

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

Rat Cytokines & Chemokines

Cat. no. 330231 PARN-150ZA

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 Cytokines & Chemokines RT² Profiler PCR Array profiles the expression of 84 key secreted proteins central to the immune response and other functions. Cytokines, small signaling proteins secreted primarily by immune cells, activate inter- and intracellular signaling during immune responses. Historically, cytokines were functionally separated into 2 families: lymphokines/interleukins and chemokines. All cytokines released by immune cells were called lymphokines/interleukins, whereas chemotactic cytokines were called chemokines. However, these family descriptions are not longer accurate because some growth factors and hormones also exhibit cellular effects very similar to cytokine family members. In addition to immune cells, many different cell types express cytokines to stimulate immune response, inflammation, and other processes. The ultimate effect of a cytokine release depends on the activated cell type expressing the specific cytokine receptor. This array includes both families of common cytokines as well as growth factors and hormones with cytokine-like properties. The results of this array should augment understanding of immune response in a variety of cell types. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of key cytokines and chemokines 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	Adipoq	Bmp2	Bmp4	Bmp6	Bmp7	C5	Cd1	Cd11	Cd12	Cd17	Cd19	Cd2
B	Cd20	Cd21	Cd22	Ccl24	Ccl3	Ccl4	Cd5	Cd7	Cd40lg	Cd70	Cnfr	Csf1
C	Csf2	Csf3	Cf1	Cx3cl1	Cxcl1	Cxcl10	Cxcl11	Cxcl12	Cxcl13	Cxcl16	Cxcl3	Cxcl9
D	Faslg	Gdf15	Gpi	Ifna2	Ifng	Il10	Il11	Il12a	Il12b	Il13	Il15	Il16
E	Il17a	Il17f	Il18	Il1a	Il1b	Il1m	Il2	Il21	Il22	Il23a	Il24	Il27
F	Il3	Il4	Il5	Il6	Il7	Il9	Lif	Lta	Ltb	Mif	Mtn	Nodal
G	Osm	Pf4	Ppibp	Spp1	Tgfb2	Thpo	Tnf	Tnfrsf11b	Tnfrsf10	Tnfrsf11	Vegfa	Xcl1
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.24299	NM_144744	Adipoq	Adiponectin, C1Q and collagen domain containing
A02	Rn.90931	NM_017178	Bmp2	Bone morphogenetic protein 2
A03	Rn.10318	NM_012827	Bmp4	Bone morphogenetic protein 4
A04	Rn.40476	NM_013107	Bmp6	Bone morphogenetic protein 6
A05	Rn.18030	XM_342591	Bmp7	Bone morphogenetic protein 7
A06	Rn.21259	XM_342421	C5	Complement component 5
A07	Rn.157282	XM_001067590	Cd1	Chemokine (C-C motif) ligand 1
A08	Rn.10632	NM_019205	Cd11	Chemokine (C-C motif) ligand 11
A09	Rn.137780	NM_001105822	Cd12	Chemokine (C-C motif) ligand 12
A10	Rn.46679	NM_057151	Cd17	Chemokine (C-C motif) ligand 17
A11	Rn.12445	NM_001108661	Cd19	Chemokine (C-C motif) ligand 19
A12	Rn.4772	NM_031530	Cd2	Chemokine (C-C motif) ligand 2
B01	Rn.10722	NM_019233	Cd20	Chemokine (C-C motif) ligand 20
B02	Rn.39658	NM_001008513	Cd21	Chemokine (C-C motif) ligand 21
B03	Rn.48727	NM_057203	Cd22	Chemokine (C-C motif) ligand 22
B04	Rn.138822	NM_001013045	Cd24	Chemokine (C-C motif) ligand 24
B05	Rn.10139	NM_013025	Cd3	Chemokine (C-C motif) ligand 3
B06	Rn.37880	NM_053858	Ccl4	Chemokine (C-C motif) ligand 4
B07	Rn.8019	NM_031116	Cd5	Chemokine (C-C motif) ligand 5
B08	Rn.26815	NM_001007612	Cd7	Chemokine (C-C motif) ligand 7
B09	Rn.44218	NM_053353	Cd40lg	CD40 ligand
B10	Rn.103013	NM_001106878	Cd70	Cd70 molecule
B11	Rn.6067	NM_013166	Cnfr	Ciliary neurotrophic factor
B12	Rn.83632	NM_023981	Csf1	Colony stimulating factor 1 (macrophage)
C01	Rn.44285	XM_340799	Csf2	Colony stimulating factor 2 (granulocyte-macrophage)
C02	Rn.53973	NM_017104	Csf3	Colony stimulating factor 3 (granulocyte)
C03	Rn.10253	NM_017129	Cf1	Cardiotrophin 1
C04	Rn.107266	NM_134455	Cx3cl1	Chemokine (C-X3-C motif) ligand 1
C05	Rn.10907	NM_030845	Cxcl1	Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
C06	Rn.10584	NM_139089	Cxcl10	Chemokine (C-X-C motif) ligand 10
C07	Rn.13664	NM_182952	Cxcl11	Chemokine (C-X-C motif) ligand 11
C08	Rn.54439	NM_022177	Cxcl12	Chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1)
C09	Rn.6917	NM_001017496	Cxcl13	Chemokine (C-X-C motif) ligand 13
C10	Rn.7070	NM_001017478	Cxcl16	Chemokine (C-X-C motif) ligand 16
C11	Rn.10525	NM_138522	Cxcl3	Chemokine (C-X-C motif) ligand 3
C12	Rn.7391	NM_145672	Cxcl9	Chemokine (C-X-C motif) ligand 9
D01	Rn.9725	NM_012908	Faslg	Fas ligand (TNF superfamily, member 6)
D02	Rn.44228	NM_019216	Gdf15	Growth differentiation factor 15
D03	Rn.84435	NM_207592	Gpi	Glucose phosphate isomerase
D04	N/A	XM_233152	Ifna2	Interferon alpha family, gene 2
D05	Rn.10795	NM_138880	Ifng	Interferon gamma
D06	Rn.9868	NM_012854	Il10	Interleukin 10
D07	Rn.198483	NM_133519	Il11	Interleukin 11
D08	Rn.207199	NM_053390	Il12a	Interleukin 12a
D09	Rn.48686	NM_022611	Il12b	Interleukin 12b

