

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

Rat Leukemia

Cat. no. 330231 PARN-137ZA

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 Rat Leukemia RT² Profiler PCR Array profiles the expression of 84 key genes commonly involved in leukemia development, classification, and therapeutic response. The term leukemia covers a spectrum of diseases called hematological neoplasms, but mostly refers to cancer of the blood or bone marrow characterized by an abnormal increase of white blood cells. Clinical and pathological subtypes of leukemia define both its onset (Acute or Chronic) and the affected blood cell type (Lymphoblastic/Lymphocytic or Myeloid/Myelogenous). Leukemia affects molecular and biological pathways responsible for the normal blood cell function including inflammatory and immune responses, JAK-STAT signaling, and lymphocyte and myeloid cell development and differentiation. In addition, a common chromosomal translocation in leukemia, the BCR-ABL fusion gene, over-stimulates ABL signaling. The differentiation of the affected cells from lymphopoietic and erythropoietic stem cells has led to the concept of leukemia stem cells, reinforcing the importance of their regulatory transcription factors. This array represents many genes in these pathways as well as a number of common leukemia therapeutic targets derived from molecular analyses of those same pathways. The array also includes deregulated genes detected routinely in molecular analysis of leukemia samples and in high-throughput microarray profiling studies, as well as genes known to have differentially methylated promoters in leukemia. Monitoring the expression of these genes may lead to a better understanding of the molecular mechanisms behind leukemia. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in leukemia initiation and progression 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	Alox5	Apaf1	Baalc	Bcl2	Bcr	Bmpr1b	Bltg3	Cadm1	Ccl3	Cd34
B	Cdc42ep3	Cdh1	Cdh13	Cdkn1a	Cdkn1b	Cdkn1c	Cdkn2b	Cebpb	Csf3	Ctgf	Ctnnb1	Cxcl10
C	Dapk1	Dkk3	Dlc1	Egr3	Fgr	Foxo3	Gas2l3	Gata1	Grb2	Hck	Hdac1	Hic1
D	Hsp90aa1	Ifna1	Ikzf3	Il10	Il12a	Il15	Il1r1	Il4	Il6	Jak2	Jun	Junb
E	Lmo1	Lmo2	Lyl1	Mcl1	Meis1	Mertk	Mlh1	Mn1	Mtor	Nfk1	Npm1	Nr4a3
F	Pml	Prkcb	Pten	Rac2	Rgs12	Runx1	Runx2	Runx3	Sfrp2	Sfrp4	Sfrp5	Shc1
G	Smo	Socs1	Spi1	Stat1	Stat3	Stat5a	Stat5b	Tal1	Tlx1	Tlx3	Tp53	Wif1
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.3105	NM_001100850	Abl1	C-abl oncogene 1, receptor tyrosine kinase
A02	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A03	Rn.9662	NM_012822	Alox5	Arachidonate 5-lipoxygenase
A04	Rn.64522	NM_023979	Apaf1	Apoptotic peptidase activating factor 1
A05	Rn.19969	NM_144762	Baalc	Brain and acute leukemia, cytoplasmic
A06	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
A07	Rn.12782	XM_228091	Bcr	Breakpoint cluster region
A08	Rn.215592	NM_001024259	Bmpr1b	Bone morphogenetic protein receptor, type IB
A09	Rn.8897	NM_019290	Bltg3	BTG family, member 3
A10	Rn.19928	NM_001012201	Cadm1	Cell adhesion molecule 1
A11	Rn.10139	NM_013025	Ccl3	Chemokine (C-C motif) ligand 3
A12	Rn.219720	NM_001107202	Cd34	CD34 molecule
B01	Rn.4040	NM_001048044	Cdc42ep3	CDC42 effector protein (Rho GTPase binding) 3
B02	Rn.1303	NM_031334	Cdh1	Cadherin 1
B03	Rn.23806	NM_138889	Cdh13	Cadherin 13
B04	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B05	Rn.29897	NM_031762	Cdkn1b	Cyclin-dependent kinase inhibitor 1B
B06	Rn.162507	NM_182735	Cdkn1c	Cyclin-dependent kinase inhibitor 1C
B07	Rn.105626	NM_130812	Cdkn2b	Cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)
B08	Rn.6479	NM_024125	Cebpb	CCAAT/enhancer binding protein (C/EBP), beta
B09	Rn.53973	NM_017104	Csf3	Colony stimulating factor 3 (granulocyte)
B10	Rn.17145	NM_022266	Ctgf	Connective tissue growth factor
B11	Rn.112601	NM_053357	Ctnnb1	Catenin (cadherin associated protein), beta 1
B12	Rn.10584	NM_139089	Cxcl10	Chemokine (C-X-C motif) ligand 10
C01	Rn.23108	NM_001107335	Dapk1	Death associated protein kinase 1
C02	Rn.12516	NM_138519	Dkk3	Dickkopf homolog 3 (Xenopus laevis)
C03	Rn.7255	NM_001127446	Dlc1	Deleted in liver cancer 1
C04	Rn.44371	NM_017086	Egr3	Early growth response 3
C05	Rn.11309	NM_024145	Fgr	Gardner-Rasheed feline sarcoma viral (v-fgr) oncogene homolog
C06	Rn.24593	NM_001106395	Foxo3	Forkhead box O3
C07	Rn.203623	XM_001056437	Gas2l3	Growth arrest-specific 2 like 3
C08	Rn.10024	NM_012764	Gata1	GATA binding protein 1
C09	Rn.3360	NM_030846	Grb2	Growth factor receptor bound protein 2
C10	Rn.10945	NM_013185	Hck	Hemopoietic cell kinase
C11	Rn.1863	NM_001025409	Hdac1	Histone deacetylase 1
C12	Rn.11570	NM_001107021	Hic1	Hypermethylated in cancer 1
D01	Rn.119867	NM_175761	Hsp90aa1	Heat shock protein 90, alpha (cytosolic), class A member 1
D02	Rn.196548	NM_001014786	Ifna1	Interferon-alpha 1
D03	Rn.218596	NM_001107047	Ikzf3	IKAROS family zinc finger 3
D04	Rn.9868	NM_012854	Il10	Interleukin 10
D05	Rn.207199	NM_053390	Il12a	Interleukin 12a
D06	Rn.2490	NM_013129	Il15	Interleukin 15
D07	Rn.9758	NM_013123	Il1r1	Interleukin 1 receptor, type I
D08	Rn.108255	NM_201270	Il4	Interleukin 4
D09	Rn.9873	NM_012589	Il6	Interleukin 6

