

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

Rat IL6/STAT3 Signaling Pathway

Cat. no. 330231 PARN-160ZA

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 IL6/STAT3 Signaling Pathway RT² Profiler PCR Array profiles the expression of 84 key genes involved in the activation and downstream effects of IL6/STAT3 signaling. 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 NFκB 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 NFκB signaling. The results of this array can yield new insights into the effects of IL6/STAT3 dysregulation. Using real-time PCR, research studies can easily and reliably 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	Ccl12	Ccl3	Ccl4	Ccl5	Cd4	Cd40	Cd40lg	Cd80	Cdc25a
B	Cdkn1a	Cebpd	Csf1	Csf2	Csf3	Csf3r	Cxcl10	Cxcl12	Cxcl3	Cxcr4	Egfr	Fas
C	Faslg	Hgf	Ikbbk	Il10	Il11	Il12a	Il13	Il15	Il18	Il18r1	Il1a	Il1b
D	Il1r1	Il2	Il20	Il21	Il22	Il23a	Il24	Il2ra	Il3	Il4	Il5	Il6
E	Il6st	Il7	Il9	Jak2	Jak3	Lif	Lifr	Lta	Map2k1	Mapk1	Mapk14	Mapk3
F	Mapk8	Met	Mtor	Myc	Nfkb1	Nfkbia	Osm	Osmr	Pias3	Pim1	Rac1	Rela
G	Socs1	Socs3	Src	Stat3	Tlr4	Tnf	Tnfrsf10b	Tnfrsf1a	Tnfrsf1b	Tnfrsf10	Tnfrsf11	Tyk2
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.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A02	Rn.10668	NM_017059	Bax	Bcl2-associated X protein
A03	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
A04	Rn.137780	NM_001105822	Ccl12	Chemokine (C-C motif) ligand 12
A05	Rn.10139	NM_013025	Ccl3	Chemokine (C-C motif) ligand 3
A06	Rn.37880	NM_053858	Ccl4	Chemokine (C-C motif) ligand 4
A07	Rn.8019	NM_031116	Ccl5	Chemokine (C-C motif) ligand 5
A08	Rn.10748	NM_012705	Cd4	Cd4 molecule
A09	Rn.25180	NM_134360	Cd40	CD40 molecule, TNF receptor superfamily member 5
A10	Rn.44218	NM_053353	Cd40lg	CD40 ligand
A11	Rn.10138	NM_012926	Cd80	Cd80 molecule
A12	Rn.11390	NM_133571	Cdc25a	Cell division cycle 25 homolog A (S. pombe)
B01	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B02	Rn.202620	NM_013154	Cebpd	CCAAT/enhancer binding protein (C/EBP), delta
B03	Rn.83632	NM_023981	Csf1	Colony stimulating factor 1 (macrophage)
B04	Rn.44285	XM_340799	Csf2	Colony stimulating factor 2 (granulocyte-macrophage)
B05	Rn.53973	NM_017104	Csf3	Colony stimulating factor 3 (granulocyte)
B06	Rn.134664	NM_001106685	Csf3r	Colony stimulating factor 3 receptor (granulocyte)
B07	Rn.10584	NM_139089	Cxcl10	Chemokine (C-X-C motif) ligand 10
B08	Rn.54439	NM_022177	Cxcl12	Chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1)
B09	Rn.10525	NM_138522	Cxcl3	Chemokine (C-X-C motif) ligand 3
B10	Rn.44431	NM_022205	Cxcr4	Chemokine (C-X-C motif) receptor 4
B11	Rn.37227	NM_031507	Egfr	Epidermal growth factor receptor
B12	Rn.162521	NM_139194	Fas	Fas (TNF receptor superfamily, member 6)
C01	Rn.9725	NM_012908	Faslg	Fas ligand (TNF superfamily, member 6)
C02	Rn.10468	NM_017017	Hgf	Hepatocyte growth factor
C03	Rn.19222	NM_053355	Ikbbk	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
C04	Rn.9868	NM_012854	Il10	Interleukin 10
C05	Rn.198483	NM_133519	Il11	Interleukin 11
C06	Rn.207199	NM_053390	Il12a	Interleukin 12a
C07	Rn.9921	NM_053828	Il13	Interleukin 13
C08	Rn.2490	NM_013129	Il15	Interleukin 15
C09	Rn.11118	NM_019165	Il18	Interleukin 18
C10	Rn.149181	NM_001106905	Il18r1	Interleukin 18 receptor 1
C11	Rn.12300	NM_017019	Il1a	Interleukin 1 alpha
C12	Rn.9869	NM_031512	Il1b	Interleukin 1 beta
D01	Rn.9758	NM_013123	Il1r1	Interleukin 1 receptor, type I
D02	Rn.9871	NM_053836	Il2	Interleukin 2
D03	Rn.222008	NM_001143881	Il20	Interleukin 20
D04	Rn.214949	NM_001108943	Il21	Interleukin 21
D05	Rn.195879	XM_576228	Il22	Interleukin 22
D06	Rn.81073	NM_130410	Il23a	Interleukin 23, alpha subunit p19
D07	Rn.48710	NM_133311	Il24	Interleukin 24
D08	Rn.9872	NM_013163	Il2ra	Interleukin 2 receptor, alpha
D09	Rn.10652	NM_031513	Il3	Interleukin 3