Position	UniGene	GenBank	Symbol	Description
D10	Rn.9921	NM_053828	Il13	Interleukin 13
D11	Rn.2490	NM_013129	Il15	Interleukin 15
D12	Rn.104665	NM_001105749	Il16	Interleukin 16
E01	Rn.218513	NM_001106897	Il17a	Interleukin 17A
E02	Rn.34022	NM_001015011	Il17f	Interleukin 17F
E03	Rn.11118	NM_019165	Il18	Interleukin 18
E04	Rn.12300	NM_017019	Il1a	Interleukin 1 alpha
E05	Rn.9869	NM_031512	Il1b	Interleukin 1 beta
E06	Rn.162640	NM_022194	Il1rn	Interleukin 1 receptor antagonist
E07	Rn.9871	NM_053836	Il2	Interleukin 2
E08	Rn.214949	NM_001108943	Il21	Interleukin 21
E09	Rn.195879	XM_576228	Il22	Interleukin 22
E10	Rn.81073	NM_130410	Il23a	Interleukin 23, alpha subunit p19
E11	Rn.48710	NM_133311	Il24	Interleukin 24
E12	N/A	XM_344962	Il27	Interleukin 27
F01	Rn.10652	NM_031513	Il3	Interleukin 3
F02	Rn.108255	NM_201270	Il4	Interleukin 4
F03	Rn.44227	NM_021834	Il5	Interleukin 5
F04	Rn.9873	NM_012589	Il6	Interleukin 6
F05	Rn.10793	NM_013110	Il7	Interleukin 7
F06	Rn.92374	NM_001105747	Il9	Interleukin 9
F07	Rn.44379	NM_022196	Lif	Leukemia inhibitory factor
F08	Rn.160577	NM_080769	Lta	Lymphotoxin alpha (TNF superfamily, member 1)
F09	Rn.203016	NM_212507	Ltb	Lymphotoxin beta (TNF superfamily, member 3)
F10	Rn.2661	NM_031051	Mif	Macrophage migration inhibitory factor
F11	Rn.44460	NM_019151	Mstn	Myostatin
F12	Rn.218528	NM_001106394	Nodal	Nodal homolog (mouse)
G01	Rn.127158	NM_001006961	Osm	Oncostatin M
G02	Rn.6800	NM_001007729	Pf4	Platelet factor 4
G03	Rn.67082	NM_153721	Ppbp	Pro-platelet basic protein (chemokine (C-X-C motif) ligand 7)
G04	Rn.8871	NM_012881	Spp1	Secreted phosphoprotein 1
G05	Rn.24539	NM_031131	Tgfb2	Transforming growth factor, beta 2
G06	Rn.10576	NM_031133	Thpo	Thrombopoietin
G07	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G08	Rn.202973	NM_012870	Tnfrsf11b	Tumor necrosis factor receptor superfamily, member 11b
G09	Rn.83627	NM_145681	Tnfsf10	Tumor necrosis factor (ligand) superfamily, member 10
G10	Rn.64517	NM_057149	Tnfsf11	Tumor necrosis factor (ligand) superfamily, member 11
G11	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G12	Rn.90962	NM_134361	Xcl1	Chemokine (C motif) ligand 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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