

# RT<sup>2</sup> Profiler™ PCR Array:

## Human Common Cytokines

**Catalog Number**

PAHS-021A

PAHS-021C

PAHS-021D

PAHS-021E

PAHS-021F

PAHS-021G

**For Real-Time Instruments:**

ABI Standard Blocks; Bio-Rad iCycler, MyiQ, and (MJ Research) Chromo 4 and Stratagene Mx3005p, Mx3000p

ABI 7500 and 7900HT FAST 96-Well Blocks, ABI StepOnePlus

Bio-Rad (MJ Research) Opticon and Opticon 2, Stratagene Mx4000

ABI 7900HT 384-Well Block

Roche LightCycler 480 96-well Block

Roche LightCycler 480 384-well Block

**Description**

The Human Common Cytokines RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 important cytokine genes. This array includes interferons and interleukins as well as the bone morphogenetic proteins (BMP) and members of the TGF- $\beta$  family. Also represented are platelet-derived and vascular endothelial growth factors. Tumor necrosis factors are included as well as other cytokine-related genes. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to cytokines with this array.

**Functional Gene Groupings****Interferons:** IFNA1 (Interferon  $\alpha$ 1), IFNA2, IFNA4, IFNA5, IFNA8, IFNB1, IFNG (Interferon  $\gamma$ ), IFNK.**Interleukins:** IL10 (Interleukin 10), IL11, IL12A, IL12B, IL13, IL14, IL15, IL16, IL17A, IL17B, IL17C, IL25 (IL17E), IL18, IL19, IL1A, IL1B, IL1F10, IL1F5, IL1F6, IL1F7, IL1F8, IL1F9, IL2 (Interleukin 2), IL20, IL21, IL22, IL24, IL3, IL4, IL5, IL6, IL7, IL8, IL9.**Bone Morphogenic Proteins (BMPs) and TGF- $\beta$  Family:** BMP1, BMP2, BMP3, BMP4, BMP5, BMP6, BMP7, BMP8B, GDF10 (BMP3B), GDF11 (BMP11), GDF2 (BMP9), GDF3, GDF5, GDF8, GDF9, INHA, INHBA, NODAL, TGFA, TGFB1, TGFB2, TGFB3.**PDGF/VEGF Family:** FIGF (VEGFD), PDGFA.**TNF Superfamily:** FASLG (TNFSF6), LTA, LTB, TNF, TNFRSF11B, TNFSF10, TNFSF11, TNFSF12, TNFSF13, TNFSF13B, TNFSF14, TNFSF4, CD70 (TNFSF7), TNFSF8.**Other Growth Factors/Cytokines:** CSF1 (MCSF), CSF2 (GMCSF), FAM3B, LEFTY2 (EBAF).**Storage Conditions**

Please check the kit components immediately after you receive this package. We are only responsible for missing items reported within two (2) business days of receipt.

**Storage Conditions:** PCR Arrays are shipped at ambient temperature. Keep plates at -20 °C for long-term storage.**NOTE:** Be sure that you have the correct PCR Array format for your instrument before starting the experiment.

## **References**

1. Callard R, Gearing A (1998). *The Cytokine Facts Book*, Academic Press.
2. Oppenheim JJ, Feldmann M (2000) *Cytokine References*.
3. Richard A, Kaempfer R (2000). *Cytokines Revisited at Hilton Head Cytokine and Growth Factor Reviews* **11**: 255-266.
4. Peter J. Delves and Ivan M. Roitt (1998) *Encyclopedia of Immunology*, 2<sup>nd</sup> Edition, Academic Press.
5. Jacqueline Parkin and Byrony Cohen (2001) An overview of the immune system, *The Lancet* **357**: 1777-89.
6. Angus Thomson (1998) *Cytokine Handbook*, 3<sup>rd</sup> edition, Academic Press.
7. Anthony Mire-Sluis and Robin Thorpe (1998) *Cytokines*, Academic Press.

