

RT² Profiler PCR Array (Rotor-Gene® Format)

Zebrafish Toll-Like Receptor Signaling

Cat. no. 330231 PAZF-018ZR

For pathway expression analysis

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

Description

The Zebrafish 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 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 RT² Profiler PCR Array format for your real-time cyclers (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™ (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: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
1	Dr.83181	XM_691995	btik	Bruton agammaglobulinemia tyrosine kinase
2	Dr.10334	NM_131510	casp8	Caspase 8, apoptosis-related cysteine peptidase
3	N/A	XM_001338104	ccl39.6	C-C motif chemokine 2-like
4	N/A	XM_009301826	cd180	CD180 molecule
5	Dr.92473	NM_001145246	cd40	CD40 antigen
6	N/A	NM_001308063	cd80/86	Cluster of Differentiation 80/86
7	Dr.14012	NM_200317	chuk	Conserved helix-loop-helix ubiquitous kinase
8	Dr.155031	NM_001145242	csf3a	Colony stimulating factor 3 (granulocyte) a
9	Dr.115041	XM_001339271	cxcl11.1	Chemokine (C-X-C motif) ligand 11 like
10	Dr.112992	XM_001342570	cxcl8a	Interleukin 8
11	Dr.105286	NM_001242938	ecsit	ECSIT homolog (Drosophila)
12	Dr.143197	NM_001114470	eif2ak2	Eukaryotic translation initiation factor 2-alpha kinase 2
13	Dr.85916	XM_691202	elk1	ELK1, member of ETS oncogene family
14	Dr.94478	XM_001923858	fadd	Fas (tnfrsf6)-associated via death domain
15	Dr.12986	NM_205569	fosab	V-fos FBJ murine osteosarcoma viral oncogene homolog
16	Dr.158952	NM_199555	hmgbl1a	High-mobility group box 1a
17	Dr.8916	NM_001020629	hrasb	-Ha-ras Harvey rat sarcoma viral oncogene homolog b
18	Dr.114305	NM_131397	hsp70.3	Heat shock cognate 70-kd protein, tandem duplicate 3
19	Dr.75320	NM_181330	hspd1	Heat shock 60kD protein 1 (chaperonin)
20	Dr.90633	NM_212864	ifng1	Interferon, gamma 1-2
21	Dr.85981	NM_207640	ifnphi1	Interferon phi 1
22	Dr.143188	NM_001111083	ifnphi3	Interferon phi 3
23	Dr.101105	NM_001123265	ikbkb	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
24	Dr.135567	NM_001020785	il10	Interleukin 10
25	Dr.91624	NM_001077625	il10ra	Cytokine receptor family member b7
26	Dr.162019	NM_001007107	il12a	Interleukin 12a
27	Dr.135198	NM_001007108	il12ba	Interleukin 12Ba (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)
28	Dr.30443	NM_212844	il1b	Interleukin 1, beta
29	Dr.162566	NM_001261449	il6	Interleukin 6 (interferon, beta 2)
30	Dr.79642	XM_005166703	irak1	Interleukin-1 receptor-associated kinase 1
31	Dr.81680	NM_200163	irak4	Interleukin-1 receptor-associated kinase 4
32	Dr.81011	NM_001040352	irf1a	Interferon regulatory factor 1
33	Dr.117120	NM_001143904	irf3	Interferon regulatory factor 3
34	Dr.82280	NM_200677	irf7	Interferon regulatory factor 7
35	Dr.1064	NM_199987	jun	Jun proto-oncogene
36	Dr.94014	NM_001024821	lta	Lymphotoxin alpha (TNF superfamily, member 1)
37	N/A	NM_001310488	ly86	Lymphocyte antigen 86
38	Dr.82506	NM_205736	map2k4a	Mitogen-activated protein kinase kinase 4a

