

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

## Rat Antibacterial Response

Cat. no. 330231 PARN-148ZR

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 Rat Antibacterial Response RT<sup>2</sup> 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 *RT<sup>2</sup> Profiler PCR Array Handbook*.

### Shipping and storage

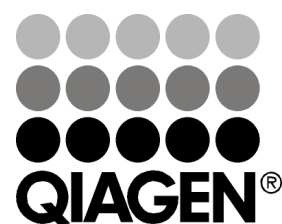
RT<sup>2</sup> Profiler PCR Arrays in the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

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	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A02	Rn.109007	NM_017170	Apcs	Amyloid P component, serum
A03	Rn.13007	NM_031328	Bcl10	B-cell CLL/lymphoma 10
A04	Rn.64578	NM_023987	Birc3	Baculoviral IAP repeat-containing 3
A05	Rn.109395	NM_001004079	Bpi	Bactericidal/permeability-increasing protein
A06	Rn.33146	NM_001100724	Camp	Cathelicidin antimicrobial peptide
A07	Rn.104526	NM_001106413	Card6	Caspase recruitment domain family, member 6
A08	Rn.64486	NM_022303	Card9	Caspase recruitment domain family, member 9
A09	Rn.37508	NM_012762	Casp1	Caspase 1
A10	Rn.54474	NM_022277	Casp8	Caspase 8
A11	Rn.10139	NM_013025	Ccl3	Chemokine (C-C motif) ligand 3
A12	Rn.37880	NM_053858	Ccl4	Chemokine (C-C motif) ligand 4
B01	Rn.8019	NM_031116	Ccl5	Chemokine (C-C motif) ligand 5
B02	Rn.42942	NM_021744	Cd14	CD14 molecule
B03	Rn.23019	NM_001107588	Chuk	Conserved helix-loop-helix ubiquitous kinase
B04	Rn.16463	NM_017096	Crp	C-reactive protein, pentraxin-related
B05	Rn.103332	NM_001106041	Ctsg	Cathepsin G
B06	Rn.5598	NM_031560	Ctsk	Cathepsin K
B07	Rn.10907	NM_030845	Cxcl1	Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
B08	Rn.10525	NM_138522	Cxcl3	Chemokine (C-X-C motif) ligand 3
B09	Rn.10107	XM_001080554	Dmbt1	Deleted in malignant brain tumors 1
B10	Rn.16183	NM_152937	Fadd	Fas (TNFRSF6)-associated via death domain
B11	Rn.119867	NM_175761	Hsp90aa1	Heat shock protein 90, alpha (cytosolic), class A member 1
B12	Rn.138105	NM_019127	Ifnb1	Interferon beta 1, fibroblast
C01	Rn.19222	NM_053355	Ikbbk	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
C02	Rn.207199	NM_053390	Il12a	Interleukin 12a
C03	Rn.48686	NM_022611	Il12b	Interleukin 12b
C04	Rn.11118	NM_019165	Il18	Interleukin 18
C05	Rn.9869	NM_031512	Il1b	Interleukin 1 beta
C06	Rn.9873	NM_012589	Il6	Interleukin 6
C07	Rn.22238	NM_001127555	Irak1	Interleukin-1 receptor-associated kinase 1
C08	Rn.147737	NM_001108101	Irak3	Interleukin-1 receptor-associated kinase 3
C09	Rn.203787	NM_001106586	Irf5	Interferon regulatory factor 5
C10	Rn.101159	NM_001033691	Irf7	Interferon regulatory factor 7
C11	Rn.93714	NM_021835	Jun	Jun oncogene
C12	Rn.48863	NM_017208	Lbp	Lipopolysaccharide binding protein
D01	Rn.11303	NM_130741	Lcn2	Lipocalin 2
D02	Rn.2283	NM_012771	Lyz2	Lysozyme 2
D03	Rn.5850	NM_031643	Map2k1	Mitogen activated protein kinase kinase 1
D04	Rn.100064	NM_001100674	Map2k3	Mitogen activated protein kinase kinase 3
D05	Rn.198875	NM_001030023	Map2k4	Mitogen activated protein kinase kinase 4
D06	Rn.24019	NM_001107920	Map3k7	Mitogen activated protein kinase kinase kinase 7
D07	Rn.17231	NM_001109976	Map3k7ip1	Mitogen-activated protein kinase kinase kinase 7 interacting protein 1
D08	Rn.34914	NM_053842	Mapk1	Mitogen activated protein kinase 1
D09	Rn.88085	NM_031020	Mapk14	Mitogen activated protein kinase 14
D10	Rn.2592	NM_017347	Mapk3	Mitogen activated protein kinase 3
D11	Rn.4090	XM_341399	Mapk8	Mitogen-activated protein kinase 8
D12	Rn.29105	NM_031634	Mefv	Mediterranean fever
E01	Rn.47782	NM_001107036	Mpo	Myeloperoxidase
E02	Rn.37341	NM_198130	Myd88	Myeloid differentiation primary response gene 88
E03	Rn.92423	XM_226742	Naip2	NLR family, apoptosis inhibitory protein 2
E04	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E05	Rn.12550	NM_001105720	Nfkbia	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
E06	Rn.144882	NM_001106707	Nlr4	NLR family, CARD domain containing 4
E07	Rn.12490	NM_001145755	Nlrp1a	NLR family, pyrin domain containing 1A
E08	Rn.214177	XM_220513	Nlrp3	NLR family, pyrin domain containing 3

