

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

Human Antiviral Response

Cat. no. 330231 PAHS-122ZA

For pathway expression analysis

| Format | For use with the following real-time cyclers |
|--|--|
| RT ² 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 |
| RT ² Profiler PCR Array, Format C | Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block) |
| RT ² Profiler PCR Array, Format D | Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon [®] , DNA Engine Opticon 2; Stratagene Mx4000 [®] |
| RT ² Profiler PCR Array, Format E | Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™ |
| RT ² Profiler PCR Array, Format F | Roche [®] LightCycler [®] 480 (96-well block) |
| RT ² Profiler PCR Array, Format G | Roche LightCycler 480 (384-well block) |
| RT ² Profiler PCR Array, Format H | Fluidigm [®] BioMark™ |



Description

The Human Antiviral Response RT² 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 *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 | AIM2 | APOBEC3G | ATG5 | AZI2 | CARD9 | CASP1 | CASP10 | CASP8 | CCL3 | CCL5 | CD40 | CD80 |
| B | CD86 | CHUK | CTSB | CTSL1 | CTSS | CXCL10 | CXCL11 | CXCL9 | CYLD | DAK | DDX3X | DDX58 |
| C | DHX58 | FADD | FOS | HSP90AA1 | IFIH1 | IFNA1 | IFNA2 | IFNAR1 | IFNB1 | IKBKB | IL12A | IL12B |
| D | IL15 | IL18 | IL1B | IL6 | IL8 | IRAK1 | IRF3 | IRF5 | IRF7 | ISG15 | JUN | MAP2K1 |
| E | MAP2K3 | MAP3K1 | MAP3K7 | MAPK1 | MAPK14 | MAPK3 | MAPK8 | MAVS | MEFV | MX1 | MYD88 | NFKB1 |
| F | NFKBIA | NLRP3 | NOD2 | OAS2 | PIN1 | PSTPIP1 | PYCARD | PYDC1 | RELA | RIPK1 | SPP1 | STAT1 |
| G | SUGT1 | TBK1 | TICAM1 | TLR3 | TLR7 | TLR8 | TLR9 | TNF | TRADD | TRAF3 | TRAF6 | TRIM25 |
| 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.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 (<i>S. cerevisiae</i>) |
| 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 (<i>S. cerevisiae</i>) |
| 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 |

| Position | UniGene | GenBank | Symbol | Description |
|----------|-----------|--------------|---------|---|
| 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 |
| 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 (S. cerevisiae) |
| 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, 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 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 |
| RT ² 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 |
| RT ² 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.

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