## Product Specification Sheet

### Array Layout: Human Common Cytokines PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	BMP1	BMP2	BMP3	BMP4	BMP5	BMP6	BMP7	BMP8B	CSF1	CSF2	FAM3B	FASLG
B	FIGF	GDF10	GDF11	GDF2	GDF3	GDF5	GDF8	GDF9	IFNA1	IFNA2	IFNA4	IFNA5
C	IFNA8	IFNB1	IFNG	IFNK	IL10	IL11	IL12A	IL12B	IL13	IL14	IL15	IL16
D	IL17A	IL17B	IL17C	IL25	IL18	IL19	IL1A	IL1B	IL1F10	IL1F5	IL1F6	IL1F7
E	IL1F8	IL1F9	IL2	IL20	IL21	IL22	IL24	IL3	IL4	IL5	IL6	IL7
F	IL8	IL9	INHBA	INHBA	LEFTY2	LTA	LTB	NODAL	PDGFA	TGFA	TGFB1	TGFB2
G	TGFB3	TNF	TNFRSF11B	TNFSF10	TNFSF11	TNFSF12	TNFSF13	TNFSF13B	TNFSF14	TNFSF4	CD70	TNFSF8
H	B2M	HPRT1	RPL13A	GAPDH	ACTB	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

### Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Hs.1274	NM_006129	BMP1	Bone morphogenetic protein 1
A02	Hs.73853	NM_001200	BMP2	Bone morphogenetic protein 2
A03	Hs.121507	NM_001201	BMP3	Bone morphogenetic protein 3 (osteogenic)
A04	Hs.68879	NM_001202	BMP4	Bone morphogenetic protein 4
A05	Hs.296648	NM_021073	BMP5	Bone morphogenetic protein 5
A06	Hs.285671	NM_001718	BMP6	Bone morphogenetic protein 6
A07	Hs.473163	NM_001719	BMP7	Bone morphogenetic protein 7 (osteogenic protein 1)
A08	Hs.409964	NM_001720	BMP8B	Bone morphogenetic protein 8b (osteogenic protein 2)
A09	Hs.591402	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)
A10	Hs.1349	NM_000758	CSF2	Colony stimulating factor 2 (granulocyte-macrophage)
A11	Hs.473877	NM_058186	FAM3B	Family with sequence similarity 3, member B
A12	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily, member 6)
B01	Hs.11392	NM_004469	FIGF	C-fos induced growth factor (vascular endothelial growth factor D)
B02	Hs.2171	NM_004962	GDF10	Growth differentiation factor 10
B03	Hs.643604	NM_005811	GDF11	Growth differentiation factor 11
B04	Hs.279463	NM_016204	GDF2	Growth differentiation factor 2
B05	Hs.86232	NM_020634	GDF3	Growth differentiation factor 3
B06	Hs.1573	NM_000557	GDF5	Growth differentiation factor 5 (cartilage-derived morphogenetic protein-1)
B07	Hs.41565	NM_005259	GDF8	Growth differentiation factor 8
B08	Hs.25022	NM_005260	GDF9	Growth differentiation factor 9
B09	Hs.37026	NM_024013	IFNA1	Interferon, alpha 1
B10	Hs.211575	NM_000605	IFNA2	Interferon, alpha 2
B11	Hs.1510	NM_021068	IFNA4	Interferon, alpha 4
B12	Hs.37113	NM_002169	IFNA5	Interferon, alpha 5
C01	Hs.73890	NM_002170	IFNA8	Interferon, alpha 8
C02	Hs.93177	NM_002176	IFNB1	Interferon, beta 1, fibroblast
C03	Hs.856	NM_000619	IFNG	Interferon, gamma
C04	Hs.591083	NM_020124	IFNK	Interferon, kappa
C05	Hs.193717	NM_000572	IL10	Interleukin 10
C06	Hs.467304	NM_000641	IL11	Interleukin 11
C07	Hs.673	NM_000882	IL12A	Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35)
C08	Hs.674	NM_002187	IL12B	Interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)
C09	Hs.845	NM_002188	IL13	Interleukin 13
C10	Hs.17987	NM_175852	TXLNA	Taxilin alpha
C11	Hs.168132	NM_000585	IL15	Interleukin 15
C12	Hs.459095	NM_004513	IL16	Interleukin 16 (lymphocyte chemoattractant factor)
D01	Hs.41724	NM_002190	IL17A	Interleukin 17A
D02	Hs.156979	NM_014443	IL17B	Interleukin 17B
D03	Hs.278911	NM_013278	IL17C	Interleukin 17C
D04	Hs.302036	NM_022789	IL25	Interleukin 25
D05	Hs.83077	NM_001562	IL18	Interleukin 18 (interferon-gamma-inducing factor)

