

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

## Human T-Cell & B-Cell Activation

Cat. no. 330231 PAHS-053ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> Profiler PCR Array, Format A	Applied Biosystems <sup>®</sup> models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad <sup>®</sup> models iCycler <sup>®</sup> , iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf <sup>®</sup> Mastercycler <sup>®</sup> ep realplex models 2, 2s, 4, 4s; Stratagene <sup>®</sup> models Mx3005P <sup>®</sup> , Mx3000P <sup>®</sup> ; 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 <sup>®</sup> , DNA Engine Opticon 2; Stratagene Mx4000 <sup>®</sup>
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 <sup>®</sup> LightCycler <sup>®</sup> 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 <sup>®</sup> BioMark™



## Description

The Human T-Cell & B-Cell Activation RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 genes representing T Cell and B Cell Activation, a key part of adaptive immunity. This array includes genes involved B-cell activation as well as genes involved in B-cell proliferation and differentiation. Genes involved in the activation of T-cells and their proliferation and differentiation are also represented along with genes regulating Th1 and Th2 development and T-cell polarization. Genes involved in the activation of macrophages, neutrophils, and natural killer cells are also included. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to T Cell and B Cell Activation 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  $-20^{\circ}\text{C}$ .

**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.

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## 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
A	ADA	AICDA	APC	BCL2	BLM	BLNK	CCL3	CCR1	CCR2	CCR3	CCR4	CCR5
B	CD1D	CD2	CD27	CD274	CD276	CD28	CD3D	CD3E	CD3G	CD4	CD40	CD40LG
C	CD47	CD5	CD7	CD80	CD81	CD86	CD8A	CD8B	CSF2	CX3CL1	CXCR3	CXCR4
D	CXCR5	DPP4	EGR1	FAS	FASLG	FOXP3	ICOSLG	IFNG	IL10	IL11	IL12A	IL12B
E	IL12RB1	IL12RB2	IL13	IL15	IL18	IL18R1	IL1B	IL2	IL2RA	IL3	IL4	IL4R
F	IL5	IL6	IL7	IL8	IRF4	LAG3	LCK	MAP3K7	MICB	MS4A1	NCK1	NOS2
G	PTPRC	RAG1	RIPK2	SOCS1	TGFB1	TLR1	TLR2	TLR4	TLR6	TLR9	TNFSF14	VAV1
H	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.654536	NM_000022	ADA	Adenosine deaminase
A02	Hs.149342	NM_020661	AICDA	Activation-induced cytidine deaminase
A03	Hs.158932	NM_000038	APC	Adenomatous polyposis coli
A04	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A05	Hs.716515	NM_000057	BLM	Bloom syndrome, RecQ helicase-like
A06	Hs.665244	NM_013314	BLNK	B-cell linker
A07	Hs.514107	NM_002983	CCL3	Chemokine (C-C motif) ligand 3
A08	Hs.301921	NM_001295	CCR1	Chemokine (C-C motif) receptor 1
A09	Hs.511794	NM_001123396	CCR2	Chemokine (C-C motif) receptor 2
A10	Hs.506190	NM_001837	CCR3	Chemokine (C-C motif) receptor 3
A11	Hs.184926	NM_005508	CCR4	Chemokine (C-C motif) receptor 4
A12	Hs.450802	NM_000579	CCR5	Chemokine (C-C motif) receptor 5
B01	Hs.1799	NM_001766	CD1D	CD1d molecule
B02	Hs.523500	NM_001767	CD2	CD2 molecule
B03	Hs.355307	NM_001242	CD27	CD27 molecule
B04	Hs.521989	NM_014143	CD274	CD274 molecule
B05	Hs.77873	NM_025240	CD276	CD276 molecule
B06	Hs.591629	NM_006139	CD28	CD28 molecule
B07	Hs.504048	NM_000732	CD3D	CD3d molecule, delta (CD3-TCR complex)
B08	Hs.3003	NM_000733	CD3E	CD3e molecule, epsilon (CD3-TCR complex)
B09	Hs.2259	NM_000073	CD3G	CD3g molecule, gamma (CD3-TCR complex)
B10	Hs.631659	NM_000616	CD4	CD4 molecule
B11	Hs.472860	NM_001250	CD40	CD40 molecule, TNF receptor superfamily member 5
B12	Hs.592244	NM_000074	CD40LG	CD40 ligand
C01	Hs.446414	NM_001777	CD47	CD47 molecule
C02	Hs.58685	NM_014207	CD5	CD5 molecule
C03	Hs.36972	NM_006137	CD7	CD7 molecule
C04	Hs.838	NM_005191	CD80	CD80 molecule
C05	Hs.54457	NM_004356	CD81	CD81 molecule
C06	Hs.171182	NM_006889	CD86	CD86 molecule
C07	Hs.85258	NM_001768	CD8A	CD8a molecule
C08	Hs.405667	NM_004931	CD8B	CD8b molecule
C09	Hs.1349	NM_000758	CSF2	Colony stimulating factor 2 (granulocyte-macrophage)
C10	Hs.531668	NM_002996	CX3CL1	Chemokine (C-X3-C motif) ligand 1
C11	Hs.198252	NM_001504	CXCR3	Chemokine (C-X-C motif) receptor 3
C12	Hs.593413	NM_003467	CXCR4	Chemokine (C-X-C motif) receptor 4
D01	Hs.113916	NM_001716	CXCR5	Chemokine (C-X-C motif) receptor 5
D02	Hs.368912	NM_001935	DPP4	Dipeptidyl-peptidase 4
D03	Hs.326035	NM_001964	EGR1	Early growth response 1
D04	Hs.244139	NM_000043	FAS	Fas (TNF receptor superfamily, member 6)
D05	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily, member 6)
D06	Hs.247700	NM_014009	FOXP3	Forkhead box P3
D07	Hs.14155	NM_015259	ICOSLG	Inducible T-cell co-stimulator ligand
D08	Hs.856	NM_000619	IFNG	Interferon, gamma
D09	Hs.193717	NM_000572	IL10	Interleukin 10

