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

Human Leukemia

Cat. no. 330231 PAHS-137ZA

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 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	BTG3	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	IL1R1	IL4	IL6	IL8	JAK2	JUN	JUNB
E	LMO1	LMO2	LYL1	MCL1	MEIS1	MERTK	MLH1	MN1	MTOR	NFKB1	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	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.89499	NM_000698	ALOX5	Arachidonate 5-lipoxygenase
A04	Hs.728891	NM_001160	APAF1	Apoptotic peptidase activating factor 1
A05	Hs.533446	NM_024812	BAALC	Brain and acute leukemia, cytoplasmic
A06	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A07	Hs.517461	NM_004327	BCR	Breakpoint cluster region
A08	Hs.598475	NM_001203	BMPR1B	Bone morphogenetic protein receptor, type IB
A09	Hs.473420	NM_006806	BTG3	BTG family, member 3
A10	Hs.370510	NM_014333	CADM1	Cell adhesion molecule 1
A11	Hs.514107	NM_002983	CCL3	Chemokine (C-C motif) ligand 3
A12	Hs.374990	NM_001773	CD34	CD34 molecule
B01	Hs.369574	NM_006449	CDC42EP3	CDC42 effector protein (Rho GTPase binding) 3
B02	Hs.461086	NM_004360	CDH1	Cadherin 1, type 1, E-cadherin (epithelial)
B03	Hs.654386	NM_001257	CDH13	Cadherin 13, H-cadherin (heart)
B04	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B05	Hs.238990	NM_004064	CDKN1B	Cyclin-dependent kinase inhibitor 1B (p27, Kip1)
B06	Hs.106070	NM_000076	CDKN1C	Cyclin-dependent kinase inhibitor 1C (p57, Kip2)
B07	Hs.72901	NM_004936	CDKN2B	Cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)
B08	Hs.517106	NM_005194	CEBPB	CCAAT/enhancer binding protein (C/EBP), beta
B09	Hs.2233	NM_000759	CSF3	Colony stimulating factor 3 (granulocyte)
B10	Hs.591346	NM_001901	CTGF	Connective tissue growth factor
B11	Hs.476018	NM_001904	CTNNB1	Catenin (cadherin-associated protein), beta 1, 88kDa
B12	Hs.632586	NM_001565	CXCL10	Chemokine (C-X-C motif) ligand 10
C01	Hs.380277	NM_004938	DAPK1	Death-associated protein kinase 1
C02	Hs.292156	NM_015881	DKK3	Dickkopf homolog 3 (Xenopus laevis)
C03	Hs.134296	NM_006094	DLC1	Deleted in liver cancer 1
C04	Hs.534313	NM_004430	EGR3	Early growth response 3
C05	Hs.1422	NM_005248	FGR	Gardner-Rasheed feline sarcoma viral (v-fgr) oncogene homolog
C06	Hs.220950	NM_001455	FOXO3	Forkhead box O3
C07	Hs.20575	NM_174942	GAS2L3	Growth arrest-specific 2 like 3
C08	Hs.765	NM_002049	GATA1	GATA binding protein 1 (globin transcription factor 1)
C09	Hs.444356	NM_002086	GRB2	Growth factor receptor-bound protein 2
C10	Hs.655210	NM_002110	HCK	Hemopoietic cell kinase
C11	Hs.88556	NM_004964	HDAC1	Histone deacetylase 1
C12	Hs.72956	NM_006497	HIC1	Hypermethylated in cancer 1
D01	Hs.525600	NM_001017963	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
D02	Hs.37026	NM_024013	IFNA1	Interferon, alpha 1
D03	Hs.444388	NM_183232	IKZF3	IKAROS family zinc finger 3 (Aiolos)
D04	Hs.193717	NM_000572	IL10	Interleukin 10
D05	Hs.673	NM_000882	IL12A	Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35)
D06	Hs.701982	NM_000877	IL1R1	Interleukin 1 receptor, type I
D07	Hs.73917	NM_000589	IL4	Interleukin 4
D08	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)

