

# RT<sup>2</sup> Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

## Human Cytokines & Chemokines

Cat. no. 330231 PAHS-150ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> 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 <sup>2</sup> Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT <sup>2</sup> Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT <sup>2</sup> Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT <sup>2</sup> Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT <sup>2</sup> Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT <sup>2</sup> Profiler PCR Array, Format H	Fluidigm® BioMark™



Sample & Assay Technologies

## Description

The Human Cytokines & Chemokines RT<sup>2</sup> 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 *RT<sup>2</sup> Profiler PCR Array Handbook*.

## Shipping and storage

RT<sup>2</sup> 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. RT<sup>2</sup> 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 RT<sup>2</sup> 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 *RT<sup>2</sup> Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
<b>A</b>	ADIPOQ	BMP2	BMP4	BMP6	BMP7	C5	CCL1	CCL11	CCL13	CCL17	CCL18	CCL19
<b>B</b>	CCL2	CCL20	CCL21	CCL22	CCL24	CCL3	CCL5	CCL7	CCL8	CD40LG	CNTF	CSF1
<b>C</b>	CSF2	CSF3	CX3CL1	CXCL1	CXCL10	CXCL11	CXCL12	CXCL13	CXCL16	CXCL2	CXCL5	CXCL9
<b>D</b>	FASLG	GPI	IFNA2	IFNG	IL10	IL11	IL12A	IL12B	IL13	IL15	IL16	IL17A
<b>E</b>	IL17F	IL18	IL1A	IL1B	IL1RN	IL2	IL21	IL22	IL23A	IL24	IL27	IL3
<b>F</b>	IL4	IL5	IL6	IL7	IL8	IL9	LIF	LTA	LTB	MIF	MSTN	NODAL
<b>G</b>	OSM	PPBP	SPP1	TGFB2	THPO	TNF	TNFRSF11B	TNFSF10	TNFSF11	TNFSF13B	VEGFA	XCL1
<b>H</b>	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

## Gene table: RT<sup>2</sup> Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.80485	NM_004797	ADIPOQ	Adiponectin, C1Q and collagen domain containing
A02	Hs.73853	NM_001200	BMP2	Bone morphogenetic protein 2
A03	Hs.68879	NM_130851	BMP4	Bone morphogenetic protein 4
A04	Hs.285671	NM_001718	BMP6	Bone morphogenetic protein 6
A05	Hs.473163	NM_001719	BMP7	Bone morphogenetic protein 7
A06	Hs.494997	NM_001735	C5	Complement component 5
A07	Hs.72918	NM_002981	CCL1	Chemokine (C-C motif) ligand 1
A08	Hs.54460	NM_002986	CCL11	Chemokine (C-C motif) ligand 11
A09	Hs.414629	NM_005408	CCL13	Chemokine (C-C motif) ligand 13
A10	Hs.546294	NM_002987	CCL17	Chemokine (C-C motif) ligand 17
A11	Hs.143961	NM_002988	CCL18	Chemokine (C-C motif) ligand 18 (pulmonary and activation-regulated)
A12	Hs.50002	NM_006274	CCL19	Chemokine (C-C motif) ligand 19
B01	Hs.303649	NM_002982	CCL2	Chemokine (C-C motif) ligand 2
B02	Hs.75498	NM_004591	CCL20	Chemokine (C-C motif) ligand 20
B03	Hs.57907	NM_002989	CCL21	Chemokine (C-C motif) ligand 21
B04	Hs.534347	NM_002990	CCL22	Chemokine (C-C motif) ligand 22
B05	Hs.247838	NM_002991	CCL24	Chemokine (C-C motif) ligand 24
B06	Hs.514107	NM_002983	CCL3	Chemokine (C-C motif) ligand 3
B07	Hs.514821	NM_002985	CCL5	Chemokine (C-C motif) ligand 5
B08	Hs.251526	NM_006273	CCL7	Chemokine (C-C motif) ligand 7
B09	Hs.271387	NM_005623	CCL8	Chemokine (C-C motif) ligand 8
B10	Hs.592244	NM_000074	CD40LG	CD40 ligand
B11	Hs.715806	NM_000614	CNTF	Ciliary neurotrophic factor
B12	Hs.591402	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)
C01	Hs.1349	NM_000758	CSF2	Colony stimulating factor 2 (granulocyte-macrophage)
C02	Hs.2233	NM_000759	CSF3	Colony stimulating factor 3 (granulocyte)
C03	Hs.531668	NM_002996	CX3CL1	Chemokine (C-X3-C motif) ligand 1
C04	Hs.789	NM_001511	CXCL1	Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
C05	Hs.632586	NM_001565	CXCL10	Chemokine (C-X-C motif) ligand 10
C06	Hs.632592	NM_005409	CXCL11	Chemokine (C-X-C motif) ligand 11
C07	Hs.522891	NM_000609	CXCL12	Chemokine (C-X-C motif) ligand 12
C08	Hs.100431	NM_006419	CXCL13	Chemokine (C-X-C motif) ligand 13
C09	Hs.708201	NM_022059	CXCL16	Chemokine (C-X-C motif) ligand 16
C10	Hs.590921	NM_002089	CXCL2	Chemokine (C-X-C motif) ligand 2
C11	Hs.89714	NM_002994	CXCL5	Chemokine (C-X-C motif) ligand 5
C12	Hs.77367	NM_002416	CXCL9	Chemokine (C-X-C motif) ligand 9
D01	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily, member 6)
D02	Hs.466471	NM_000175	GPI	Glucose-6-phosphate isomerase
D03	Hs.211575	NM_000605	IFNA2	Interferon, alpha 2
D04	Hs.856	NM_000619	IFNG	Interferon, gamma
D05	Hs.193717	NM_000572	IL10	Interleukin 10
D06	Hs.467304	NM_000641	IL11	Interleukin 11
D07	Hs.673	NM_000882	IL12A	Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35)
				Interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte

