RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Human Toll-Like Receptor Signaling Pathway

Cat. no. 330231 PAHS-018ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Human Toll-Like Receptor (TLR) Signaling Pathway RT² Profiler PCR Array profiles the expression of 84 genes central to TLR-mediated signal transduction and innate immunity. The TLR family of pattern recognition receptors (PRRs) detects a wide range of bacteria, viruses, fungi and parasites via pathogen-associated molecular patterns (PAMPs). Each receptor binds to specific ligands, initiates a tailored innate immune response to the specific class of pathogen, and activates the adaptive immune response. For example, TLR4 recognizes bacterial lipopolysaccharide (LPS) or endotoxin, the compound which causes septic shock during blood-borne infection. The receptors act alone or as heterodimers, interacting with adaptor proteins to initiate MyD88 or TICAM1 (TRIF)-dependent responses. These responses initiate signaling cascades primarily through NFκB, which activates downstream JNK/p38 signaling or cytokine secretion. Dysregulation of these signaling pathways has severe consequences, and causes many autoimmune diseases and chronic pathological inflammation. This array includes members of the TLR signaling family as well as adaptor and effector proteins. Members of the NFκB, JNK/p38, IRF and JAK/STAT signaling pathways downstream of TLR activation are also included. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to TLR-mediated signal transduction with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² 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. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

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

Note: Ensure that you have the correct RT² 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 (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	BTK	CASP8	CCL2	CD14	CD180	CD80	CD86	CHUK	CLEC4E	CSF2	CSF3	CXCL10
B	ECSIT	EIF2AK2	ELK1	FADD	FOS	HMGB1	HRAS	HSPA1A	HSPD1	IFNA1	IFNB1	IFNG
C	IKBKB	IL10	IL12A	IL1A	IL1B	IL2	IL6	IL8	IRAK1	IRAK2	IRAK4	IRF1
D	IRF3	JUN	LTA	LY86	LY96	MAP2K3	MAP2K4	MAP3K1	MAP3K7	MAP4K4	MAPK8	MAPK8IP3
E	MYD88	NFKB1	NFKB2	NFKBIA	NFKBIL1	NFRKB	NR2C2	PELI1	PPARA	PRKRA	PTGS2	REL
F	RELA	RIPK2	SARM1	SIGIRR	TAB1	TBK1	TICAM1	TICAM2	TIRAP	TLR1	TLR10	TLR2
G	TLR3	TLR4	TLR5	TLR6	TLR7	TLR8	TLR9	TNF	TNFRSF1A	TOLLIP	TRAF6	UBE2N
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.159494	NM_000061	BTK	Bruton agammaglobulinemia tyrosine kinase
A02	Hs.599762	NM_001228	CASP8	Caspase 8, apoptosis-related cysteine peptidase
A03	Hs.303649	NM_002982	CCL2	Chemokine (C-C motif) ligand 2
A04	Hs.163867	NM_000591	CD14	CD14 molecule
A05	Hs.87205	NM_005582	CD180	CD180 molecule
A06	Hs.838	NM_005191	CD80	CD80 molecule
A07	Hs.171182	NM_006889	CD86	CD86 molecule
A08	Hs.198998	NM_001278	CHUK	Conserved helix-loop-helix ubiquitous kinase
A09	Hs.236516	NM_014358	CLEC4E	C-type lectin domain family 4, member E
A10	Hs.1349	NM_000758	CSF2	Colony stimulating factor 2 (granulocyte-macrophage)
A11	Hs.2233	NM_000759	CSF3	Colony stimulating factor 3 (granulocyte)
A12	Hs.632586	NM_001565	CXCL10	Chemokine (C-X-C motif) ligand 10
B01	Hs.515146	NM_016581	ECSIT	ECSIT homolog (Drosophila)
B02	Hs.131431	NM_002759	EIF2AK2	Eukaryotic translation initiation factor 2-alpha kinase 2
B03	Hs.181128	NM_005229	ELK1	ELK1, member of ETS oncogene family
B04	Hs.86131	NM_003824	FADD	Fas (TNFRSF6)-associated via death domain
B05	Hs.728789	NM_005252	FOS	FBJ murine osteosarcoma viral oncogene homolog
B06	Hs.593339	NM_002128	HMGB1	High mobility group box 1
B07	Hs.37003	NM_005343	HRAS	V-Ha-ras Harvey rat sarcoma viral oncogene homolog
B08	Hs.728810	NM_005345	HSPA1A	Heat shock 70kDa protein 1A
B09	Hs.595053	NM_002156	HSPD1	Heat shock 60kDa protein 1 (chaperonin)
B10	Hs.37026	NM_024013	IFNA1	Interferon, alpha 1
B11	Hs.93177	NM_002176	IFNB1	Interferon, beta 1, fibroblast
B12	Hs.856	NM_000619	IFNG	Interferon, gamma
C01	Hs.597664	NM_001556	IKBKB	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
C02	Hs.193717	NM_000572	IL10	Interleukin 10
C03	Hs.673	NM_000882	IL12A	Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35)
C04	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
C05	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
C06	Hs.89679	NM_000586	IL2	Interleukin 2
C07	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
C08	Hs.624	NM_000584	IL8	Interleukin 8
C09	Hs.522819	NM_001569	IRAK1	Interleukin-1 receptor-associated kinase 1
C10	Hs.449207	NM_001570	IRAK2	Interleukin-1 receptor-associated kinase 2
C11	Hs.138499	NM_016123	IRAK4	Interleukin-1 receptor-associated kinase 4
C12	Hs.436061	NM_002198	IRF1	Interferon regulatory factor 1
D01	Hs.75254	NM_001571	IRF3	Interferon regulatory factor 3
D02	Hs.714791	NM_002228	JUN	Jun proto-oncogene
D03	Hs.36	NM_000595	LTA	Lymphotoxin alpha (TNF superfamily, member 1)
D04	Hs.653138	NM_004271	LY86	Lymphocyte antigen 86
D05	Hs.660766	NM_015364	LY96	Lymphocyte antigen 96
D06	Hs.514012	NM_002756	MAP2K3	Mitogen-activated protein kinase kinase 3
D07	Hs.514681	NM_003010	MAP2K4	Mitogen-activated protein kinase kinase 4
D08	Hs.657756	NM_005921	MAP3K1	Mitogen-activated protein kinase kinase kinase 1

