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

Human IL6/STAT3 Signaling Pathway Plus

Cat. no. 330231 PAHS-160YA

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™

QIAGEN®

Sample & Assay Technologies

Description

The Human IL6/STAT3 Signaling Pathway Plus RT² Profiler PCR Array profiles the expression of 84 key genes involved in the activation and downstream effects of IL6/STAT3 signaling. It also determines whether IL6/STAT3 pathway activity is activated, repressed, or unchanged in experimental samples. Interleukin-6, an inflammatory cytokine, is one of many STAT3 activators. IL6 signals through its receptor, IL6R/IL6ST (GP130), activating Janus kinases, which in turn phosphorylate and activate STATs (signal transducer and activator of transcription), including STAT3. The IL6/STAT3 pathway activates inflammatory responses during biological processes such as infection and oncogenesis. STAT3 target genes overlap significantly with targets from the NF?B signaling pathway, another key pathway promoting the inflammatory response. STAT3 signaling is often up-regulated during carcinogenesis, especially during the interaction of tumor cells and immune cells within the tumor microenvironment. This up-regulation involves biological processes such as differentiation and proliferation as well as angiogenesis and apoptosis. This array includes activators, downstream mediators, and target genes for IL6/STAT3 signaling, including cytokines and genes involved in NF?B signaling. The results of this array can yield new insights into the effects of IL6/STAT3 dysregulation. The array also includes 16 experimentally derived Signature Biomarker Genes which, along with classification algorithms, are used to generate the activity score. A set of controls present on each array enables data analysis using the ΔΔCT method of relative quantification, assessment of reverse transcription performance, genomic DNA contamination, and PCR performance. Using real-time PCR, research studies can easily and reliably determine IL6/STAT3 signaling pathway activity and analyze the expression of a focused panel of genes involved in IL6/STAT3 signaling 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	AKT1	BAX	BCL2	CCL2	CCL3	CCL4	CCL5	CD4	CD40	CD40LG	CDKN1A	CSF1
B	CSF2	CSF3	CSF3R	CXCL10	EGFR	FAS	FASLG	HGF	IL10	IL11	IL13	IL15
C	IL17A	IL18	IL18R1	IL1A	IL1B	IL1R1	IL2	IL21	IL22	IL23A	IL2RA	IL3
D	IL4	IL5	IL6	IL6R	IL8	JAK2	JAK3	LIF	LIFR	LTA	MAP2K1	MAPK1
E	MAPK14	MAPK3	MAPK8	MET	MTOR	MYC	NFKB1	NFKBIA	OSM	PIAS3	PIM1	RELA
F	SOCS1	SRC	TLR4	TNF	TNFRSF10B	TNFRSF1B	TNFSF10	TYK2	BCL3	CASP4	CEBPD	GLRX
G	IFITM2	IL6ST	JUNB	NRP1	PHF21A	PROS1	PVRL2	SOCS3	STAT3	TGM2	TNFRSF1A	TUBB2A
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.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
A02	Hs.624291	NM_004324	BAX	BCL2-associated X protein
A03	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A04	Hs.303649	NM_002982	CCL2	Chemokine (C-C motif) ligand 2
A05	Hs.514107	NM_002983	CCL3	Chemokine (C-C motif) ligand 3
A06	Hs.75703	NM_002984	CCL4	Chemokine (C-C motif) ligand 4
A07	Hs.514821	NM_002985	CCL5	Chemokine (C-C motif) ligand 5
A08	Hs.631659	NM_000616	CD4	CD4 molecule
A09	Hs.472860	NM_001250	CD40	CD40 molecule, TNF receptor superfamily member 5
A10	Hs.592244	NM_000074	CD40LG	CD40 ligand
A11	Hs.732576	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
A12	Hs.173894	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)
B01	Hs.1349	NM_000758	CSF2	Colony stimulating factor 2 (granulocyte-macrophage)
B02	Hs.2233	NM_000759	CSF3	Colony stimulating factor 3 (granulocyte)
B03	Hs.524517	NM_000760	CSF3R	Colony stimulating factor 3 receptor (granulocyte)
B04	Hs.632586	NM_001565	CXCL10	Chemokine (C-X-C motif) ligand 10
B05	Hs.605083	NM_005228	EGFR	Epidermal growth factor receptor
B06	Hs.244139	NM_000043	FAS	Fas (TNF receptor superfamily, member 6)
B07	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily, member 6)
B08	Hs.396530	NM_000601	HGF	Hepatocyte growth factor (hepapoietin A; scatter factor)
B09	Hs.193717	NM_000572	IL10	Interleukin 10
B10	Hs.467304	NM_000641	IL11	Interleukin 11
B11	Hs.845	NM_002188	IL13	Interleukin 13
B12	Hs.602618	NM_000585	IL15	Interleukin 15
C01	Hs.41724	NM_002190	IL17A	Interleukin 17A
C02	Hs.83077	NM_001562	IL18	Interleukin 18 (interferon-gamma-inducing factor)
C03	Hs.469521	NM_003855	IL18R1	Interleukin 18 receptor 1
C04	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
C05	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
C06	Hs.701982	NM_000877	IL1R1	Interleukin 1 receptor, type I
C07	Hs.89679	NM_000586	IL2	Interleukin 2
C08	Hs.567559	NM_021803	IL21	Interleukin 21
C09	Hs.287369	NM_020525	IL22	Interleukin 22
C10	Hs.591803	NM_016584	IL23A	Interleukin 23, alpha subunit p19
C11	Hs.231367	NM_000417	IL2RA	Interleukin 2 receptor, alpha
C12	Hs.694	NM_000588	IL3	Interleukin 3 (colony-stimulating factor, multiple)
D01	Hs.73917	NM_000589	IL4	Interleukin 4
D02	Hs.2247	NM_000879	IL5	Interleukin 5 (colony-stimulating factor, eosinophil)
D03	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
D04	Hs.135087	NM_000565	IL6R	Interleukin 6 receptor
D05	Hs.624	NM_000584	IL8	Interleukin 8
D06	Hs.656213	NM_004972	JAK2	Janus kinase 2
D07	Hs.515247	NM_000215	JAK3	Janus kinase 3
D08	Hs.2250	NM_002309	LIF	Leukemia inhibitory factor (cholinergic differentiation factor)
D09	Hs.133421	NM_002310	LIFR	Leukemia inhibitory factor receptor alpha

