

RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Lung Cancer

Cat. no. 330231 PARN-134ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

Description

The Rat 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 the Rotor-Gene format are shipped at ambient temperature, on

dry ice, or blue ice packs depending on destination and accompanying products.

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.



Sample & Assay Technologies

Array layout

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc™ (plate A1–A12=Rotor-Disc 1–12, plate B1–B12=Rotor-Disc 13–24, etc.). To maintain data analysis compatibility, wells 97–100 do not contain real-time assays but will contain master mix to account for weight balance.

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.9829	NM_053336	Ager	Advanced glycosylation end product-specific receptor
A02	Rn.98889	NM_001106725	Agr2	Anterior gradient homolog 2 (Xenopus laevis)
A03	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A04	Rn.3318	NM_013132	Anxa5	Annexin A5
A05	Rn.54819	NM_031779	Apba1	Amyloid beta (A4) precursor protein-binding, family A, member 1
A06	Rn.88057	NM_012499	Apc	Adenomatous polyposis coli
A07	Rn.90091	NM_012825	Aqp4	Aquaporin 4
A08	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A09	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
A10	Rn.205813	XM_231692	Braf	V-raf murine sarcoma viral oncogene homolog B1
A11	Rn.19928	NM_001012201	Cadm1	Cell adhesion molecule 1
A12	Rn.51389	NM_019174	Car4	Carbonic anhydrase 4
B01	Rn.10562	NM_012922	Casp3	Caspase 3
B02	Rn.22279	NM_171992	Ccnd1	Cyclin D1
B03	Rn.102418	NM_031561	Cd36	CD36 molecule (thrombospondin receptor)
B04	Rn.1303	NM_031334	Cdh1	Cadherin 1
B05	Rn.23806	NM_138889	Cdh13	Cadherin 13
B06	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B07	Rn.162507	NM_182735	Cdkn1c	Cyclin-dependent kinase inhibitor 1C
B08	Rn.48717	NM_031550	Cdkn2a	Cyclin-dependent kinase inhibitor 2A
B09	Rn.105626	NM_130812	Cdkn2b	Cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)
B10	Rn.122781	NM_001103358	Ceacam6	Carcinoembryonic antigen-related cell adhesion molecule 6
B11	Rn.1838	NM_053603	Clic5	Chloride intracellular channel 5
B12	Rn.260	XM_342325	Col11a1	Collagen, type XI, alpha 1
C01	Rn.32777	NM_012532	Cp	Ceruloplasmin
C02	Rn.53973	NM_017104	Csf3	Colony stimulating factor 3 (granulocyte)
C03	Rn.112601	NM_053357	Ctnnb1	Catenin (cadherin associated protein), beta 1
C04	Rn.54439	NM_022177	Cxcl12	Chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1)
C05	Rn.6917	NM_001017496	Cxcl13	Chemokine (C-X-C motif) ligand 13
C06	Rn.10125	NM_012940	Cyp1b1	Cytochrome P450, family 1, subfamily b, polypeptide 1
C07	Rn.7255	NM_001127446	Dlc1	Deleted in liver cancer 1
C08	Rn.202966	NM_022282	Dlg2	Discs, large homolog 2 (Drosophila)
C09	Rn.4313	NM_053883	Dusp6	Dual specificity phosphatase 6
C10	Rn.37227	NM_031507	Egfr	Epidermal growth factor receptor
C11	Rn.93966	NM_017003	ErbB2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
C12	Rn.10228	NM_017218	ErbB3	V-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)
D01	Rn.7320	NM_001106228	Erc1	Excision repair cross-complementing rodent repair deficiency, complementation group 1
D02	Rn.4258	NM_053365	Fabp4	Fatty acid binding protein 4, adipocyte
D03	Rn.45598	NM_021774	Fhit	Fragile histidine triad gene
D04	Rn.34370	NM_178105	Gpm6a	Glycoprotein m6a
D05	Rn.42929	NM_019282	Grem1	Gremlin 1, cysteine knot superfamily, homolog (Xenopus laevis)
D06	Rn.10468	NM_017017	Hgf	Hepatocyte growth factor
D07	Rn.10852	NM_024359	Hif1a	Hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)
D08	Rn.102180	NM_001098241	Hras	Harvey rat sarcoma virus oncogene
D09	Rn.82114	NM_001106108	Irf4	Interferon regulatory factor 4
D10	Rn.54004	NM_022264	Kit	V-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
D11	Rn.24554	NM_031515	Kras	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
D12	Rn.153972	NM_001008751	Krt14	Keratin 14
E01	Rn.120205	NM_183333	Krt5	Keratin 5
E02	Rn.22791	NM_001100709	Lck	Lymphocyte-specific protein tyrosine kinase
E03	Rn.34914	NM_053842	Mapk1	Mitogen activated protein kinase 1
E04	Rn.10617	NM_031517	Met	Met proto-oncogene
E05	Rn.9836	NM_012861	Mgmt	O-6-methylguanine-DNA methyltransferase
E06	Rn.73551	XM_225460	Mki67	Antigen identified by monoclonal antibody Ki-67

