# RT<sup>2</sup> Profiler PCR Array (Rotor-Gene® Format) Human T Cell Anergy & Immune Tolerance

Cat. no. 330231 PAHS-074ZR

#### For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> Profiler PCR Array,	Rotor-Gene Q, other Rotor-Gene cyclers
Format R	

#### **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 the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

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**

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc<sup>™</sup> (plate A1–A12=Rotor-Disc 1–12, plate B1–B12=Rotor-Disc 13–24, etc.). To maintain data analysis compatibility, wells 97–100 do not contain real-time assays but will contain master mix to account for weight balance.

## 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)
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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
	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)
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
		NM 014387	LAT	Linker for activation of T cells
			LAI	LITIKET TOT ACTIVATION OF LICEUS
E06	Hs.632179	_		
	Hs.194236 Hs.531081	NM_000230 NM_002306	LEP LGALS3	Leptin Lectin, galactoside-binding, soluble, 3

Position	UniGene	GenBank	Symbol	Description	
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	Nescient 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, PO	
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, RT2 Profiler PCR Arrays should be used together with the RT2 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 ROX <sup>™</sup> FAST Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the Rotor-Gene Q and other Rotor-Gene cyclers	330620

<sup>\*</sup> 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.giagen. com or can be requested from QIAGEN Technical Services or your local distributor.

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