

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

## Human Signal Transduction PathwayFinder

Cat. no. 330231 PAHS-014ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> Profiler PCR Array, Format A	Applied Biosystems <sup>®</sup> models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad <sup>®</sup> models iCycler <sup>®</sup> , iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf <sup>®</sup> Mastercycler <sup>®</sup> ep realplex models 2, 2s, 4, 4s; Stratagene <sup>®</sup> models Mx3005P <sup>®</sup> , Mx3000P <sup>®</sup> ; 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 <sup>®</sup> , DNA Engine Opticon 2; Stratagene Mx4000 <sup>®</sup>
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 <sup>®</sup> LightCycler <sup>®</sup> 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 <sup>®</sup> BioMark™



Sample & Assay Technologies

## Description

The Human Signal Transduction PathwayFinder RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 key genes responsive to signal transduction pathway activation or inhibition. Cellular signaling forms a complex network of gene interactions involving multiple signal transduction pathways. Each pathway ultimately increases or decreases the expression of its target genes resulting in alteration of cellular processes. Changes in target gene expression suggest signaling pathway activation or inhibition. However, gene expression results in the same pathway vary widely, depending on model systems and experimental conditions. Therefore, multiple target genes from each pathway should be examined to ensure accurate signaling pathway identification in a variety of model systems. In addition, analyzing multiple pathways simultaneously tests for signaling pathway crosstalk. This array includes target genes for 10 commonly studied signal transduction pathways, including pathways important for developmental, immunological, metabolic, and stress-activated processes. Results obtained with this array can suggest pathways that are potentially activated or inhibited by an experimental stimulus for further follow-up studies. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in cellular signaling 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  $-20^{\circ}\text{C}$ .

**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
A	ACSL3	ACSL4	ACSL5	ADM	ARNT	ATF4	AXIN2	BAX	BBC3	BCL2	BCL2A1	BCL2L1
B	BIRC3	BMP2	BMP4	BTG2	CA9	CCL5	CCND1	CCND2	CDKN1A	CDKN1B	CEBPD	CPT2
C	CSF1	DAB2	EGFR	EMP1	EPO	FABP1	FAS	FCER2	FOSL1	FTH1	GADD45A	GADD45B
D	GATA3	GCLC	GCLM	GSR	HERPUD1	HES1	HES5	HEY1	HEY2	HEYL	HMOX1	ICAM1
E	ID1	IFNG	IFRD1	IRF1	JAG1	LDHA	LFNG	LRG1	MCL1	MMP7	MYC	NOTCH1
F	NQO1	QLR1	PCNA	PPARD	PTCH1	RB1	SERPINE1	SLC27A4	SLC2A1	SOCS3	SORBS1	SQSTM1
G	STAT1	TNF	TNFSF10	TXN	TXNRD1	VEGFA	WISP1	WNT1	WNT2B	WNT3A	WNT5A	WNT6
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

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

Position	UniGene	GenBank	Symbol	Description
A01	Hs.655772	NM_004457	ACSL3	Acyl-CoA synthetase long-chain family member 3
A02	Hs.268785	NM_004458	ACSL4	Acyl-CoA synthetase long-chain family member 4
A03	Hs.11638	NM_016234	ACSL5	Acyl-CoA synthetase long-chain family member 5
A04	Hs.441047	NM_001124	ADM	Adrenomedullin
A05	Hs.632446	NM_001668	ARNT	Aryl hydrocarbon receptor nuclear translocator
A06	Hs.496487	NM_001675	ATF4	Activating transcription factor 4 (tax-responsive enhancer element B67)
A07	Hs.156527	NM_004655	AXIN2	Axin 2
A08	Hs.624291	NM_004324	BAX	BCL2-associated X protein
A09	Hs.467020	NM_014417	BBC3	BCL2 binding component 3
A10	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A11	Hs.227817	NM_004049	BCL2A1	BCL2-related protein A1
A12	Hs.516966	NM_138578	BCL2L1	BCL2-like 1
B01	Hs.127799	NM_001165	BIRC3	Baculoviral IAP repeat containing 3
B02	Hs.73853	NM_001200	BMP2	Bone morphogenetic protein 2
B03	Hs.68879	NM_130851	BMP4	Bone morphogenetic protein 4
B04	Hs.519162	NM_006763	BTG2	BTG family, member 2
B05	Hs.63287	NM_001216	CA9	Carbonic anhydrase IX
B06	Hs.514821	NM_002985	CCL5	Chemokine (C-C motif) ligand 5
B07	Hs.523852	NM_053056	CCND1	Cyclin D1
B08	Hs.376071	NM_001759	CCND2	Cyclin D2
B09	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B10	Hs.238990	NM_004064	CDKN1B	Cyclin-dependent kinase inhibitor 1B (p27, Kip1)
B11	Hs.440829	NM_005195	CEBPD	CCAAT/enhancer binding protein (C/EBP), delta
B12	Hs.705379	NM_000098	CPT2	Carnitine palmitoyltransferase 2
C01	Hs.591402	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)
C02	Hs.481980	NM_001343	DAB2	Disabled homolog 2, mitogen-responsive phosphoprotein (Drosophila)
C03	Hs.488293	NM_005228	EGFR	Epidermal growth factor receptor
C04	Hs.707901	NM_001423	EMP1	Epithelial membrane protein 1
C05	Hs.2303	NM_000799	EPO	Erythropoietin
C06	Hs.380135	NM_001443	FABP1	Fatty acid binding protein 1, liver
C07	Hs.244139	NM_000043	FAS	Fas (TNF receptor superfamily, member 6)
C08	Hs.465778	NM_002002	FCER2	Fc fragment of IgE, low affinity II, receptor for (CD23)
C09	Hs.283565	NM_005438	FOSL1	FOS-like antigen 1
C10	Hs.645560	NM_002032	FTH1	Ferritin, heavy polypeptide 1
C11	Hs.80409	NM_001924	GADD45A	Growth arrest and DNA-damage-inducible, alpha
C12	Hs.110571	NM_015675	GADD45B	Growth arrest and DNA-damage-inducible, beta
D01	Hs.524134	NM_002051	GATA3	GATA binding protein 3
D02	Hs.654465	NM_001498	GCLC	Glutamate-cysteine ligase, catalytic subunit
D03	Hs.315562	NM_002061	GCLM	Glutamate-cysteine ligase, modifier subunit
D04	Hs.271510	NM_000637	GSR	Glutathione reductase
D05	Hs.146393	NM_014685	HERPUD1	Homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
D06	Hs.250666	NM_005524	HES1	Hairy and enhancer of split 1, (Drosophila)
D07	Hs.57971	NM_001010926	HES5	Hairy and enhancer of split 5 (Drosophila)
D08	Hs.234434	NM_012258	HEY1	Hairy/enhancer-of-split related with YRPW motif 1

