

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

## Human Antiviral Response

Cat. no. 330231 PAHS-122ZR

For pathway expression analysis

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

### Description

The Human Antiviral Response RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 key genes involved in the innate antiviral immune response. Three different families of pattern recognition receptors (PRRs) (toll-like (TLRs), Nod-like (NLRs), and RIG-I-like receptors) initiate innate immunity, the inborn general host response to common pathogens such as viruses. These receptors recognize and bind viral DNA and RNA, activating downstream signaling to induce the expression of inflammatory cytokines including alpha and beta interferons. Alpha and beta interferons mediate type-I interferon signaling that activates dendritic and natural killer cells as well as the adaptive immune response. Some viral nucleic acids bind to multiple PRRs, and each immune cell type expresses a specific set of PRRs. This array contains the receptors and signaling effectors for TLRs, NLRs and RIG-I-like receptors, the genes responsive to these pathways, and the genes involved in type-I interferon signaling as well as downstream interferon-stimulated genes (ISGs). The results of this array allow you to study the interactions of these innate immune signaling networks with a specific viral infection. Using real-time PCR, your research study can easily and reliably analyze the expression of a focused panel of genes involved in innate immunity with this array.

For further details, consult the *RT<sup>2</sup> Profiler PCR Array Handbook*.

### Shipping and storage

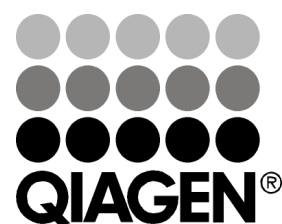
RT<sup>2</sup> Profiler PCR Arrays in the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

For long term storage, keep plates at –20°C.

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**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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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	Hs.281898	NM_004833	AIM2	Absent in melanoma 2
A02	Hs.660143	NM_021822	APOBEC3G	Apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3G
A03	Hs.486063	NM_004849	ATG5	ATG5 autophagy related 5 homolog (S. cerevisiae)
A04	Hs.708030	NM_022461	AZI2	5-azacytidine induced 2
A05	Hs.694071	NM_052813	CARD9	Caspase recruitment domain family, member 9
A06	Hs.2490	NM_033292	CASP1	Caspase 1, apoptosis-related cysteine peptidase (interleukin 1, beta, convertase)
A07	Hs.5353	NM_001230	CASP10	Caspase 10, apoptosis-related cysteine peptidase
A08	Hs.599762	NM_001228	CASP8	Caspase 8, apoptosis-related cysteine peptidase
A09	Hs.514107	NM_002983	CCL3	Chemokine (C-C motif) ligand 3
A10	Hs.514821	NM_002985	CCL5	Chemokine (C-C motif) ligand 5
A11	Hs.472860	NM_001250	CD40	CD40 molecule, TNF receptor superfamily member 5
A12	Hs.838	NM_005191	CD80	CD80 molecule
B01	Hs.171182	NM_006889	CD86	CD86 molecule
B02	Hs.198998	NM_001278	CHUK	Conserved helix-loop-helix ubiquitous kinase
B03	Hs.520898	NM_001908	CTSB	Cathepsin B
B04	Hs.716407	NM_001912	CTSL1	Cathepsin L1
B05	Hs.181301	NM_004079	CTSS	Cathepsin S
B06	Hs.632586	NM_001565	CXCL10	Chemokine (C-X-C motif) ligand 10
B07	Hs.632592	NM_005409	CXCL11	Chemokine (C-X-C motif) ligand 11
B08	Hs.77367	NM_002416	CXCL9	Chemokine (C-X-C motif) ligand 9
B09	Hs.578973	NM_015247	CYLD	Cylindromatosis (turban tumor syndrome)
B10	Hs.6278	NM_015533	DAK	Dihydroxyacetone kinase 2 homolog (S. cerevisiae)
B11	Hs.380774	NM_001356	DDX3X	DEAD (Asp-Glu-Ala-Asp) box polypeptide 3, X-linked
B12	Hs.190622	NM_014314	DDX58	DEAD (Asp-Glu-Ala-Asp) box polypeptide 58
C01	Hs.55918	NM_024119	DHX58	DEXH (Asp-Glu-X-His) box polypeptide 58
C02	Hs.86131	NM_003824	FADD	Fas (TNFRSF6)-associated via death domain
C03	Hs.728789	NM_005252	FOS	FBJ murine osteosarcoma viral oncogene homolog
C04	Hs.525600	NM_001017963	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
C05	Hs.163173	NM_022168	IFIH1	Interferon induced with helicase C domain 1
C06	Hs.37026	NM_024013	IFNA1	Interferon, alpha 1
C07	Hs.211575	NM_000605	IFNA2	Interferon, alpha 2
C08	Hs.529400	NM_000629	IFNAR1	Interferon (alpha, beta and omega) receptor 1
C09	Hs.93177	NM_002176	IFNB1	Interferon, beta 1, fibroblast
C10	Hs.597664	NM_001556	IKBKB	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
C11	Hs.673	NM_000882	IL12A	Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35)
C12	Hs.674	NM_002187	IL12B	Interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)
D01	Hs.654378	NM_000585	IL15	Interleukin 15
D02	Hs.83077	NM_001562	IL18	Interleukin 18 (interferon-gamma-inducing factor)
D03	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
D04	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
D05	Hs.624	NM_000584	IL8	Interleukin 8
D06	Hs.522819	NM_001569	IRAK1	Interleukin-1 receptor-associated kinase 1
D07	Hs.75254	NM_001571	IRF3	Interferon regulatory factor 3
D08	Hs.521181	NM_001098629	IRF5	Interferon regulatory factor 5
D09	Hs.166120	NM_001572	IRF7	Interferon regulatory factor 7
D10	Hs.458485	NM_005101	ISG15	ISG15 ubiquitin-like modifier
D11	Hs.714791	NM_002228	JUN	Jun proto-oncogene
D12	Hs.145442	NM_002755	MAP2K1	Mitogen-activated protein kinase kinase 1
E01	Hs.514012	NM_002756	MAP2K3	Mitogen-activated protein kinase kinase 3
E02	Hs.657756	NM_005921	MAP3K1	Mitogen-activated protein kinase kinase kinase 1
E03	Hs.644143	NM_003188	MAP3K7	Mitogen-activated protein kinase kinase kinase 7
E04	Hs.431850	NM_002745	MAPK1	Mitogen-activated protein kinase 1
E05	Hs.485233	NM_001315	MAPK14	Mitogen-activated protein kinase 14
E06	Hs.861	NM_002746	MAPK3	Mitogen-activated protein kinase 3
E07	Hs.138211	NM_002750	MAPK8	Mitogen-activated protein kinase 8

