

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

Human Oncogenes & Tumor Suppressor Genes

Cat. no. 330231 PAHS-502ZA

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 Human Oncogenes & Tumor Suppressor Genes RT² Profiler PCR Array profiles the expression of 84 key genes that promote oncogenesis. The genes represented by this array either have oncogenic or tumor suppressor properties or both depending not only on the tumor type, but also on the known or observed differences in gene expression relative to matched normal tissue. Profiling the expression of these genes in your tumor samples may correlate them with biological phenotypes or clinical outcomes like staging, therapy selection, metastasis, recurrence, and survival rate, among others. The results may also provide insights into the molecular mechanisms and biological pathways behind oncogenesis and cancer pathology, including deregulation of apoptosis, cell cycle, cell adhesion, DNA damage & repair, and signal transduction. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in 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	ABL1	AKT1	APC	ATM	BAX	BCL2	BCL2L1	BCR	BRCA1	BRCA2	CASP8	CCND1
B	CDH1	CDK4	CDKN1A	CDKN2A	CDKN2B	CDKN3	CTNNB1	E2F1	EGF	ELK1	ERBB2	ESR1
C	ETS1	FHIT	FOS	FOXD3	HGF	HIC1	HRAS	IGF2R	JAK2	JUN	JUNB	JUND
D	KIT	KITLG	KRAS	MCL1	MDM2	MEN1	MET	MGMT	MLH1	MOS	MYB	MYC
E	MYCN	NF1	NF2	NFKB1	NFKBIA	NRAS	PIK3C2A	PIK3CA	PML	PRKCA	RAF1	RARA
F	RASSF1	RB1	REL	RET	ROS1	RUNX1	RUNX3	S100A4	SERPINB5	SH3PXD2A	SMAD4	SRC
G	STAT3	STK11	TGFB1	TNF	TP53	TP73	TSC1	VHL	WT1	VWOOX	XRCC1	ZHX2
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.431048	NM_005157	ABL1	C-abl oncogene 1, non-receptor tyrosine kinase
A02	Hs.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
A03	Hs.158932	NM_000038	APC	Adenomatous polyposis coli
A04	Hs.367437	NM_000051	ATM	Ataxia telangiectasia mutated
A05	Hs.624291	NM_004324	BAX	BCL2-associated X protein
A06	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A07	Hs.516966	NM_138578	BCL2L1	BCL2-like 1
A08	Hs.517461	NM_004327	BCR	Breakpoint cluster region
A09	Hs.194143	NM_007294	BRCA1	Breast cancer 1, early onset
A10	Hs.34012	NM_000059	BRCA2	Breast cancer 2, early onset
A11	Hs.599762	NM_001228	CASP8	Caspase 8, apoptosis-related cysteine peptidase
A12	Hs.523852	NM_053056	CCND1	Cyclin D1
B01	Hs.461086	NM_004360	CDH1	Cadherin 1, type 1, E-cadherin (epithelial)
B02	Hs.95577	NM_000075	CDK4	Cyclin-dependent kinase 4
B03	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B04	Hs.512599	NM_000077	CDKN2A	Cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4)
B05	Hs.72901	NM_004936	CDKN2B	Cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)
B06	Hs.84113	NM_005192	CDKN3	Cyclin-dependent kinase inhibitor 3
B07	Hs.476018	NM_001904	CTNNB1	Catenin (cadherin-associated protein), beta 1, 88kDa
B08	Hs.654393	NM_005225	E2F1	E2F transcription factor 1
B09	Hs.419815	NM_001963	EGF	Epidermal growth factor
B10	Hs.181128	NM_005229	ELK1	ELK1, member of ETS oncogene family
B11	Hs.446352	NM_004448	ERBB2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
B12	Hs.208124	NM_000125	ESR1	Estrogen receptor 1
C01	Hs.369438	NM_005238	ETS1	V-ets erythroblastosis virus E26 oncogene homolog 1 (avian)
C02	Hs.715588	NM_002012	FHIT	Fragile histidine triad gene
C03	Hs.728789	NM_005252	FOS	FBJ murine osteosarcoma viral oncogene homolog
C04	Hs.546573	NM_012183	FOXD3	Forkhead box D3
C05	Hs.396530	NM_000601	HGF	Hepatocyte growth factor (hepapoietin A; scatter factor)
C06	Hs.72956	NM_006497	HIC1	Hypermethylated in cancer 1
C07	Hs.37003	NM_005343	HRAS	V-Ha-ras Harvey rat sarcoma viral oncogene homolog
C08	Hs.487062	NM_000876	IGF2R	Insulin-like growth factor 2 receptor
C09	Hs.656213	NM_004972	JAK2	Janus kinase 2
C10	Hs.714791	NM_002228	JUN	Jun proto-oncogene
C11	Hs.25292	NM_002229	JUNB	Jun B proto-oncogene
C12	Hs.2780	NM_005354	JUND	Jun D proto-oncogene
D01	Hs.479754	NM_000222	KIT	V-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
D02	Hs.1048	NM_003994	KITLG	KIT ligand
D03	Hs.505033	NM_004985	KRAS	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
D04	Hs.632486	NM_021960	MCL1	Myeloid cell leukemia sequence 1 (BCL2-related)
D05	Hs.484551	NM_002392	MDM2	Mdm2 p53 binding protein homolog (mouse)
D06	Hs.423348	NM_000244	MEN1	Multiple endocrine neoplasia I
D07	Hs.132966	NM_000245	MET	Met proto-oncogene (hepatocyte growth factor receptor)
D08	Hs.501522	NM_002412	MGMT	O-6-methylguanine-DNA methyltransferase