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Position	UniGene	GenBank	Symbol	Description
D06	Hs.128395	NM_013371	IL19	Interleukin 19
D07	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
D08	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
D09	Hs.306974	NM_173161	IL1F10	Interleukin 1 family, member 10 (theta)
D10	Hs.516301	NM_012275	IL1F5	Interleukin 1 family, member 5 (delta)
D11	Hs.278910	NM_014440	IL1F6	Interleukin 1 family, member 6 (epsilon)
D12	Hs.166371	NM_173205	IL1F7	Interleukin 1 family, member 7 (zeta)
E01	Hs.278909	NM_173178	IL1F8	Interleukin 1 family, member 8 (eta)
E02	Hs.211238	NM_019618	IL1F9	Interleukin 1 family, member 9
E03	Hs.89679	NM_000586	IL2	Interleukin 2
E04	Hs.272373	NM_018724	IL20	Interleukin 20
E05	Hs.567559	NM_021803	IL21	Interleukin 21
E06	Hs.287369	NM_020525	IL22	Interleukin 22
E07	Hs.411311	NM_006850	IL24	Interleukin 24
E08	Hs.694	NM_000588	IL3	Interleukin 3 (colony-stimulating factor, multiple)
E09	Hs.73917	NM_000589	IL4	Interleukin 4
E10	Hs.2247	NM_000879	IL5	Interleukin 5 (colony-stimulating factor, eosinophil)
E11	Hs.512234	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
E12	Hs.591873	NM_000880	IL7	Interleukin 7
F01	Hs.624	NM_000584	IL8	Interleukin 8
F02	Hs.960	NM_000590	IL9	Interleukin 9
F03	Hs.407506	NM_002191	INHAI	Inhibin, alpha
F04	Hs.583348	NM_002192	INHBA	Inhibin, beta A (activin A, activin AB alpha polypeptide)
F05	Hs.520187	NM_003240	LEFTY2	Left-right determination factor 2
F06	Hs.36	NM_000595	LTA	Lymphotoxin alpha (TNF superfamily, member 1)
F07	Hs.376208	NM_002341	LTB	Lymphotoxin beta (TNF superfamily, member 3)
F08	Hs.370414	NM_018055	NODAL	Nodal homolog (mouse)
F09	Hs.645488	NM_002607	PDGFA	Platelet-derived growth factor alpha polypeptide
F10	Hs.170009	NM_003236	TGFA	Transforming growth factor, alpha
F11	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
F12	Hs.133379	NM_003238	TGFB2	Transforming growth factor, beta 2
G01	Hs.592317	NM_003239	TGFB3	Transforming growth factor, beta 3
G02	Hs.241570	NM_000594	TNF	Tumor necrosis factor (TNF superfamily, member 2)
G03	Hs.81791	NM_002546	TNFRSF11B	Tumor necrosis factor receptor superfamily, member 11b (osteoprotegerin)
G04	Hs.478275	NM_003810	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10
G05	Hs.333791	NM_003701	TNFSF11	Tumor necrosis factor (ligand) superfamily, member 11
G06	Hs.415839	NM_003809	TNFSF12	Tumor necrosis factor (ligand) superfamily, member 12
G07	Hs.54673	NM_003808	TNFSF13	Tumor necrosis factor (ligand) superfamily, member 13
G08	Hs.525157	NM_006573	TNFSF13B	Tumor necrosis factor (ligand) superfamily, member 13b
G09	Hs.129708	NM_003807	TNFSF14	Tumor necrosis factor (ligand) superfamily, member 14
G10	Hs.181097	NM_003326	TNFSF4	Tumor necrosis factor (ligand) superfamily, member 4 (tax-transcriptionally activated)
G11	Hs.501497	NM_001252	CD70	CD70 molecule
G12	Hs.494901	NM_001244	TNFSF8	Tumor necrosis factor (ligand) superfamily, member 8
H01	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H02	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1 (Lesch-Nyhan syndrome)
H03	Hs.546356	NM_012423	RPL13A	Ribosomal protein L13a
H04	Hs.544577	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H05	Hs.520640	NM_001101	ACTB	Actin, beta
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