Position	UniGene	GenBank	Symbol	Description
D09	Hs.624	NM_000584	IL8	Interleukin 8
D10	Hs.656213	NM_004972	JAK2	Janus kinase 2
D11	Hs.714791	NM_002228	JUN	Jun proto-oncogene
D12	Hs.25292	NM_002229	JUNB	Jun B proto-oncogene
E01	Hs.654426	NM_002315	LMO1	LIM domain only 1 (rhombotin 1)
E02	Hs.34560	NM_005574	LMO2	LIM domain only 2 (rhombotin-like 1)
E03	Hs.46446	NM_005583	LYL1	Lymphoblastic leukemia derived sequence 1
E04	Hs.632486	NM_021960	MCL1	Myeloid cell leukemia sequence 1 (BCL2-related)
E05	Hs.526754	NM_002398	MEIS1	Meis homeobox 1
E06	Hs.306178	NM_006343	MERTK	C-mer proto-oncogene tyrosine kinase
E07	Hs.195364	NM_000249	MLH1	MutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)
E08	Hs.268515	NM_002430	MN1	Meningioma (disrupted in balanced translocation) 1
E09	Hs.338207	NM_004958	MTOR	Mechanistic target of rapamycin (serine/threonine kinase)
E10	Hs.654408	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E11	Hs.557550	NM_199185	NPM1	Nucleophosmin (nucleolar phosphoprotein B23, numatrin)
E12	Hs.279522	NM_006981	NR4A3	Nuclear receptor subfamily 4, group A, member 3
F01	Hs.526464	NM_033238	PML	Promyelocytic leukemia
F02	Hs.460355	NM_002738	PRKCB	Protein kinase C, beta
F03	Hs.500466	NM_000314	PTEN	Phosphatase and tensin homolog
F04	Hs.517601	NM_002872	RAC2	Ras-related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2)
F05	Hs.527061	NM_002926	RGS12	Regulator of G-protein signaling 12
F06	Hs.149261	NM_001754	RUNX1	Runt-related transcription factor 1
F07	Hs.535845	NM_004348	RUNX2	Runt-related transcription factor 2
F08	Hs.170019	NM_004350	RUNX3	Runt-related transcription factor 3
F09	Hs.481022	NM_003013	SFRP2	Secreted frizzled-related protein 2
F10	Hs.658169	NM_003014	SFRP4	Secreted frizzled-related protein 4
F11	Hs.279565	NM_003015	SFRP5	Secreted frizzled-related protein 5
F12	Hs.433795	NM_003029	SHC1	SHC (Src homology 2 domain containing) transforming protein 1
G01	Hs.437846	NM_005631	SMO	Smoothened, frizzled family receptor
G02	Hs.50640	NM_003745	SOCS1	Suppressor of cytokine signaling 1
G03	Hs.502511	NM_003120	SPI1	Spleen focus forming virus (SFFV) proviral integration oncogene spi1
G04	Hs.642990	NM_007315	STAT1	Signal transducer and activator of transcription 1, 91kDa
G05	Hs.463059	NM_003150	STAT3	Signal transducer and activator of transcription 3 (acute-phase response factor)
G06	Hs.437058	NM_003152	STAT5A	Signal transducer and activator of transcription 5A
G07	Hs.595276	NM_012448	STAT5B	Signal transducer and activator of transcription 5B
G08	Hs.705618	NM_003189	TAL1	T-cell acute lymphocytic leukemia 1
G09	Hs.89583	NM_005521	TLX1	T-cell leukemia homeobox 1
G10	Hs.249125	NM_021025	TLX3	T-cell leukemia homeobox 3
G11	Hs.654481	NM_000546	TP53	Tumor protein p53
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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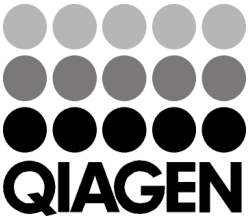

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