

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

## Human T Cell Anergy & Immune Tolerance

Cat. no. 330231 PAHS-074ZA

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™



Sample & Assay Technologies

## Description

The Human T-cell Anergy and Immune Tolerance RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 key genes involved in T-cell anergy and immune tolerance. T-cells' functional unresponsiveness, termed anergy, is a cell-intrinsic mechanism that contributes to peripheral self-tolerance. This array contains T-cell and B-cell regulators, cytokines and receptors, TNF superfamily members and their receptors, and transcriptional factors. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes involved in T-cell anergy and immune tolerance 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	BTLA	CBLB	CCL3L1	CCR4	CD27	CD28	CD40	CD40LG	CD70	CDK2	CDK4	CMA1
B	CSF1	CSF2	CTLA4	DGKA	DGKZ	EGR2	EGR3	EOMES	FAS	FASLG	FOS	FOXP1
C	FOXP2	FOXP3	GATA3	GZMB	HDAC9	ICAM1	ICOS	IFNG	IL10	IL10RA	IL13	IL15
D	IL17A	IL1A	IL2	IL2RA	IL2RB	IL31	IL4	IL5	IL6	IL7R	ING4	IRF4
E	ITCH	ITGA1	JAK1	JAK3	JUN	LAT	LEP	LGALS3	LTA	MEF2A	NFATC1	NFATC2
F	NFATC3	NFKB1	NHLH2	NOTCH1	PDCD1	PRF1	PRKCG	PTGER2	PTGS2	RNF128	SELL	STAT3
G	STAT6	TBX21	TGFB1	TNFRSF10A	TNFRSF14	TNFRSF18	TNFRSF4	TNFRSF8	TNFRSF9	TNFSF10	TNFSF14	TNFSF8
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.445162	NM_181780	BTLA	B and T lymphocyte associated
A02	Hs.430589	NM_170662	CBLB	Cas-Br-M (murine) ecotropic retroviral transforming sequence b
A03	Hs.512683	NM_021006	CCL3L1	Chemokine (C-C motif) ligand 3-like 1
A04	Hs.184926	NM_005508	CCR4	Chemokine (C-C motif) receptor 4
A05	Hs.355307	NM_001242	CD27	CD27 molecule
A06	Hs.591629	NM_006139	CD28	CD28 molecule
A07	Hs.472860	NM_001250	CD40	CD40 molecule, TNF receptor superfamily member 5
A08	Hs.592244	NM_000074	CD40LG	CD40 ligand
A09	Hs.501497	NM_001252	CD70	CD70 molecule
A10	Hs.19192	NM_001798	CDK2	Cyclin-dependent kinase 2
A11	Hs.95577	NM_000075	CDK4	Cyclin-dependent kinase 4
A12	Hs.135626	NM_001836	CMA1	Chymase 1, mast cell
B01	Hs.591402	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)
B02	Hs.1349	NM_000758	CSF2	Colony stimulating factor 2 (granulocyte-macrophage)
B03	Hs.247824	NM_005214	CTLA4	Cytotoxic T-lymphocyte-associated protein 4
B04	Hs.524488	NM_201554	DGKA	Diacylglycerol kinase, alpha 80kDa
B05	Hs.502461	NM_003646	DGKZ	Diacylglycerol kinase, zeta
B06	Hs.1395	NM_000399	EGR2	Early growth response 2
B07	Hs.534313	NM_004430	EGR3	Early growth response 3
B08	Hs.591663	NM_005442	EOMES	Eomesodermin
B09	Hs.244139	NM_000043	FAS	Fas (TNF receptor superfamily, member 6)
B10	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily, member 6)
B11	Hs.728789	NM_005252	FOS	FBJ murine osteosarcoma viral oncogene homolog
B12	Hs.431498	NM_032682	FOXP1	Forkhead box P1
C01	Hs.656280	NM_014491	FOXP2	Forkhead box P2
C02	Hs.247700	NM_014009	FOXP3	Forkhead box P3
C03	Hs.524134	NM_002051	GATA3	GATA binding protein 3
C04	Hs.1051	NM_004131	GZMB	Granzyme B (granzyme 2, cytotoxic T-lymphocyte-associated serine esterase 1)
C05	Hs.196054	NM_178425	HDAC9	Histone deacetylase 9
C06	Hs.643447	NM_000201	ICAM1	Intercellular adhesion molecule 1
C07	Hs.56247	NM_012092	ICOS	Inducible T-cell co-stimulator
C08	Hs.856	NM_000619	IFNG	Interferon, gamma
C09	Hs.193717	NM_000572	IL10	Interleukin 10
C10	Hs.504035	NM_001558	IL10RA	Interleukin 10 receptor, alpha
C11	Hs.845	NM_002188	IL13	Interleukin 13
C12	Hs.654378	NM_000585	IL15	Interleukin 15
D01	Hs.41724	NM_002190	IL17A	Interleukin 17A
D02	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
D03	Hs.89679	NM_000586	IL2	Interleukin 2
D04	Hs.231367	NM_000417	IL2RA	Interleukin 2 receptor, alpha
D05	Hs.474787	NM_000878	IL2RB	Interleukin 2 receptor, beta
D06	Hs.569071	NM_001014336	IL31	Interleukin 31
D07	Hs.73917	NM_000589	IL4	Interleukin 4
D08	Hs.2247	NM_000879	IL5	Interleukin 5 (colony-stimulating factor, eosinophil)
D09	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)

