

# RT<sup>2</sup> Profiler PCR Array (Rotor-Gene<sup>®</sup> Format)

## Rat Th1 & Th2 Responses

Cat. no. 330231 PARN-034ZR

### 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 Rat Th1 & Th2 Responses RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 genes involved in T helper cell (Th cell) immune responses. Adaptive immunity involves activation of T cells and B cells, lymphocytes that initiate a tailored immune response to a specific pathogen. Th cells cannot destroy pathogens alone, but instead communicate with B cells to mediate appropriate immune responses. The 2 well-known and characterized Th cell subtypes, Th1 and Th2 cells, have specific immune functions and are identified by their secreted cytokines and specific receptors. Th1 cells promote cell-mediated immunity, and secrete cytokines such as IFNG. Th2 cells promote humoral immunity and produce immunogenic factors such as IL13 and IgE. Unnecessary immune responses caused by the activation of the inappropriate Th subtype can contribute to asthma, allergies, and some autoimmune diseases. Analyzing T cell gene expression and regulation can distinguish the relative roles and importance of both subtypes to an experimental model system. This array includes markers for Th1 and Th2 cells as well as genes involved in Th1 and Th2 function and immune responses. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes important for Th1 and Th2 responses 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.



---

Sample & Assay Technologies

## Array layout

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc™ (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	Rn.20571	NM_001107084	Bcl6	B-cell CLL/lymphoma 6
A02	Rn.10632	NM_019205	Ccl11	Chemokine (C-C motif) ligand 11
A03	Rn.8019	NM_031116	Cd5	Chemokine (C-C motif) ligand 5
A04	Rn.26815	NM_001007612	Cd7	Chemokine (C-C motif) ligand 7
A05	Rn.49607	NM_001108836	Ccr10	Chemokine (C-C motif) receptor 10
A06	Rn.211983	NM_021866	Ccr2	Chemokine (C-C motif) receptor 2
A07	Rn.9890	NM_053958	Ccr3	Chemokine (C-C motif) receptor 3
A08	Rn.81076	NM_133532	Ccr4	Chemokine (C-C motif) receptor 4
A09	Rn.10736	NM_053960	Ccr5	Chemokine (C-C motif) receptor 5
A10	Rn.134200	NM_001024335	Cd27	CD27 molecule
A11	Rn.10327	NM_013121	Cd28	Cd28 molecule
A12	Rn.10748	NM_012705	Cd4	Cd4 molecule
B01	Rn.25180	NM_134360	Cd40	CD40 molecule, TNF receptor superfamily member 5
B02	Rn.44218	NM_053353	Cd40lg	CD40 ligand
B03	Rn.23779	NM_134327	Cd69	Cd69 molecule
B04	Rn.10138	NM_012926	Cd80	Cd80 molecule
B05	Rn.6734	NM_020081	Cd86	CD86 molecule
B06	Rn.6479	NM_024125	Cebpb	CCAAT/enhancer binding protein (C/EBP), beta
B07	Rn.108128	NM_133381	Crebbp	CREB binding protein
B08	Rn.44285	XM_340799	Csf2	Colony stimulating factor 2 (granulocyte-macrophage)
B09	Rn.10259	NM_031674	Ctla4	Cytotoxic T-lymphocyte-associated protein 4
B10	Rn.24787	NM_053415	Cxcr3	Chemokine (C-X-C motif) receptor 3
B11	Rn.9725	NM_012908	Faslg	Fas ligand (TNF superfamily, member 6)
B12	Rn.92350	NM_133293	Gata3	GATA binding protein 3
C01	Rn.10935	NM_012566	Gfi1	Growth factor independent 1 transcription repressor
C02	Rn.168816	NM_022610	Icos	Inducible T-cell co-stimulator
C03	Rn.10795	NM_138880	Ifng	Interferon gamma
C04	Rn.9868	NM_012854	Il10	Interleukin 10
C05	Rn.48686	NM_022611	Il12b	Interleukin 12b
C06	Rn.207395	XM_231873	Il12rb2	Interleukin 12 receptor, beta 2
C07	Rn.9921	NM_053828	Il13	Interleukin 13
C08	Rn.81210	NM_145789	Il13ra1	Interleukin 13 receptor, alpha 1
C09	Rn.2490	NM_013129	Il15	Interleukin 15
C10	Rn.11118	NM_019165	Il18	Interleukin 18
C11	Rn.20083	NM_053374	Il18bp	Interleukin 18 binding protein
C12	Rn.149181	NM_001106905	Il18r1	Interleukin 18 receptor 1
D01	Rn.9758	NM_013123	Il1r1	Interleukin 1 receptor, type I
D02	Rn.10072	NM_013037	Il1rl1	Interleukin 1 receptor-like 1
D03	Rn.9871	NM_053836	Il2	Interleukin 2
D04	Rn.141273	XM_577423	Il25	Interleukin 25
D05	N/A	XM_344962	Il27	Interleukin 27
D06	Rn.47680	NM_001105943	Il27ra	Interleukin 27 receptor, alpha
D07	Rn.9872	NM_013163	Il2ra	Interleukin 2 receptor, alpha
D08	Rn.10652	NM_031513	Il3	Interleukin 3
D09	Rn.108255	NM_201270	Il4	Interleukin 4
D10	Rn.10471	NM_133380	Il4ra	Interleukin 4 receptor, alpha
D11	Rn.44227	NM_021834	Il5	Interleukin 5
D12	Rn.9873	NM_012589	Il6	Interleukin 6
E01	Rn.10793	NM_013110	Il7	Interleukin 7
E02	Rn.6633	NM_001106418	Il7r	Interleukin 7 receptor
E03	Rn.92374	NM_001105747	Il9	Interleukin 9
E04	Rn.6396	NM_012591	Irf1	Interferon regulatory factor 1
E05	Rn.82114	NM_001106108	Irf4	Interferon regulatory factor 4
E06	Rn.90191	NM_053466	Jak1	Janus kinase 1
E07	Rn.18909	NM_031514	Jak2	Janus kinase 2
E08	Rn.11159	NM_012855	Jak3	Janus kinase 3
E09	Rn.15806	NM_021836	Junb	Jun B proto-oncogene