Position	UniGene	GenBank	Symbol	Description
D10	Rn.108255	NM_201270	Il4	Interleukin 4
D11	Rn.44227	NM_021834	Il5	Interleukin 5
D12	Rn.9873	NM_012589	Il6	Interleukin 6
E01	Rn.12138	NM_001008725	Il6st	Interleukin 6 signal transducer
E02	Rn.10793	NM_013110	Il7	Interleukin 7
E03	Rn.92374	NM_001105747	Il9	Interleukin 9
E04	Rn.18909	NM_031514	Jak2	Janus kinase 2
E05	Rn.11159	NM_012855	Jak3	Janus kinase 3
E06	Rn.44379	NM_022196	Lif	Leukemia inhibitory factor
E07	Rn.14529	NM_031048	Lifr	Leukemia inhibitory factor receptor alpha
E08	Rn.160577	NM_080769	Lta	Lymphotoxin alpha (TNF superfamily, member 1)
E09	Rn.5850	NM_031643	Map2k1	Mitogen activated protein kinase kinase 1
E10	Rn.34914	NM_053842	Mapk1	Mitogen activated protein kinase 1
E11	Rn.88085	NM_031020	Mapk14	Mitogen activated protein kinase 14
E12	Rn.2592	NM_017347	Mapk3	Mitogen activated protein kinase 3
F01	Rn.4090	XM_341399	Mapk8	Mitogen-activated protein kinase 8
F02	Rn.10617	NM_031517	Met	Met proto-oncogene
F03	Rn.11008	NM_019906	Mtor	Mechanistic target of rapamycin (serine/threonine kinase)
F04	Rn.12072	NM_012603	Myc	Myelocytomatosis oncogene
F05	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
F06	Rn.12550	NM_001105720	Nfkbia	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
F07	Rn.127158	NM_001006961	Osm	Oncostatin M
F08	Rn.92110	NM_001005384	Osmr	Oncostatin M receptor
F09	Rn.14548	NM_031784	Pias3	Protein inhibitor of activated STAT, 3
F10	Rn.34888	NM_017034	Pim1	Pim-1 oncogene
F11	Rn.29157	NM_134366	Rac1	Ras-related C3 botulinum toxin substrate 1
F12	Rn.19480	NM_199267	Rela	V-rel reticuloendotheliosis viral oncogene homolog A (avian)
G01	Rn.82754	NM_145879	Socs1	Suppressor of cytokine signaling 1
G02	Rn.127801	NM_053565	Socs3	Suppressor of cytokine signaling 3
G03	Rn.112600	NM_031977	Src	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G04	Rn.10247	NM_012747	Stat3	Signal transducer and activator of transcription 3
G05	Rn.14534	NM_019178	Tlr4	Toll-like receptor 4
G06	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G07	Rn.105558	NM_001108873	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
G08	Rn.11119	NM_013091	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
G09	Rn.83633	NM_130426	Tnfrsf1b	Tumor necrosis factor receptor superfamily, member 1b
G10	Rn.83627	NM_145681	Tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10
G11	Rn.64517	NM_057149	Tnfsf11	Tumor necrosis factor (ligand) superfamily, member 11
G12	Rn.140313	XM_233741	Tyk2	Tyrosine kinase 2
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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