Position	UniGene	GenBank	Symbol	Description
D08	Hs.674	NM_002187	IL12B	maturation factor 2, p40)
D09	Hs.845	NM_002188	IL13	Interleukin 13
D10	Hs.654378	NM_000585	IL15	Interleukin 15
D11	Hs.459095	NM_004513	IL16	Interleukin 16
D12	Hs.41724	NM_002190	IL17A	Interleukin 17A
E01	Hs.272295	NM_052872	IL17F	Interleukin 17F
E02	Hs.83077	NM_001562	IL18	Interleukin 18 (interferon-gamma-inducing factor)
E03	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
E04	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
E05	Hs.81134	NM_000577	IL1RN	Interleukin 1 receptor antagonist
E06	Hs.89679	NM_000586	IL2	Interleukin 2
E07	Hs.567559	NM_021803	IL21	Interleukin 21
E08	Hs.287369	NM_020525	IL22	Interleukin 22
E09	Hs.98309	NM_016584	IL23A	Interleukin 23, alpha subunit p19
E10	Hs.411311	NM_006850	IL24	Interleukin 24
E11	Hs.528111	NM_145659	IL27	Interleukin 27
E12	Hs.694	NM_000588	IL3	Interleukin 3 (colony-stimulating factor, multiple)
F01	Hs.73917	NM_000589	IL4	Interleukin 4
F02	Hs.2247	NM_000879	IL5	Interleukin 5 (colony-stimulating factor, eosinophil)
F03	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
F04	Hs.591873	NM_000880	IL7	Interleukin 7
F05	Hs.624	NM_000584	IL8	Interleukin 8
F06	Hs.960	NM_000590	IL9	Interleukin 9
F07	Hs.2250	NM_002309	LIF	Leukemia inhibitory factor (cholinergic differentiation factor)
F08	Hs.36	NM_000595	LTA	Lymphotoxin alpha (TNF superfamily, member 1)
F09	Hs.376208	NM_002341	LTB	Lymphotoxin beta (TNF superfamily, member 3)
F10	Hs.407995	NM_002415	MIF	Macrophage migration inhibitory factor (glycosylation-inhibiting factor)
F11	Hs.41565	NM_005259	MSTN	Myostatin
F12	Hs.370414	NM_018055	NODAL	Nodal homolog (mouse)
G01	Hs.248156	NM_020530	OSM	Oncostatin M
G02	Hs.2164	NM_002704	PPBP	Pro-platelet basic protein (chemokine (C-X-C motif) ligand 7)
G03	Hs.313	NM_000582	SPP1	Secreted phosphoprotein 1
G04	Hs.133379	NM_003238	TGFB2	Transforming growth factor, beta 2
G05	Hs.1166	NM_000460	THPO	Thrombopoietin
G06	Hs.241570	NM_000594	TNF	Tumor necrosis factor
G07	Hs.81791	NM_002546	TNFRSF11B	Tumor necrosis factor receptor superfamily, member 11b
G08	Hs.478275	NM_003810	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10
G09	Hs.333791	NM_003701	TNFSF11	Tumor necrosis factor (ligand) superfamily, member 11
G10	Hs.525157	NM_006573	TNFSF13B	Tumor necrosis factor (ligand) superfamily, member 13b
G11	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
G12	Hs.546295	NM_002995	XCL1	Chemokine (C motif) ligand 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, RT<sup>2</sup> Profiler PCR Arrays should be used together with the RT<sup>2</sup> First Strand Kit for cDNA synthesis and RT<sup>2</sup> SYBR<sup>®</sup> Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT <sup>2</sup> First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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.

RT<sup>2</sup> 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](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

Trademarks: QIAGEN® (QIAGEN Group); Applied Biosystems®, ViiA™, StepOnePlus™, ROX™ (Applied Biosystems Corporation or its subsidiaries); Bio-Rad®, iCycler®, iQ™, MyiQ™, Chromo4™, CFX96™, DNA Engine Opticon®, CFX384™ (Bio-Rad Laboratories, Inc.); Stratagene®, Mx3005P®, Mx3000P®, Mx4000® (Stratagene); Eppendorf®, Mastercycler® (Eppendorf AG); Roche®, LightCycler® (Roche Group); Fluidigm® BioMark™ (Fluidigm Corporation); SYBR® (Molecular Probes, Inc.).

1066029 03/2011 © 2011 QIAGEN, all rights reserved.

[www.qiagen.com](http://www.qiagen.com)

Canada ■ 800-572-9613

Ireland ■ 1800 555 049

Norway ■ 800-18859

China ■ 8621-3865-3865

Italy ■ 800-787980

Singapore ■ 1800-742-4368

Denmark ■ 80-885945

Japan ■ 03-6890-7300

Spain ■ 91-630-7050

Australia ■ 1-800-243-800

Finland ■ 0800-914416

Korea (South) ■ 080-000-7145

Sweden ■ 020-790282

Austria ■ 0800/281010

France ■ 01-60-920-930

Luxembourg ■ 8002 2076

Switzerland ■ 055-254-22-11

Belgium ■ 0800-79612

Germany ■ 02103-29-12000

Mexico ■ 01-800-7742-436

UK ■ 01293-422-911

Brazil ■ 0800-557779

Hong Kong ■ 800 933 965

The Netherlands ■ 0800 0229592

USA ■ 800-426-8157



Sample & Assay Technologies