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

Human Cancer PathwayFinder

Cat. no. 330231 PAHS-033ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² 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
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Human Cancer PathwayFinder RT² Profiler PCR Array profiles the expression of 84 genes representative of 9 different biological pathways involved in transformation and tumorigenesis. During oncogenesis, gene mutations and related expression changes accumulate in pathways regulating specific aspects of cell growth. Biological pathways that, when deregulated, allow cells to grow and divide unchecked include apoptosis (or programmed cell death), cell cycle, DNA damage repair, cellular senescence, and telomere maintenance. Recent studies indicate that changes in metabolism also occur as tumors grow, due in part to altered gene expression. Angiogenesis, another commonly affected pathway, allows further tumor growth via vascularization and oxygenation when stimulated by tumor cell hypoxia signaling. Epithelial-to-mesenchymal transition (EMT) permits tumors to invade surrounding tissue and metastasize. Many genes mediate and control each of these pathways, and changes in the expression of any of those genes can deregulate its pathway. Thus, the combination of affected genes in any given cancer or tumor can be distinctive. Understanding the molecular mechanisms behind specific cancers and researching diagnostic and prognostic biomarkers requires analyses of not just one of these pathways in isolation, but of all the pathways together. This array includes target genes for these 9 important cancer-related pathways, and its results can suggest pathways that are potentially activated or inhibited in tumor cell samples for further follow-up studies. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes related to oncogenesis 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	ACLY	ACSL4	ADM	ANGPT1	ANGPT2	APAF1	ARNT	ATP5A1	AURKA	BCL2L11	BIRC3	BMI1
B	CA9	CASP2	CASP7	CASP9	CCL2	CCND2	CCND3	CDC20	CDH2	CFLAR	COX5A	CPT2
C	DDB2	DDIT3	DKC1	DSP	E2F4	EPO	ERCC3	ERCC5	ETS2	FASLG	FGF2	FLT1
D	FOXC2	G6PD	GADD45G	GPD2	GSC	HMOX1	IGFBP3	IGFBP5	IGFBP7	KDR	KRT14	LDHA
E	LIG4	LPL	MAP2K1	MAP2K3	MAPK14	MCM2	MKI67	NOL3	OCLN	PFKL	PGF	PINX1
F	POLB	PPP1R15A	SERPINB2	SERPINF1	SKP2	SLC2A1	SNAI1	SNAI2	SNAI3	SOD1	SOX10	STMN1
G	TBX2	TEK	TEP1	TERF1	TERF2IP	TINF2	TNKS	TNKS2	UQCRFS1	VEGFC	WEE1	XIAP
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.387567	NM_001096	ACLY	ATP citrate lyase
A02	Hs.268785	NM_004458	ACSL4	Acyl-CoA synthetase long-chain family member 4
A03	Hs.441047	NM_001124	ADM	Adrenomedullin
A04	Hs.369675	NM_001146	ANGPT1	Angiopoietin 1
A05	Hs.583870	NM_001147	ANGPT2	Angiopoietin 2
A06	Hs.728891	NM_001160	APAF1	Apoptotic peptidase activating factor 1
A07	Hs.632446	NM_001668	ARNT	Aryl hydrocarbon receptor nuclear translocator
A08	Hs.298280	NM_004046	ATP5A1	ATP synthase, H+ transporting, mitochondrial F1 complex, alpha subunit 1, cardiac muscle
A09	Hs.250822	NM_003600	AURKA	Aurora kinase A
A10	Hs.469658	NM_006538	BCL2L11	BCL2-like 11 (apoptosis facilitator)
A11	Hs.127799	NM_001165	BIRC3	Baculoviral IAP repeat containing 3
A12	Hs.380403	NM_005180	BMI1	BMI1 polycomb ring finger oncogene
B01	Hs.63287	NM_001216	CA9	Carbonic anhydrase IX
B02	Hs.368982	NM_032982	CASP2	Caspase 2, apoptosis-related cysteine peptidase
B03	Hs.9216	NM_001227	CASP7	Caspase 7, apoptosis-related cysteine peptidase
B04	Hs.329502	NM_001229	CASP9	Caspase 9, apoptosis-related cysteine peptidase
B05	Hs.303649	NM_002982	CCL2	Chemokine (C-C motif) ligand 2
B06	Hs.376071	NM_001759	CCND2	Cyclin D2
B07	Hs.534307	NM_001760	CCND3	Cyclin D3
B08	Hs.524947	NM_001255	CDC20	Cell division cycle 20 homolog (S. cerevisiae)
B09	Hs.464829	NM_001792	CDH2	Cadherin 2, type 1, N-cadherin (neuronal)
B10	Hs.390736	NM_003879	CFLAR	CASP8 and FADD-like apoptosis regulator
B11	Hs.401903	NM_004255	COX5A	Cytochrome c oxidase subunit Va
B12	Hs.705379	NM_000098	CPT2	Carnitine palmitoyltransferase 2
C01	Hs.700338	NM_000107	DDB2	Damage-specific DNA binding protein 2, 48kDa
C02	Hs.728989	NM_004083	DDIT3	DNA-damage-inducible transcript 3
C03	Hs.4747	NM_001363	DKC1	Dyskeratosis congenita 1, dyskerin
C04	Hs.519873	NM_004415	DSP	Desmoplakin
C05	Hs.108371	NM_001950	E2F4	E2F transcription factor 4, p107/p130-binding
C06	Hs.2303	NM_000799	EPO	Erythropoietin
C07	Hs.469872	NM_000122	ERCC3	Excision repair cross-complementing rodent repair deficiency, complementation group 3 (xeroderma pigmentosum group B complementing)
C08	Hs.258429	NM_000123	ERCC5	Excision repair cross-complementing rodent repair deficiency, complementation group 5
C09	Hs.644231	NM_005239	ETS2	V-Ets erythroblastosis virus E26 oncogene homolog 2 (avian)
C10	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily, member 6)
C11	Hs.284244	NM_002006	FGF2	Fibroblast growth factor 2 (basic)
C12	Hs.654360	NM_002019	FLT1	Fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor)
D01	Hs.436448	NM_005251	FOXC2	Forkhead box C2 (MFH-1, mesenchyme forkhead 1)
D02	Hs.461047	NM_000402	G6PD	Glucose-6-phosphate dehydrogenase
D03	Hs.9701	NM_006705	GADD45G	Growth arrest and DNA-damage-inducible, gamma
D04	Hs.512382	NM_000408	GPD2	Glycerol-3-phosphate dehydrogenase 2 (mitochondrial)
D05	Hs.440438	NM_173849	GSC	Goosecoid homeobox