Position	UniGene	GenBank	Symbol	Description
D09	Hs.144287	NM_012259	HEY2	Hairy/enhancer-of-split related with YRPW motif 2
D10	Hs.472566	NM_014571	HEYL	Hairy/enhancer-of-split related with YRPW motif-like
D11	Hs.517581	NM_002133	HMOX1	Heme oxygenase (decycling) 1
D12	Hs.643447	NM_000201	ICAM1	Intercellular adhesion molecule 1
E01	Hs.504609	NM_002165	ID1	Inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
E02	Hs.856	NM_000619	IFNG	Interferon, gamma
E03	Hs.7879	NM_001550	IFRD1	Interferon-related developmental regulator 1
E04	Hs.436061	NM_002198	IRF1	Interferon regulatory factor 1
E05	Hs.728907	NM_000214	JAG1	Jagged 1
E06	Hs.2795	NM_005566	LDHA	Lactate dehydrogenase A
E07	Hs.159142	NM_001040167	LFNG	LFNG O-fucosylpeptide 3-beta-N-acetylglucosaminyltransferase
E08	Hs.655559	NM_052972	LRG1	Leucine-rich alpha-2-glycoprotein 1
E09	Hs.632486	NM_021960	MCL1	Myeloid cell leukemia sequence 1 (BCL2-related)
E10	Hs.2256	NM_002423	MMP7	Matrix metalloproteinase 7 (matrilysin, uterine)
E11	Hs.202453	NM_002467	MYC	V-myc myelocytomatosis viral oncogene homolog (avian)
E12	Hs.495473	NM_017617	NOTCH1	Notch 1
F01	Hs.406515	NM_000903	NQO1	NAD(P)H dehydrogenase, quinone 1
F02	Hs.412484	NM_002543	OLR1	Oxidized low density lipoprotein (lectin-like) receptor 1
F03	Hs.728886	NM_182649	PCNA	Proliferating cell nuclear antigen
F04	Hs.696032	NM_006238	PPARD	Peroxisome proliferator-activated receptor delta
F05	Hs.494538	NM_000264	PTCH1	Patched 1
F06	Hs.408528	NM_000321	RB1	Retinoblastoma 1
F07	Hs.414795	NM_000602	SERPINE1	Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
F08	Hs.656699	NM_005094	SLC27A4	Solute carrier family 27 (fatty acid transporter), member 4
F09	Hs.473721	NM_006516	SLC2A1	Solute carrier family 2 (facilitated glucose transporter), member 1
F10	Hs.527973	NM_003955	SOCS3	Suppressor of cytokine signaling 3
F11	Hs.38621	NM_006434	SORBS1	Sorbin and SH3 domain containing 1
F12	Hs.437277	NM_003900	SQSTM1	Sequestosome 1
G01	Hs.642990	NM_007315	STAT1	Signal transducer and activator of transcription 1, 91kDa
G02	Hs.241570	NM_000594	TNF	Tumor necrosis factor
G03	Hs.478275	NM_003810	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10
G04	Hs.435136	NM_003329	TXN	Thioredoxin
G05	Hs.728817	NM_003330	TXNRD1	Thioredoxin reductase 1
G06	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
G07	Hs.492974	NM_003882	WISP1	WNT1 inducible signaling pathway protein 1
G08	Hs.248164	NM_005430	WNT1	Wingless-type MMTV integration site family, member 1
G09	Hs.258575	NM_004185	WNT2B	Wingless-type MMTV integration site family, member 2B
G10	Hs.336930	NM_033131	WNT3A	Wingless-type MMTV integration site family, member 3A
G11	Hs.696364	NM_003392	WNT5A	Wingless-type MMTV integration site family, member 5A
G12	Hs.29764	NM_006522	WNT6	Wingless-type MMTV integration site family, member 6
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human 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.

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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