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

Human Lung Cancer

Cat. no. 330231 PAHS-134ZA

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 Lung Cancer RT² Profiler PCR Array profiles the expression of 84 key genes commonly involved in lung cancer development. Most instances of lung cancer arise from cigarette smoking, but also exposure to other environmental hazards such as passive cigarette smoke, radon gas, asbestos, and viral infection. The major subtype of lung cancer in patients with smoking history, non-small-cell lung carcinoma (NSCLC), includes adenocarcinoma (AC) which derives from peripheral lung tissue and squamous-cell carcinoma (SCC) which derives from central bronchi. While the exact molecular mechanisms behind lung cancer are still under heavy investigation, tumor suppressor gene inhibition and oncogene activation play important roles. The affected tumor suppressors and oncogenes regulate immune response, apoptosis, cell cycle, PI3K/AKT, and cell adhesion pathways. Research directed at these pathways and genes differentially expressed in lung cancer subtypes versus normal tissue may yield insights into the molecular mechanisms behind lung oncogenesis. This array includes genes detected routinely in molecular analysis of lung cancer samples and discovered via high-throughput microarray profiling studies, as well as genes known to have differentially methylated promoters in lung cancer. Lung cancers tend to metastasize; therefore, the array includes genes associated with metastatic potential. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in lung cancer initiation, progression, and metastasis 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	AGER	AGR2	AKT1	ANXA5	APBA1	APC	BCL2	BIRC5	BRAF	CA4	CADM1	CDH1
B	CDH13	CDKN1C	CDKN2A	CDKN2B	CEACAM5	CEACAM6	CLCA2	CLDN18	CLIC5	COL11A1	CP	CSF3
C	CXCL12	CXCL13	CYP1B1	DLC1	DSG3	DUSP6	EGFR	ERBB2	ERBB3	FABP4	FHIT	GPM6A
D	GREM1	HGF	HMMR	HRAS	IRF4	KRAS	KRT14	KRT5	LCK	LGSN	MET	MGMT
E	MKI67	MLH1	MMD	MMP1	MMP12	MMP9	MTHFR	NF1	NFKB1	NKX2-1	OPCML	PAX5
F	PRDM2	PTGS2	RASSF1	RASSF2	RB1	SCGB1A1	SFRP1	SFTA3	SFTPC	SOSTDC1	SPINK1	SPP1
G	SPRR1A	STAT1	STAT2	TCF21	TERT	TGFB1	TNF	TOP2A	TOX3	TP53	VEGFA	WIF1
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.706739	NM_001136	AGER	Advanced glycosylation end product-specific receptor
A02	Hs.530009	NM_006408	AGR2	Anterior gradient homolog 2 (Xenopus laevis)
A03	Hs.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
A04	Hs.480653	NM_001154	ANXA5	Annexin A5
A05	Hs.171939	NM_001163	APBA1	Amyloid beta (A4) precursor protein-binding, family A, member 1
A06	Hs.158932	NM_000038	APC	Adenomatous polyposis coli
A07	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A08	Hs.728893	NM_001168	BIRC5	Baculoviral IAP repeat containing 5
A09	Hs.550061	NM_004333	BRAF	V-raf murine sarcoma viral oncogene homolog B1
A10	Hs.89485	NM_000717	CA4	Carbonic anhydrase IV
A11	Hs.370510	NM_014333	CADM1	Cell adhesion molecule 1
A12	Hs.461086	NM_004360	CDH1	Cadherin 1, type 1, E-cadherin (epithelial)
B01	Hs.654386	NM_001257	CDH13	Cadherin 13, H-cadherin (heart)
B02	Hs.106070	NM_000076	CDKN1C	Cyclin-dependent kinase inhibitor 1C (p57, Kip2)
B03	Hs.512599	NM_000077	CDKN2A	Cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4)
B04	Hs.72901	NM_004936	CDKN2B	Cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)
B05	Hs.709196	NM_004363	CEACAM5	Carcinoembryonic antigen-related cell adhesion molecule 5
B06	Hs.466814	NM_002483	CEACAM6	Carcinoembryonic antigen-related cell adhesion molecule 6 (non-specific cross reacting antigen)
B07	Hs.241551	NM_006536	CLCA2	Chloride channel accessory 2
B08	Hs.655324	NM_016369	CLDN18	Claudin 18
B09	Hs.485489	NM_016929	CLIC5	Chloride intracellular channel 5
B10	Hs.523446	NM_080629	COL11A1	Collagen, type XI, alpha 1
B11	Hs.558314	NM_000096	CP	Ceruloplasmin (ferroxidase)
B12	Hs.2233	NM_000759	CSF3	Colony stimulating factor 3 (granulocyte)
C01	Hs.522891	NM_000609	CXCL12	Chemokine (C-X-C motif) ligand 12
C02	Hs.100431	NM_006419	CXCL13	Chemokine (C-X-C motif) ligand 13
C03	Hs.154654	NM_000104	CYP1B1	Cytochrome P450, family 1, subfamily B, polypeptide 1
C04	Hs.134296	NM_006094	DLC1	Deleted in liver cancer 1
C05	Hs.1925	NM_001944	DSG3	Desmoglein 3
C06	Hs.298654	NM_001946	DUSP6	Dual specificity phosphatase 6
C07	Hs.488293	NM_005228	EGFR	Epidermal growth factor receptor
C08	Hs.446352	NM_004448	ERBB2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
C09	Hs.118681	NM_001982	ERBB3	V-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
C10	Hs.391561	NM_001442	FABP4	Fatty acid binding protein 4, adipocyte
C11	Hs.715588	NM_002012	FHIT	Fragile histidine triad gene
C12	Hs.75819	NM_201591	GPM6A	Glycoprotein M6A
D01	Hs.40098	NM_013372	GREM1	Gremlin 1
D02	Hs.396530	NM_000601	HGF	Hepatocyte growth factor (hepapoietin A; scatter factor)
D03	Hs.72550	NM_012484	HMMR	Hyaluronan-mediated motility receptor (RHAMM)
D04	Hs.37003	NM_005343	HRAS	V-Ha-ras Harvey rat sarcoma viral oncogene homolog
D05	Hs.401013	NM_002460	IRF4	Interferon regulatory factor 4
D06	Hs.505033	NM_004985	KRAS	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
D07	Hs.654380	NM_000526	KRT14	Keratin 14