Position	UniGene	GenBank	Symbol	Description
D06	Hs.517581	NM_002133	HMOX1	Heme oxygenase (decycling) 1
D07	Hs.450230	NM_000598	IGFBP3	Insulin-like growth factor binding protein 3
D08	Hs.607212	NM_000599	IGFBP5	Insulin-like growth factor binding protein 5
D09	Hs.479808	NM_001553	IGFBP7	Insulin-like growth factor binding protein 7
D10	Hs.479756	NM_002253	KDR	Kinase insert domain receptor (a type III receptor tyrosine kinase)
D11	Hs.654380	NM_000526	KRT14	Keratin 14
D12	Hs.2795	NM_005566	LDHA	Lactate dehydrogenase A
E01	Hs.166091	NM_002312	LIG4	Ligase IV, DNA, ATP-dependent
E02	Hs.180878	NM_000237	LPL	Lipoprotein lipase
E03	Hs.145442	NM_002755	MAP2K1	Mitogen-activated protein kinase kinase 1
E04	Hs.514012	NM_002756	MAP2K3	Mitogen-activated protein kinase kinase 3
E05	Hs.485233	NM_001315	MAPK14	Mitogen-activated protein kinase 14
E06	Hs.477481	NM_004526	MCM2	Minichromosome maintenance complex component 2
E07	Hs.689823	NM_002417	MKI67	Antigen identified by monoclonal antibody Ki-67
E08	Hs.513667	NM_003946	NOL3	Nucleolar protein 3 (apoptosis repressor with CARD domain)
E09	Hs.592605	NM_002538	OCLN	Occludin
E10	Hs.255093	NM_002626	PFKL	Phosphofructokinase, liver
E11	Hs.252820	NM_002632	PGF	Placental growth factor
E12	Hs.490991	NM_017884	PINX1	PIN2/TERF1 interacting, telomerase inhibitor 1
F01	Hs.654484	NM_002690	POLB	Polymerase (DNA directed), beta
F02	Hs.631593	NM_014330	PPP1R15A	Protein phosphatase 1, regulatory (inhibitor) subunit 15A
F03	Hs.594481	NM_002575	SERPINB2	Serpin peptidase inhibitor, clade B (ovalbumin), member 2
F04	Hs.532768	NM_002615	SERPINF1	Serpin peptidase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1
F05	Hs.23348	NM_005983	SKP2	S-phase kinase-associated protein 2 (p45)
F06	Hs.473721	NM_006516	SLC2A1	Solute carrier family 2 (facilitated glucose transporter), member 1
F07	Hs.48029	NM_005985	SNAI1	Snail homolog 1 (Drosophila)
F08	Hs.360174	NM_003068	SNAI2	Snail homolog 2 (Drosophila)
F09	Hs.253790	NM_178310	SNAI3	Snail homolog 3 (Drosophila)
F10	Hs.443914	NM_000454	SOD1	Superoxide dismutase 1, soluble
F11	Hs.376984	NM_006941	SOX10	SRY (sex determining region Y)-box 10
F12	Hs.209983	NM_005563	STMN1	Stathmin 1
G01	Hs.531085	NM_005994	TBX2	T-box 2
G02	Hs.89640	NM_000459	TEK	TEK tyrosine kinase, endothelial
G03	Hs.508835	NM_007110	TEP1	Telomerase-associated protein 1
G04	Hs.442707	NM_017489	TERF1	Telomeric repeat binding factor (NIMA-interacting) 1
G05	Hs.301419	NM_018975	TERF2IP	Telomeric repeat binding factor 2, interacting protein
G06	Hs.496191	NM_012461	TINF2	TERF1 (TRF1)-interacting nuclear factor 2
G07	Hs.370267	NM_003747	TNKS	Tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase
G08	Hs.329327	NM_025235	TNKS2	Tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase 2
G09	Hs.170107	NM_006003	UQCRFS1	Ubiquinol-cytochrome c reductase, Rieske iron-sulfur polypeptide 1
G10	Hs.435215	NM_005429	VEGFC	Vascular endothelial growth factor C
G11	Hs.249441	NM_003390	WEE1	WEE1 homolog (S. pombe)
G12	Hs.356076	NM_001167	XIAP	X-linked inhibitor of apoptosis
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, 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.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² 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
RT² 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
RT² 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.

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 or can be requested from QIAGEN Technical Services or your local distributor.

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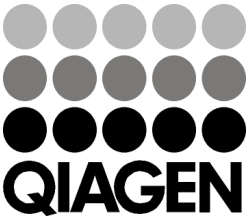

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