Position	UniGene	GenBank	Symbol	Description
E08	Hs.570362	NM_020746	MAVS	Mitochondrial antiviral signaling protein
E09	Hs.632221	NM_000243	MEFV	Mediterranean fever
E10	Hs.517307	NM_002462	MX1	Myxovirus (influenza virus) resistance 1, interferon-inducible protein p78 (mouse)
E11	Hs.82116	NM_002468	MYD88	Myeloid differentiation primary response gene (88)
E12	Hs.654408	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
F01	Hs.81328	NM_020529	NFKBIA	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
F02	Hs.159483	NM_183395	NLRP3	NLR family, pyrin domain containing 3
F03	Hs.592072	NM_022162	NOD2	Nucleotide-binding oligomerization domain containing 2
F04	Hs.414332	NM_002535	OAS2	2'-5'-oligoadenylate synthetase 2, 69/71kDa
F05	Hs.465849	NM_006221	PIN1	Peptidylprolyl cis/trans isomerase, NIMA-interacting 1
F06	Hs.129758	NM_003978	PSTPIP1	Proline-serine-threonine phosphatase interacting protein 1
F07	Hs.499094	NM_013258	PYCARD	PYD and CARD domain containing
F08	Hs.58314	NM_152901	PYDC1	PYD (pyrin domain) containing 1
F09	Hs.502875	NM_021975	RELA	V-rel reticuloendotheliosis viral oncogene homolog A (avian)
F10	Hs.519842	NM_003804	RIPK1	Receptor (TNFRSF)-interacting serine-threonine kinase 1
F11	Hs.313	NM_000582	SPP1	Secreted phosphoprotein 1
F12	Hs.642990	NM_007315	STAT1	Signal transducer and activator of transcription 1, 91kDa
G01	Hs.281902	NM_006704	SUGT1	SGT1, suppressor of G2 allele of SKP1 ( <i>S. cerevisiae</i> )
G02	Hs.505874	NM_013254	TBK1	TANK-binding kinase 1
G03	Hs.29344	NM_182919	TICAM1	Toll-like receptor adaptor molecule 1
G04	Hs.657724	NM_003265	TLR3	Toll-like receptor 3
G05	Hs.659215	NM_016562	TLR7	Toll-like receptor 7
G06	Hs.660543	NM_138636	TLR8	Toll-like receptor 8
G07	Hs.87968	NM_017442	TLR9	Toll-like receptor 9
G08	Hs.241570	NM_000594	TNF	Tumor necrosis factor
G09	Hs.460996	NM_003789	TRADD	TNFRSF1A-associated via death domain
G10	Hs.510528	NM_003300	TRAF3	TNF receptor-associated factor 3
G11	Hs.591983	NM_004620	TRAF6	TNF receptor-associated factor 6
G12	Hs.528952	NM_005082	TRIM25	Tripartite motif containing 25
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 ROX™ 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.

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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.

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