Position	UniGene	GenBank	Symbol	Description
39	Dr.150491	NM_131724	map2k6	Mitogen-activated protein kinase kinase 6
40	Dr.135319	XM_005155507	map3k1	Mitogen-activated protein kinase kinase kinase 1, E3 ubiquitin protein ligase
41	Dr.80386	NM_001020750	map3k7	Mitogen activated protein kinase kinase kinase 7
42	Dr.60004	XM_009298281	map4k4	Mitogen-activated protein kinase kinase kinase kinase 4
43	Dr.149022	NM_001110389	mapk8a	Mitogen-activated protein kinase 8a
44	N/A	NM_001302244	mapk8ip3	Mitogen-activated protein kinase 8 interacting protein 3
45	Dr.134592	NM_212814	myd88	Myeloid differentiation primary response gene (88)
46	Dr.47468	XM_003199975	nfkb1	NF-kB1 precursor protein
47	Dr.117553	NM_001001840	nfkb2	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 2, p49/p100
48	Dr.79912	NM_213184	nfkbiaa	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha a
49	N/A	XM_005155451	nfkbi1l	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor-like 1
50	Dr.26668	NM_001243035	nfrkb	Wu:fi86h10
51	Dr.160181	NM_001123294	nr2c2	Nuclear receptor subfamily 2, group C, member 2
52	N/A	XM_005160186	pel1a	Pellino homolog 1a (Drosophila)
53	Dr.88405	NM_001161333	pparaa	Peroxisome proliferator-activated receptor alpha a
54	Dr.86625	NM_001089361	prkra	Zgc:162619
55	Dr.113864	NM_153657	ptgs2a	Prostaglandin-endoperoxide synthase 2a
56	Dr.86023	NM_001001841	rel	V-rel reticuloendotheliosis viral oncogene homolog
57	Dr.84126	NM_001001839	rela	V-rel reticuloendotheliosis viral oncogene homolog A
58	Dr.103967	NM_001043350	ripk1l	Receptor (TNFRSF)-interacting serine-threonine kinase 1, like
59	Dr.150902	NM_194411	ripk2	Receptor-interacting serine-threonine kinase 2
60	Dr.84799	NM_001130596	sarm1	Sterile alpha and TIR motif containing 1
61	Dr.85895	NM_001098250	sigirr	Single immunoglobulin and toll-interleukin 1 receptor (TIR) domain
62	Dr.140963	XM_002662240	tab1	TGF-beta activated kinase 1/MAP3K7 binding protein 1
63	Dr.82175	NM_001009900	tab2	TGF-beta activated kinase 1/MAP3K7 binding protein 2
64	Dr.82024	NM_001044748	tbk1	TANK-binding kinase 1
65	Dr.87438	XM_002667112	tirap	Toll-interleukin 1 receptor (TIR) domain containing adaptor protein
66	Dr.89709	NM_001130593	tlr1	Toll-like receptor 1
67	Dr.30180	NM_212812	tlr2	Toll-like receptor 2
68	Dr.82491	NM_001013269	tlr3	Toll-like receptor 3
69	N/A	XM_001919664	tlr4al	Similar to Toll-like receptor 4b
70	Dr.89708	NM_001131051	tlr4ba	Toll-like receptor 4b, duplicate a
71	Dr.89442	NM_212813	tlr4bb	Toll-like receptor 4b, duplicate b
72	Dr.89423	XM_001919017	tlr5a	Toll-like receptor 5a
73	Dr.89707	NM_001130595	tlr5b	Toll-like receptor 5b
74	Dr.156645	XM_003199261	tlr7	Toll-like receptor 7-like
75	Dr.89705	XM_001920559	tlr8a	Toll-like receptor 8a
76	Dr.89704	XM_017358120	tlr8b	Toll-like receptor 8b
77	Dr.89703	NM_001130594	tlr9	Toll-like receptor 9
78	Dr.89727	NM_212859	tnfa	Tumor necrosis factor a (TNF superfamily, member 2)

Position	UniGene	GenBank	Symbol	Description
79	Dr.94015	NM_001024447	tnfb	Tumor necrosis factor b (TNF superfamily, member 2)
80	Dr.27758	NM_213190	tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
81	Dr.79855	NM_207061	tollip	Toll interacting protein
82	Dr.81587	NM_001003513	traf3	TNF receptor-associated factor 3
83	Dr.74618	NM_001044752	traf6	TNF receptor-associated factor 6
84	Dr.16839	NM_213486	ube2na	Ubiquitin-conjugating enzyme E2Na
85	Dr.47173	NM_214784	acta1b	Actin, alpha 1b, skeletal muscle
86	Dr.51646	NM_001159768	b2m	Beta-2-microglobulin
87	Dr.77915	NM_212986	hppt1	Hypoxanthine phosphoribosyltransferase 1
88	Dr.150274	NM_201579	nono	Non-POU domain containing, octamer-binding
89	Dr.32450	NM_212784	rpl13a	Ribosomal protein L13a
90	N/A zebrafish	SA_00143	ZGDC	Zebrafish Genomic DNA Contamination
91	N/A	SA_00104	RTC	Reverse Transcription Control
92	N/A	SA_00104	RTC	Reverse Transcription Control
93	N/A	SA_00104	RTC	Reverse Transcription Control
94	N/A	SA_00103	PPC	Positive PCR Control
95	N/A	SA_00103	PPC	Positive PCR Control
96	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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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.

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.

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