Position	UniGene	GenBank	Symbol	Description
D09	Hs.644143	NM_003188	MAP3K7	Mitogen-activated protein kinase kinase kinase 7
D10	Hs.431550	NM_004834	MAP4K4	Mitogen-activated protein kinase kinase kinase kinase 4
D11	Hs.138211	NM_002750	MAPK8	Mitogen-activated protein kinase 8
D12	Hs.207763	NM_015133	MAPK8IP3	Mitogen-activated protein kinase 8 interacting protein 3
E01	Hs.82116	NM_002468	MYD88	Myeloid differentiation primary response gene (88)
E02	Hs.654408	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E03	Hs.73090	NM_002502	NFKB2	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 2 (p49/p100)
E04	Hs.81328	NM_020529	NFKBIA	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
E05	Hs.2764	NM_005007	NFKBIL1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor-like 1
E06	Hs.530539	NM_006165	NFRKB	Nuclear factor related to kappaB binding protein
E07	Hs.591667	NM_003298	NR2C2	Nuclear receptor subfamily 2, group C, member 2
E08	Hs.7886	NM_020651	PELI1	Pellino homolog 1 (Drosophila)
E09	Hs.103110	NM_005036	PPARA	Peroxisome proliferator-activated receptor alpha
E10	Hs.570274	NM_003690	PRKRA	Protein kinase, interferon-inducible double stranded RNA dependent activator
E11	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
E12	Hs.631886	NM_002908	REL	V-rel reticuloendotheliosis viral oncogene homolog (avian)
F01	Hs.502875	NM_021975	RELA	V-rel reticuloendotheliosis viral oncogene homolog A (avian)
F02	Hs.103755	NM_003821	RIPK2	Receptor-interacting serine-threonine kinase 2
F03	Hs.532781	NM_015077	SARM1	Sterile alpha and TIR motif containing 1
F04	Hs.501624	NM_021805	SIGIRR	Single immunoglobulin and toll-interleukin 1 receptor (TIR) domain
F05	Hs.507681	NM_006116	TAB1	TGF-beta activated kinase 1/MAP3K7 binding protein 1
F06	Hs.505874	NM_013254	TBK1	TANK-binding kinase 1
F07	Hs.29344	NM_182919	TICAM1	Toll-like receptor adaptor molecule 1
F08	Hs.710895	NM_021649	TICAM2	Toll-like receptor adaptor molecule 2
F09	Hs.537126	NM_001039661	TIRAP	Toll-interleukin 1 receptor (TIR) domain containing adaptor protein
F10	Hs.654532	NM_003263	TLR1	Toll-like receptor 1
F11	Hs.120551	NM_030956	TLR10	Toll-like receptor 10
F12	Hs.519033	NM_003264	TLR2	Toll-like receptor 2
G01	Hs.657724	NM_003265	TLR3	Toll-like receptor 3
G02	Hs.174312	NM_138554	TLR4	Toll-like receptor 4
G03	Hs.604542	NM_003268	TLR5	Toll-like receptor 5
G04	Hs.662185	NM_006068	TLR6	Toll-like receptor 6
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.279594	NM_001065	TNFRSF1A	Tumor necrosis factor receptor superfamily, member 1A
G10	Hs.368527	NM_019009	TOLLIP	Toll interacting protein
G11	Hs.591983	NM_004620	TRAF6	TNF receptor-associated factor 6
G12	Hs.524630	NM_003348	UBE2N	Ubiquitin-conjugating enzyme E2N
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, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT2 SYBR® Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² 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
RT² 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
RT² 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.

RT² 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 or can be requested from QIAGEN Technical Services or your local distributor.

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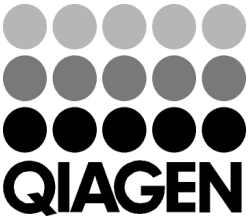

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