

RT² Profiler PCR Array (Rotor-Gene® Format)

Dog Antibacterial Response

Cat. no. 330231 PAFD-148ZR

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 Dpg Antibacterial Response RT² Profiler PCR Array profiles the expression of 84 key genes involved in innate immune response to bacteria. 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 bacteria. The TLRs, NLRs, and other PRRs recognize bacterial pathogen-associated molecular patterns (PAMPs) including lipopolysaccharide (LPS), peptidoglycan, and flagella. PAMP-receptor binding then activates the innate immune response, initiates downstream signaling, and induces the expression of inflammatory cytokines. Antimicrobial peptides expressed and secreted by immune and epithelial cells also contribute to the innate immune response. They function as chemoattractants for immune cells, directly disrupt pathogen membranes, and seem to also activate some PRR signaling pathways. This array includes genes involved in bacterial-activated PRR signal transduction, encoding downstream effectors important for inflammation and apoptosis, and encoding immune cell-expressed antimicrobial peptides. The results of this array can yield insights into innate immune mechanisms to bacterial pathogens. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in antibacterial response 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	N/A	XM_005623876	AKT1	V-akt murine thymoma viral oncogene homolog 1
2	N/A	XM_003640205	APCS	Amyloid P component, serum
3	N/A	XM_547304	BCL10	B-cell CLL/lymphoma 10
4	Cfa.18376	NM_001080725	BIRC3	Baculoviral IAP repeat containing 3
5	N/A	XM_005635045	BPI	Bactericidal/permeability-increasing protein
6	Cfa.4552	NM_001003359	CAMP	Cathelicidin antimicrobial peptide
7	N/A	XM_005625116	CARD9	Caspase recruitment domain family, member 9
8	Cfa.3589	NM_001003125	CASP4	Caspase 4, apoptosis-related cysteine peptidase
9	Cfa.24658	NM_001048029	CASP8	Caspase 8, apoptosis-related cysteine peptidase
10	Cfa.36214	NM_001005251	CCL3	Chemokine (C-C motif) ligand 3
11	Cfa.21	NM_001003010	CCL5	Chemokine (C-C motif) ligand 5
12	Cfa.6175	XM_843653	CD14	CD14 molecule
13	N/A	XM_534990	CHUK	Conserved helix-loop-helix ubiquitous kinase
14	N/A	XM_545746	CRP	C-reactive protein, pentraxin-related
15	Cfa.23853	XM_845595	CTSG	Cathepsin G
16	Cfa.588	NM_001033996	CTSK	Cathepsin K
17	Cfa.3510	NM_001003200	CXCL8	Interleukin 8
18	Cfa.40704	NM_001100291	CYBB	Cytochrome b-245, beta polypeptide (chronic granulomatous disease)
19	N/A	XM_005637813	DMBT1	Deleted in malignant brain tumors 1
20	N/A	XM_005631743	FADD	Fas (TNFRSF6)-associated via death domain
21	N/A	XM_005623417	GCH1	GTP cyclohydrolase 1
22	N/A	XM_005623935	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
23	Cfa.47521	NM_001135787	IFNB1	Interferon, beta 1, fibroblast
24	N/A	XM_539954	IKBKB	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
25	Cfa.3843	NM_001003293	IL12A	Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35)
26	Cfa.3651	NM_001003292	IL12B	Interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)
27	Cfa.40	NM_001003169	IL18	Interleukin 18 (interferon-gamma-inducing factor)
28	Cfa.33592	NM_001037971	IL1B	Interleukin 1, beta
29	Cfa.3528	NM_001003301	IL6	Interleukin 6 (interferon, beta 2)
30	N/A	XM_549367	IRAK1	Interleukin-1 receptor-associated kinase 1
31	N/A	XM_005625657	IRAK3	Interleukin-1 receptor-associated kinase 3
32	N/A	XM_005628408	IRF5	Interferon regulatory factor 5
33	N/A	XM_540526	IRF7	Similar to Interferon regulatory factor 7 (IRF-7)
34	N/A	XM_005620245	JUN	Jun proto-oncogene
35	N/A	XM_542993	LBP	Lipopolysaccharide binding protein
36	N/A	XM_548441	LCN2	Lipocalin 2
37	Cfa.17370	NM_001287076	LTF	Lactotransferrin
38	N/A	XM_848045	LY96	Lymphocyte antigen 96