Position	UniGene	GenBank	Symbol	Description
D10	Hs.591742	NM_002185	IL7R	Interleukin 7 receptor
D11	Hs.524210	NM_016162	ING4	Inhibitor of growth family, member 4
D12	Hs.401013	NM_002460	IRF4	Interferon regulatory factor 4
E01	Hs.632272	NM_031483	ITCH	Itchy E3 ubiquitin protein ligase homolog (mouse)
E02	Hs.644352	NM_181501	ITGA1	Integrin, alpha 1
E03	Hs.207538	NM_002227	JAK1	Janus kinase 1
E04	Hs.515247	NM_000215	JAK3	Janus kinase 3
E05	Hs.714791	NM_002228	JUN	Jun proto-oncogene
E06	Hs.632179	NM_014387	LAT	Linker for activation of T cells
E07	Hs.194236	NM_000230	LEP	Leptin
E08	Hs.531081	NM_002306	LGALS3	Lectin, galactoside-binding, soluble, 3
E09	Hs.36	NM_000595	LTA	Lymphotoxin alpha (TNF superfamily, member 1)
E10	Hs.268675	NM_005587	MEF2A	Myocyte enhancer factor 2A
E11	Hs.534074	NM_172390	NFATC1	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1
E12	Hs.713650	NM_012340	NFATC2	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 2
F01	Hs.632209	NM_004555	NFATC3	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 3
F02	Hs.654408	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
F03	Hs.46296	NM_005599	NHLH2	Nescent helix loop helix 2
F04	Hs.495473	NM_017617	NOTCH1	Notch 1
F05	Hs.158297	NM_005018	PDCD1	Programmed cell death 1
F06	Hs.2200	NM_005041	PRF1	Perforin 1 (pore forming protein)
F07	Hs.631564	NM_002739	PRKCG	Protein kinase C, gamma
F08	Hs.2090	NM_000956	PTGER2	Prostaglandin E receptor 2 (subtype EP2), 53kDa
F09	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
F10	Hs.496542	NM_194463	RNF128	Ring finger protein 128
F11	Hs.728756	NM_000655	SELL	Selectin L
F12	Hs.463059	NM_003150	STAT3	Signal transducer and activator of transcription 3 (acute-phase response factor)
G01	Hs.524518	NM_003153	STAT6	Signal transducer and activator of transcription 6, interleukin-4 induced
G02	Hs.272409	NM_013351	TBX21	T-box 21
G03	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
G04	Hs.591834	NM_003844	TNFRSF10A	Tumor necrosis factor receptor superfamily, member 10a
G05	Hs.512898	NM_003820	TNFRSF14	Tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator)
G06	Hs.212680	NM_004195	TNFRSF18	Tumor necrosis factor receptor superfamily, member 18
G07	Hs.129780	NM_003327	TNFRSF4	Tumor necrosis factor receptor superfamily, member 4
G08	Hs.1314	NM_001243	TNFRSF8	Tumor necrosis factor receptor superfamily, member 8
G09	Hs.654459	NM_001561	TNFRSF9	Tumor necrosis factor receptor superfamily, member 9
G10	Hs.478275	NM_003810	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10
G11	Hs.129708	NM_003807	TNFSF14	Tumor necrosis factor (ligand) superfamily, member 14
G12	Hs.654445	NM_001244	TNFSF8	Tumor necrosis factor (ligand) superfamily, member 8
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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