Position	UniGene	GenBank	Symbol	Description
E07	Rn.20391	NM_031053	Mlh1	MutL homolog 1 (E. coli)
E08	Rn.33193	NM_053963	Mmp12	Matrix metalloproteinase 12
E09	Rn.79007	NM_001134530	Mmp1a	Matrix metalloproteinase 1a (interstitial collagenase)
E10	Rn.6422	NM_031054	Mmp2	Matrix metalloproteinase 2
E11	Rn.10209	NM_031055	Mmp9	Matrix metalloproteinase 9
E12	Rn.10494	XM_342975	Mthfr	Methylenetetrahydrofolate reductase (NAD(P)H)
F01	Rn.10686	NM_012609	Nf1	Neurofibromin 1
F02	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
F03	Rn.34265	NM_013093	Nkx2-1	NK2 homeobox 1
F04	Rn.11366	NM_053848	Opcml	Opioid binding protein/cell adhesion molecule-like
F05	Rn.202632	NM_001077648	Prdm2	PR domain containing 2, with ZNF domain
F06	Rn.44369	NM_017232	Ptgs2	Prostaglandin-endoperoxide synthase 2
F07	Rn.83042	NM_001007754	Rassf1	Ras association (RalGDS/AF-6) domain family member 1
F08	Rn.8360	NM_001037096	Rassf2	Ras association (RalGDS/AF-6) domain family member 2
F09	Rn.55115	NM_017045	Rb1	Retinoblastoma 1
F10	Rn.163333	XM_224987	Sfrp1	Secreted frizzled-related protein 1
F11	Rn.3926	NM_017342	Sftpc	Surfactant protein C
F12	Rn.2415	NM_153737	Sostdc1	Sclerostin domain containing 1
G01	Rn.8871	NM_012881	Spp1	Secreted phosphoprotein 1
G02	Rn.33229	NM_032612	Stat1	Signal transducer and activator of transcription 1
G03	Rn.24237	NM_001011905	Stat2	Signal transducer and activator of transcription 2
G04	Rn.1671	NM_001032397	Tcf21	Transcription factor 21
G05	Rn.48802	NM_053423	Tert	Telomerase reverse transcriptase
G06	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G07	Rn.165619	NM_001169138	Thbs2	Thrombospondin 2
G08	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G09	Rn.90996	NM_022183	Top2a	Topoisomerase (DNA) II alpha
G10	Rn.54443	NM_030989	Tp53	Tumor protein p53
G11	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G12	Rn.74256	NM_053738	Wif1	Wnt inhibitory factor 1
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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 ROX [™] FAST Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the Rotor-Gene Q and other Rotor-Gene cyclers	330620

* 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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