Position	UniGene	GenBank	Symbol	Description
39	N/A	NM_001300876	LYZ	Lysozyme
40	N/A	XM_005615363	MALT1	Mucosa associated lymphoid tissue lymphoma translocation gene 1
41	Cfa.1354	NM_001048094	MAP2K1	Mitogen-activated protein kinase kinase 1
42	N/A	XM_546666	MAP2K3	Mitogen-activated protein kinase kinase 3
43	N/A	XM_014113234	MAP2K4	Mitogen-activated protein kinase kinase 4
44	N/A	XM_005617056	MAP3K8	Mitogen-activated protein kinase kinase kinase 8
45	Cfa.2796	NM_001110800	MAPK1	Mitogen-activated protein kinase 1
46	Cfa.2823	NM_001003206	MAPK14	Mitogen-activated protein kinase 14
47	Cfa.33452	NM_001252035	MAPK3	Mitogen-activated protein kinase 3
48	N/A	XM_534943	MAPK8	Mitogen-activated protein kinase 8
49	N/A	XM_547161	MEFV	Mediterranean fever
50	N/A	XM_847352	MPO	Myeloperoxidase
51	N/A	XM_534223	MYD88	Myeloid differentiation primary response gene (88)
52	Cfa.10766	NM_001003344	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
53	N/A	XM_537413	NFKBIA	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
54	N/A	XM_005619880	NLRP1	NLR family, pyrin domain containing 1
55	N/A	XM_005623148	NLRP3	NLR family, pyrin domain containing 3
56	Cfa.48412	XM_539499	NOD1	Nucleotide-binding oligomerization domain containing 1
57	Cfa.48442	NM_001287039	NOD2	Nucleotide-binding oligomerization domain-containing protein 2
58	N/A	XM_545208	PIK3CA	Phosphoinositide-3-kinase, catalytic, alpha polypeptide
59	Cfa.4502	XM_544363	PIK3R1	Phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
60	N/A	XM_542042	PRDX2	Peroxiredoxin 2
61	N/A	XM_849471	PSTPIP1	Similar to proline-serine-threonine phosphatase interacting protein 1
62	N/A	XM_547045	PYCARD	PYD and CARD domain containing
63	Cfa.40290	NM_001003274	RAC1	Ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1)
64	Cfa.41791	XM_540850	RELA	V-rel reticuloendotheliosis viral oncogene homolog A (avian)
65	N/A	XM_545317	RIPK1	Receptor (TNFRSF)-interacting serine-threonine kinase 1
66	N/A	XM_005638101	RIPK2	Receptor-interacting serine-threonine kinase 2
67	Cfa.14639	NM_001013851	SLC11A1	Solute carrier family 11 (proton-coupled divalent metal ion transporters), member 1
68	Cfa.6128	NM_001113171	SLPI	Secretory leukocyte peptidase inhibitor
69	N/A	XM_005633939	SUGT1	SGT1, suppressor of G2 allele of SKP1 (<i>S. cerevisiae</i>)
70	N/A	XM_005625866	TAB1	TGF-beta activated kinase 1/MAP3K7 binding protein 1
71	N/A	XM_005633023	TICAM1	Toll-like receptor adaptor molecule 1
72	N/A	XM_846817	TIRAP	Toll-interleukin 1 receptor (TIR) domain containing adaptor protein
73	Cfa.47631	NM_001146143	TLR1	Toll-like receptor 1
74	Cfa.15802	NM_001005264	TLR2	Toll-like receptor 2
75	Cfa.118	NM_001002950	TLR4	Toll-like receptor 4
76	Cfa.48854	NM_001197176	TLR5	Toll-like receptor 5
77	Cfa.47631	XM_005618633	TLR6	Toll-like receptor 6

Position	UniGene	GenBank	Symbol	Description
78	Cfa.824	NM_001002998	TLR9	Toll-like receptor 9
79	Cfa.54	NM_001003244	TNF	Tumor necrosis factor
80	Cfa.3498	XM_849381	TNFRSF1A	Tumor necrosis factor receptor superfamily, member 1A
81	N/A	XM_005631321	TOLLIP	Toll interacting protein
82	N/A	XM_003432322	TRAF6	TNF receptor-associated factor 6, E3 ubiquitin protein ligase
83	Cfa.4543	XM_538165	XIAP	X-linked inhibitor of apoptosis
84	N/A	XM_014107314	ZBP1	Z-DNA binding protein 1
85	Cfa.17735	NM_001195845	ACTB	Actin, beta
86	N/A	XM_535458	B2M	Beta-2-microglobulin
87	Cfa.36213	NM_001003142	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
88	Cfa.4551	NM_001003357	HPRT1	Hypoxanthine phosphoribosyltransferase 1
89	N/A	XM_014109387	RPLP1	Ribosomal protein, large, P1
90	N/A	SA_00130	FGDC	Dog 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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