Position	UniGene	GenBank	Symbol	Description
D08	Hs.433845	NM_000424	KRT5	Keratin 5
D09	Hs.470627	NM_005356	LCK	Lymphocyte-specific protein tyrosine kinase
D10	Hs.149585	NM_016571	LGSN	Lengsin, lens protein with glutamine synthetase domain
D11	Hs.132966	NM_000245	MET	Met proto-oncogene (hepatocyte growth factor receptor)
D12	Hs.501522	NM_002412	MGMT	O-6-methylguanine-DNA methyltransferase
E01	Hs.689823	NM_002417	MKI67	Antigen identified by monoclonal antibody Ki-67
E02	Hs.195364	NM_000249	MLH1	MutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)
E03	Hs.463483	NM_012329	MMD	Monocyte to macrophage differentiation-associated
E04	Hs.83169	NM_002421	MMP1	Matrix metallopeptidase 1 (interstitial collagenase)
E05	Hs.1695	NM_002426	MMP12	Matrix metallopeptidase 12 (macrophage elastase)
E06	Hs.297413	NM_004994	MMP9	Matrix metallopeptidase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
E07	Hs.214142	NM_005957	MTHFR	Methylenetetrahydrofolate reductase (NAD(P)H)
E08	Hs.113577	NM_000267	NF1	Neurofibromin 1
E09	Hs.654408	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E10	Hs.705388	NM_003317	NKX2-1	NK2 homeobox 1
E11	Hs.4817	NM_002545	OPCML	Opioid binding protein/cell adhesion molecule-like
E12	Hs.654464	NM_016734	PAX5	Paired box 5
F01	Hs.371823	NM_015866	PRDM2	PR domain containing 2, with ZNF domain
F02	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
F03	Hs.476270	NM_007182	RASSF1	Ras association (RalGDS/AF-6) domain family member 1
F04	Hs.631504	NM_014737	RASSF2	Ras association (RalGDS/AF-6) domain family member 2
F05	Hs.408528	NM_000321	RB1	Retinoblastoma 1
F06	Hs.523732	NM_003357	SCGB1A1	Secretoglobin, family 1A, member 1 (uteroglobin)
F07	Hs.713546	NM_003012	SFRP1	Secreted frizzled-related protein 1
F08	Hs.509165	NM_001101341	SFTA3	Surfactant associated 3
F09	Hs.1074	NM_003018	SFTPC	Surfactant protein C
F10	Hs.648106	NM_015464	SOSTDC1	Sclerostin domain containing 1
F11	Hs.407856	NM_003122	SPINK1	Serine peptidase inhibitor, Kazal type 1
F12	Hs.313	NM_000582	SPP1	Secreted phosphoprotein 1
G01	Hs.46320	NM_005987	SPRR1A	Small proline-rich protein 1A
G02	Hs.642990	NM_007315	STAT1	Signal transducer and activator of transcription 1, 91kDa
G03	Hs.530595	NM_005419	STAT2	Signal transducer and activator of transcription 2, 113kDa
G04	Hs.78061	NM_003206	TCF21	Transcription factor 21
G05	Hs.492203	NM_198253	TERT	Telomerase reverse transcriptase
G06	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
G07	Hs.241570	NM_000594	TNF	Tumor necrosis factor
G08	Hs.156346	NM_001067	TOP2A	Topoisomerase (DNA) II alpha 170kDa
G09	Hs.460789	NM_001080430	TOX3	TOX high mobility group box family member 3
G10	Hs.654481	NM_000546	TP53	Tumor protein p53
G11	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
G12	Hs.284122	NM_007191	WIF1	WNT inhibitory factor 1
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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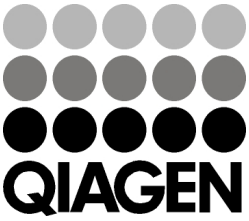

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