Position	UniGene	GenBank	Symbol	Description
D10	Hs.36	NM_000595	LTA	Lymphotoxin alpha (TNF superfamily, member 1)
D11	Hs.145442	NM_002755	MAP2K1	Mitogen-activated protein kinase kinase 1
D12	Hs.431850	NM_002745	MAPK1	Mitogen-activated protein kinase 1
E01	Hs.485233	NM_001315	MAPK14	Mitogen-activated protein kinase 14
E02	Hs.861	NM_002746	MAPK3	Mitogen-activated protein kinase 3
E03	Hs.522924	NM_002750	MAPK8	Mitogen-activated protein kinase 8
E04	Hs.132966	NM_000245	MET	Met proto-oncogene (hepatocyte growth factor receptor)
E05	Hs.338207	NM_004958	MTOR	Mechanistic target of rapamycin (serine/threonine kinase)
E06	Hs.202453	NM_002467	MYC	V-myc myelocytomatosis viral oncogene homolog (avian)
E07	Hs.618430	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E08	Hs.81328	NM_020529	NFKBIA	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
E09	Hs.248156	NM_020530	OSM	Oncostatin M
E10	Hs.435761	NM_006099	PIAS3	Protein inhibitor of activated STAT, 3
E11	Hs.81170	NM_002648	PIM1	Pim-1 oncogene
E12	Hs.502875	NM_021975	RELA	V-rel reticuloendotheliosis viral oncogene homolog A (avian)
F01	Hs.50640	NM_003745	SOCS1	Suppressor of cytokine signaling 1
F02	Hs.195659	NM_005417	SRC	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
F03	Hs.174312	NM_138554	TLR4	Toll-like receptor 4
F04	Hs.241570	NM_000594	TNF	Tumor necrosis factor
F05	Hs.521456	NM_003842	TNFRSF10B	Tumor necrosis factor receptor superfamily, member 10b
F06	Hs.256278	NM_001066	TNFRSF1B	Tumor necrosis factor receptor superfamily, member 1B
F07	Hs.478275	NM_003810	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10
F08	Hs.75516	NM_003331	TYK2	Tyrosine kinase 2
F09	Hs.31210	NM_005178	BCL3	B-cell CLL/lymphoma 3
F10	Hs.138378	NM_001225	CASP4	Caspase 4, apoptosis-related cysteine peptidase
F11	Hs.440829	NM_005195	CEBPD	CCAAT/enhancer binding protein (C/EBP), delta
F12	Hs.28988	NM_002064	GLRX	Glutaredoxin (thioltransferase)
G01	Hs.709321	NM_006435	IFITM2	Interferon induced transmembrane protein 2 (1-8D)
G02	Hs.706627	NM_002184	IL6ST	Interleukin 6 signal transducer (gp130, oncostatin M receptor)
G03	Hs.25292	NM_002229	JUNB	Jun B proto-oncogene
G04	Hs.653996	NM_003873	NRP1	Neuropilin 1
G05	Hs.502458	NM_016621	PHF21A	PHD finger protein 21A
G06	Hs.64016	NM_000313	PROS1	Protein S (alpha)
G07	Hs.655455	NM_002856	PVRL2	Poliovirus receptor-related 2 (herpesvirus entry mediator B)
G08	Hs.703620	NM_003955	SOCS3	Suppressor of cytokine signaling 3
G09	Hs.463059	NM_003150	STAT3	Signal transducer and activator of transcription 3 (acute-phase response factor)
G10	Hs.517033	NM_004613	TGM2	Transglutaminase 2 (C polypeptide, protein-glutamine-gamma-glutamyltransferase)
G11	Hs.279594	NM_001065	TNFRSF1A	Tumor necrosis factor receptor superfamily, member 1A
G12	Hs.654543	NM_001069	TUBB2A	Tubulin, beta 2A
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.544577	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

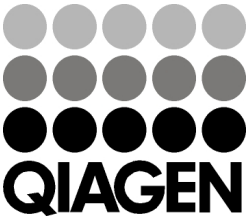
* Larger kit sizes available; please inquire.

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.

www.qiagen.com

Australia ▪ 1-800-243-800
Austria ▪ 0800/281010
Belgium ▪ 0800-79612
Brazil ▪ 0800-557779
Canada ▪ 800-572-9613
China ▪ 8621-3865-3865
Denmark ▪ 80-885945
Finland ▪ 0800-914416
France ▪ 01-60-920-930
Germany ▪ 02103-29-12000
Hong Kong ▪ 800 933 965
Ireland ▪ 1800 555 049
Italy ▪ 800-787980
Japan ▪ 03-6890-7300
Korea (South) ▪ 080-000-7145
Luxembourg ▪ 8002 2076
Mexico ▪ 01-800-7742-436
The Netherlands ▪ 0800 0229592
Norway ▪ 800-18859
Singapore ▪ 1800-742-4368
Spain ▪ 91-630-7050
Sweden ▪ 020-790282
Switzerland ▪ 055-254-22-11
UK ▪ 01293-422-911
USA ▪ 800-426-8157



Sample & Assay Technologies