Position	UniGene	GenBank	Symbol	Description
E10	Rn.160577	NM_080769	Lta	Lymphotoxin alpha (TNF superfamily, member 1)
E11	Rn.10726	NM_019318	Maf	V-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian)
E12	Rn.4090	XM_341399	Mapk8	Mitogen-activated protein kinase 8
F01	Rn.9910	NM_017322	Mapk9	Mitogen-activated protein kinase 9
F02	Rn.214090	NM_001107805	Nfatc2	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 2
F03	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
F04	Rn.11826	NM_001105836	Pcgf2	Polycomb group ring finger 2
F05	Rn.90166	NM_001109887	Piprc	Protein tyrosine phosphatase, receptor type, C
F06	Rn.11348	NM_012878	Sfipd	Surfactant protein D
F07	Rn.82754	NM_145879	Socs1	Suppressor of cytokine signaling 1
F08	Rn.127801	NM_053565	Socs3	Suppressor of cytokine signaling 3
F09	Rn.47568	NM_001109274	Socs5	Suppressor of cytokine signaling 5
F10	Rn.8871	NM_012881	Spp1	Secreted phosphoprotein 1
F11	Rn.33229	NM_032612	Stat1	Signal transducer and activator of transcription 1
F12	Rn.137580	NM_001012226	Stat4	Signal transducer and activator of transcription 4
G01	Rn.6880	NM_001044250	Stat6	Signal transducer and activator of transcription 6
G02	Rn.144930	NM_001107043	Tbx21	T-box 21
G03	Rn.7018	NM_013174	Tgfb3	Transforming growth factor, beta 3
G04	Rn.14534	NM_019178	Tlr4	Toll-like receptor 4
G05	Rn.163249	NM_207604	Tlr6	Toll-like receptor 6
G06	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G07	Rn.48883	NM_013049	Tnfrsf4	Tumor necrosis factor receptor superfamily, member 4
G08	Rn.11322	NM_019135	Tnfrsf8	Tumor necrosis factor receptor superfamily, member 8
G09	Rn.30043	NM_053552	Tnfsf4	Tumor necrosis factor (ligand) superfamily, member 4
G10	Rn.140313	XM_233741	Tyk2	Tyrosine kinase 2
G11	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G12	Rn.162877	NM_173290	Yy1	YY1 transcription factor
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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 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

\* 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<sup>®</sup>, Rotor-Gene<sup>®</sup>, Rotor-Disc<sup>™</sup> (QIAGEN Group); ROX<sup>™</sup> (Applera Corporation or its subsidiaries); SYBR<sup>®</sup> (Molecular Probes, Inc.).

1067688 03/2011 © 2011 QIAGEN, all rights reserved.

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

**Australia** ■ 1-800-243-800

**Austria** ■ 0800/281010

**Belgium** ■ 0800-79612

**Brazil** ■ 0800-557779

**Canada** ■ 800-572-9613

**China** ■ 8621-3865-3865

**Denmark** ■ 80-885945

**Finland** ■ 0800-914416

**France** ■ 01-60-920-930

**Germany** ■ 02103-29-12000

**Hong Kong** ■ 800 933 965

**Ireland** ■ 1800 555 049

**Italy** ■ 800-787980

**Japan** ■ 03-6890-7300

**Korea (South)** ■ 080-000-7145

**Luxembourg** ■ 8002 2076

**Mexico** ■ 01-800-7742-436

**The Netherlands** ■ 0800 0229592

**Norway** ■ 800-18859

**Singapore** ■ 1800-742-4368

**Spain** ■ 91-630-7050

**Sweden** ■ 020-790282

**Switzerland** ■ 055-254-22-11

**UK** ■ 01293-422-911

**USA** ■ 800-426-8157



Sample & Assay Technologies