Position	UniGene	GenBank	Symbol	Description
E09	Rn.218600	NM_001106172	Nad2	Nucleotide-binding oligomerization domain containing 2
E10	Rn.44193	NM_133399	Pik3ca	Phosphoinositide-3-kinase, catalytic, alpha polypeptide
E11	Rn.10599	NM_013005	Pik3r1	Phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
E12	Rn.2511	NM_017169	Prdx2	Peroxiredoxin 2
F01	Rn.47765	NM_001024264	Prtn3	Proteinase 3
F02	Rn.6937	NM_001106824	Pstpip1	Proline-serine-threonine phosphatase-interacting protein 1
F03	Rn.7817	NM_172322	Pycard	PYD and CARD domain containing
F04	Rn.29157	NM_134366	Rac1	Ras-related C3 botulinum toxin substrate 1
F05	Rn.19480	NM_199267	Rela	V-rel reticuloendotheliosis viral oncogene homolog A (avian)
F06	Rn.7572	NM_001107350	Ripk1	Receptor (TNFRSF)-interacting serine-threonine kinase 1
F07	Rn.102179	XM_342810	Ripk2	Receptor-interacting serine-threonine kinase 2
F08	Rn.105919	NM_001031658	Slc11a1	Solute carrier family 11 (proton-coupled divalent metal ion transporters), member 1
F09	Rn.18560	NM_053372	Slpi	Secretory leukocyte peptidase inhibitor
F10	Rn.101758	NM_001013051	Sugt1	SGT1, suppressor of G2 allele of SKP1 (S. cerevisiae)
F11	Rn.160921	NM_001108890	Ticam2	Toll-like receptor adaptor molecule 2
F12	N/A	XM_001055833	Tirap	Toll-interleukin 1 receptor (TIR) domain-containing adaptor protein
G01	Rn.107212	NM_001172120	Tlr1	Toll-like receptor 1
G02	Rn.46387	NM_198769	Tlr2	Toll-like receptor 2
G03	Rn.14534	NM_019178	Tlr4	Toll-like receptor 4
G04	Rn.198962	NM_001145828	Tlr5	Toll-like receptor 5
G05	Rn.163249	NM_207604	Tlr6	Toll-like receptor 6
G06	Rn.92495	NM_198131	Tlr9	Toll-like receptor 9
G07	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G08	Rn.11119	NM_013091	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
G09	Rn.137040	NM_001109668	Tollip	Toll interacting protein
G10	Rn.220435	NM_001107754	Traf6	Tnf receptor-associated factor 6
G11	Rn.91239	NM_022231	Xiap	X-linked inhibitor of apoptosis
G12	Rn.67419	XM_342594	Zbp1	Z-DNA binding protein 1
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.

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