homolog gene family, member A
F05	Mm.378894	NM_019732	Runx3	Runt related transcription factor 3
F06	Mm.19155	NM_009144	Sfrp2	Secreted frizzled-related protein 2
F07	Mm.100399	NM_008540	Smad4	MAD homolog 4 (Drosophila)
F08	Mm.34407	NM_001042660	Smad7	MAD homolog 7 (Drosophila)
F09	Mm.130	NM_009896	Socs1	Suppressor of cytokine signaling 1
F10	Mm.3468	NM_007707	Socs3	Suppressor of cytokine signaling 3
F11	Mm.249934	NM_011486	Stat3	Signal transducer and activator of transcription 3
F12	Mm.4269	NM_013685	Tcf4	Transcription factor 4
G01	Mm.10109	NM_009354	Tert	Telomerase reverse transcriptase
G02	Mm.137222	NM_031199	Tgfa	Transforming growth factor alpha
G03	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G04	Mm.172346	NM_009371	Tgfb2	Transforming growth factor, beta receptor II
G05	Mm.38049	NM_021297	Tlr4	Toll-like receptor 4
G06	Mm.193430	NM_020275	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
G07	Mm.1062	NM_009425	Tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10
G08	Mm.222	NM_011640	Trp53	Transformation related protein 53
G09	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
G10	Mm.389339	NM_144783	Wt1	Wilms tumor 1 homolog
G11	Mm.259879	NM_009688	Xiap	X-linked inhibitor of apoptosis
G12	Mm.221992	NM_009534	Yap1	Yes-associated protein 1
H01	Mm.328431	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H05	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90 alpha (cytosolic), class B member 1
H06	N/A	SA_00106	MGDC	Mouse 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, RT<sup>2</sup> Profiler PCR Arrays should be used together with the RT<sup>2</sup> First Strand Kit for cDNA synthesis and RT<sup>2</sup> 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 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 <sup>2</sup> 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 <sup>2</sup> 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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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.

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