Position	UniGene	GenBank	Symbol	Description
D10	Hs.467304	NM_000641	IL11	Interleukin 11
D11	Hs.673	NM_000882	IL12A	Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35)
D12	Hs.674	NM_002187	IL12B	Interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)
E01	Hs.567294	NM_005535	IL12RB1	Interleukin 12 receptor, beta 1
E02	Hs.479347	NM_001559	IL12RB2	Interleukin 12 receptor, beta 2
E03	Hs.845	NM_002188	IL13	Interleukin 13
E04	Hs.654378	NM_000585	IL15	Interleukin 15
E05	Hs.83077	NM_001562	IL18	Interleukin 18 (interferon-gamma-inducing factor)
E06	Hs.469521	NM_003855	IL18R1	Interleukin 18 receptor 1
E07	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
E08	Hs.89679	NM_000586	IL2	Interleukin 2
E09	Hs.231367	NM_000417	IL2RA	Interleukin 2 receptor, alpha
E10	Hs.694	NM_000588	IL3	Interleukin 3 (colony-stimulating factor, multiple)
E11	Hs.73917	NM_000589	IL4	Interleukin 4
E12	Hs.513457	NM_000418	IL4R	Interleukin 4 receptor
F01	Hs.2247	NM_000879	IL5	Interleukin 5 (colony-stimulating factor, eosinophil)
F02	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
F03	Hs.591873	NM_000880	IL7	Interleukin 7
F04	Hs.624	NM_000584	IL8	Interleukin 8
F05	Hs.401013	NM_002460	IRF4	Interferon regulatory factor 4
F06	Hs.409523	NM_002286	LAG3	Lymphocyte-activation gene 3
F07	Hs.470627	NM_005356	LCK	Lymphocyte-specific protein tyrosine kinase
F08	Hs.644143	NM_003188	MAP3K7	Mitogen-activated protein kinase kinase kinase 7
F09	Hs.211580	NM_005931	MICB	MHC class I polypeptide-related sequence B
F10	Hs.712553	NM_021950	MS4A1	Membrane-spanning 4-domains, subfamily A, member 1
F11	Hs.477693	NM_006153	NCK1	NCK adaptor protein 1
F12	Hs.709191	NM_000625	NOS2	Nitric oxide synthase 2, inducible
G01	Hs.654514	NM_002838	PTPRC	Protein tyrosine phosphatase, receptor type, C
G02	Hs.73958	NM_000448	RAG1	Recombination activating gene 1
G03	Hs.103755	NM_003821	RIPK2	Receptor-interacting serine-threonine kinase 2
G04	Hs.50640	NM_003745	SOCS1	Suppressor of cytokine signaling 1
G05	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
G06	Hs.654532	NM_003263	TLR1	Toll-like receptor 1
G07	Hs.519033	NM_003264	TLR2	Toll-like receptor 2
G08	Hs.174312	NM_138554	TLR4	Toll-like receptor 4
G09	Hs.662185	NM_006068	TLR6	Toll-like receptor 6
G10	Hs.87968	NM_017442	TLR9	Toll-like receptor 9
G11	Hs.129708	NM_003807	TNFSF14	Tumor necrosis factor (ligand) superfamily, member 14
G12	Hs.116237	NM_005428	VAV1	Vav 1 guanine nucleotide exchange factor
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.

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