Position	UniGene	GenBank	Symbol	Description
D09	Hs.195364	NM_000249	MLH1	MutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)
D10	Hs.533432	NM_005372	MOS	V-mos Moloney murine sarcoma viral oncogene homolog
D11	Hs.654446	NM_005375	MYB	V-myb myeloblastosis viral oncogene homolog (avian)
D12	Hs.202453	NM_002467	MYC	V-myc myelocytomatosis viral oncogene homolog (avian)
E01	Hs.25960	NM_005378	MYCN	V-myc myelocytomatosis viral related oncogene, neuroblastoma derived (avian)
E02	Hs.113577	NM_000267	NF1	Neurofibromin 1
E03	Hs.187898	NM_000268	NF2	Neurofibromin 2 (merlin)
E04	Hs.654408	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E05	Hs.81328	NM_020529	NFKBIA	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
E06	Hs.486502	NM_002524	NRAS	Neuroblastoma RAS viral (v-ras) oncogene homolog
E07	Hs.175343	NM_002645	PIK3C2A	Phosphoinositide-3-kinase, class 2, alpha polypeptide
E08	Hs.553498	NM_006218	PIK3CA	Phosphoinositide-3-kinase, catalytic, alpha polypeptide
E09	Hs.526464	NM_033238	PML	Promyelocytic leukemia
E10	Hs.531704	NM_002737	PRKCA	Protein kinase C, alpha
E11	Hs.159130	NM_002880	RAF1	V-raf-1 murine leukemia viral oncogene homolog 1
E12	Hs.654583	NM_000964	RARA	Retinoic acid receptor, alpha
F01	Hs.476270	NM_007182	RASSF1	Ras association (RalGDS/AF-6) domain family member 1
F02	Hs.408528	NM_000321	RB1	Retinoblastoma 1
F03	Hs.631886	NM_002908	REL	V-rel reticuloendotheliosis viral oncogene homolog (avian)
F04	Hs.350321	NM_020630	RET	Ret proto-oncogene
F05	Hs.1041	NM_002944	ROS1	C-ros oncogene 1, receptor tyrosine kinase
F06	Hs.149261	NM_001754	RUNX1	Runt-related transcription factor 1
F07	Hs.170019	NM_004350	RUNX3	Runt-related transcription factor 3
F08	Hs.654444	NM_002961	S100A4	S100 calcium binding protein A4
F09	Hs.55279	NM_002639	SERPINB5	Serpin peptidase inhibitor, clade B (ovalbumin), member 5
F10	Hs.594708	NM_014631	SH3PXD2A	SH3 and PX domains 2A
F11	Hs.75862	NM_005359	SMAD4	SMAD family member 4
F12	Hs.195659	NM_005417	SRC	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G01	Hs.463059	NM_003150	STAT3	Signal transducer and activator of transcription 3 (acute-phase response factor)
G02	Hs.515005	NM_000455	STK11	Serine/threonine kinase 11
G03	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
G04	Hs.241570	NM_000594	TNF	Tumor necrosis factor
G05	Hs.654481	NM_000546	TP53	Tumor protein p53
G06	Hs.697294	NM_005427	TP73	Tumor protein p73
G07	Hs.370854	NM_000368	TSC1	Tuberous sclerosis 1
G08	Hs.517792	NM_000551	VHL	Von Hippel-Lindau tumor suppressor
G09	Hs.591980	NM_000378	WT1	Wilms tumor 1
G10	Hs.461453	NM_016373	WWOX	WW domain containing oxidoreductase
G11	Hs.98493	NM_006297	XRCC1	X-ray repair complementing defective repair in Chinese hamster cells 1
G12	Hs.377090	NM_014943	ZHX2	Zinc fingers and homeoboxes 2
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.
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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