Position	UniGene	GenBank	Symbol	Description
D10	Rn.18909	NM_031514	Jak2	Janus kinase 2
D11	Rn.93714	NM_021835	Jun	Jun oncogene
D12	Rn.15806	NM_021836	Junb	Jun B proto-oncogene
E01	Rn.25503	NM_139112	Lmo1	LIM domain only 1
E02	Rn.155591	NM_001037358	Lmo2	LIM domain only 2
E03	Rn.17352	NM_001007677	Lyl1	Lymphoblastic leukemia derived sequence 1
E04	Rn.129914	NM_021846	Mcl1	Myeloid cell leukemia sequence 1
E05	Rn.32269	NM_001134702	Meis1	Meis homeobox 1
E06	Rn.207207	NM_022943	Merk	C-mer proto-oncogene tyrosine kinase
E07	Rn.20391	NM_031053	Mlh1	MutL homolog 1 (E. coli)
E08	Rn.214028	XM_001080607	Mn1	Meningioma 1
E09	Rn.11008	NM_019906	Mtor	Mechanistic target of rapamycin (serine/threonine kinase)
E10	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E11	Rn.54537	NM_012992	Npm1	Nucleophosmin (nucleolar phosphoprotein B23, numatrin)
E12	Rn.62694	NM_017352	Nr4a3	Nuclear receptor subfamily 4, group A, member 3
F01	Rn.214058	XM_236296	Pml	Promyelocytic leukemia
F02	Rn.91118	NM_012713	Prkcb	Protein kinase C, beta
F03	Rn.22158	NM_031606	Pten	Phosphatase and tensin homolog
F04	Rn.2863	NM_001008384	Rac2	Ras-related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2)
F05	Rn.9796	NM_019339	Rgs12	Regulator of G-protein signaling 12
F06	Rn.11201	NM_017325	Runx1	Runt-related transcription factor 1
F07	Rn.214214	NM_053470	Runx2	Runt-related transcription factor 2
F08	Rn.205217	NM_130425	Runx3	Runt-related transcription factor 3
F09	Rn.102416	NM_001100700	Sfrp2	Secreted frizzled-related protein 2
F10	Rn.10788	NM_053544	Sfrp4	Secreted frizzled-related protein 4
F11	Rn.40184	NM_001107591	Sfrp5	Secreted frizzled-related protein 5
F12	Rn.138818	NM_053517	Shc1	SHC (Src homology 2 domain containing) transforming protein 1
G01	Rn.44429	NM_012807	Smo	Smoothened homolog (Drosophila)
G02	Rn.82754	NM_145879	Socs1	Suppressor of cytokine signaling 1
G03	Rn.212982	NM_001005892	Spi1	Spleen focus forming virus (SFFV) proviral integration oncogene spi1
G04	Rn.33229	NM_032612	Stat1	Signal transducer and activator of transcription 1
G05	Rn.10247	NM_012747	Stat3	Signal transducer and activator of transcription 3
G06	Rn.154399	NM_017064	Stat5a	Signal transducer and activator of transcription 5A
G07	Rn.54486	NM_022380	Stat5b	Signal transducer and activator of transcription 5B
G08	Rn.9434	NM_001107958	Tal1	T-cell acute lymphocytic leukemia 1
G09	Rn.113022	NM_001109166	Tlx1	T-cell leukemia, homeobox 1
G10	Rn.91533	XM_573065	Tlx3	T-cell leukemia, homeobox 3
G11	Rn.54443	NM_030989	Tp53	Tumor protein p53
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 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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