

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

## Horse Cytokines & Chemokines

Cat. no. 330231 PAEC-150ZR

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 Horse Cytokines & Chemokines RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 key secreted proteins central to the immune response and other functions. Cytokines, small signaling proteins secreted primarily by immune cells, activate inter- and intracellular signaling during immune responses. Historically, cytokines were functionally separated into 2 families: lymphokines/interleukins and chemokines. All cytokines released by immune cells were called lymphokines/interleukins, whereas chemotactic cytokines were called chemokines. However, these family descriptions are no longer accurate because some growth factors and hormones also exhibit cellular effects very similar to cytokine family members. In addition to immune cells, many different cell types express cytokines to stimulate the immune response, inflammation, and other processes. The ultimate effect of a cytokine release depends on the activated cell type expressing the specific cytokine receptor. This array includes both families of common cytokines as well as growth factors and hormones with cytokine-like properties. The results of this array should augment understanding of immune response in a variety of cell types. A set of controls present on each array enables data analysis using the  $\Delta\Delta\text{CT}$  method of relative quantification as well as assessment of reverse transcription performance, genomic DNA contamination, and PCR performance. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of key cytokines and chemokines 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.

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

**Note:** Ensure that you have the correct RT<sup>2</sup> Profiler PCR Array format for your real-time cyclers (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                                                                                               | Assay     |
|----------|-----------|--------------|--------------|-----------------------------------------------------------------------------------------------------------|-----------|
| A01      | N/A       | XM_001493895 | BMP2         | Bone morphogenetic protein 2                                                                              | PPE01174A |
| A02      | Eca.12760 | NM_001163970 | BMP4         | Bone morphogenetic protein 4                                                                              | PPE00244A |
| A03      | Eca.12936 | XM_001493686 | BMP6         | Bone morphogenetic protein 6                                                                              | PPE00153A |
| A04      | Eca.17234 | NM_001195158 | BMP7         | Bone morphogenetic protein 7                                                                              | PPE00643A |
| A05      | Eca.12655 | NM_001081871 | CCL11        | Chemokine (C-C motif) ligand 11                                                                           | PPE00165A |
| A06      | Eca.12653 | NM_001163887 | CCL13        | Chemokine (C-C motif) ligand 13                                                                           | PPE00166A |
| A07      | Eca.17895 | NM_001081931 | CCL2         | Chemokine (C-C motif) ligand 2                                                                            | PPE00321A |
| A08      | Eca.471   | NM_001114941 | CCL3         | Chemokine (C-C motif) ligand 3                                                                            | PPE03114A |
| A09      | Eca.1046  | NM_001081863 | CCL5         | Chemokine (C-C motif) ligand 5                                                                            | PPE00144A |
| A10      | Eca.454   | NM_001081864 | CCL8         | Chemokine (C-C motif) ligand 8                                                                            | PPE00146B |
| A11      | Eca.426   | NM_001081860 | CSF3         | Colony stimulating factor 3 (granulocyte)                                                                 | PPE00141B |
| A12      | Eca.18382 | XM_001916175 | CXCL1        | Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)                            | PPE00308A |
| B01      | Eca.570   | NM_001114940 | CXCL10       | Chemokine (C-X-C motif) ligand 10                                                                         | PPE00914A |
| B02      | Eca.13036 | NM_001143955 | CXCL2        | Chemokine (C-X-C motif) ligand 2                                                                          | PPE07121A |
| B03      | Eca.451   | NM_001081886 | CXCL6        | Chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)                                      | PPE00196B |
| B04      | Eca.579   | NM_001130078 | CXCL9        | Chemokine (C-X-C motif) ligand 9                                                                          | PPE03123A |
| B05      | Eca.16925 | NM_001166039 | FASLG        | Fas ligand (TNF superfamily, member 6)                                                                    | PPE01415A |
| B06      | N/A       | XM_001490607 | GPI          | Glucose-6-phosphate isomerase                                                                             | PPE02916A |
| B07      | Eca.721   | NM_001081949 | IFNG         | Interferon, gamma                                                                                         | PPE00359A |
| B08      | Eca.13090 | NM_001082490 | IL10         | Interleukin 10                                                                                            | PPE00364A |
| B09      | Eca.12627 | NM_001082511 | IL12A        | Interleukin 12A (natural killer cell stimulatory factor 1, cytotoxic lymphocyte maturation factor 1, p35) | PPE00385A |
| B10      | Eca.12460 | NM_001082516 | IL12B        | Interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40) | PPE00392A |
| B11      | Eca.12480 | NM_001143791 | IL13         | Interleukin 13                                                                                            | PPE00302A |
| B12      | Eca.12733 | NM_001163986 | IL15         | Interleukin 15                                                                                            | PPE00254A |
| C01      | N/A       | XM_001915967 | IL16         | Interleukin 16                                                                                            | PPE05594A |
| C02      | Eca.12994 | NM_001143792 | IL17A        | Interleukin 17A                                                                                           | PPE00327A |
| C03      | Eca.3121  | NM_001082512 | IL18         | Interleukin 18 (interferon-gamma-inducing factor)                                                         | PPE00386A |
| C04      | Eca.13125 | NM_001082500 | IL1A         | Interleukin 1, alpha                                                                                      | PPE05043A |
| C05      | Eca.13475 | NM_001082526 | IL1B         | Interleukin 1, beta                                                                                       | PPE00403A |
| C06      | Eca.18515 | NM_001082525 | IL1RN        | Interleukin 1 receptor antagonist                                                                         | PPE00402A |
| C07      | Eca.12635 | NM_001085433 | IL2          | Interleukin 2                                                                                             | PPE00378A |
| C08      | Eca.3086  | NM_001082522 | IL23A        | Interleukin 23, alpha subunit p19                                                                         | PPE00398A |
| C09      | Eca.11253 | NM_001082519 | IL4          | Interleukin 4                                                                                             | PPE00395B |
| C10      | Eca.13068 | NM_001082499 | IL5          | Interleukin 5 (colony-stimulating factor, eosinophil)                                                     | PPE00374A |
| C11      | Eca.12956 | NM_001082496 | IL6          | Interleukin 6 (interferon, beta 2)                                                                        | PPE00372A |
| C12      | Eca.13119 | NM_001083951 | CXCL8        | Interleukin 8                                                                                             | PPE00415B |
| D01      | N/A       | XM_001489351 | TGFB2        | Transforming growth factor beta-2-like                                                                    | PPE07465A |
| D02      | N/A       | XM_001489611 | MIF          | Macrophage migration inhibitory factor-like                                                               | PPE08729A |
| D03      | N/A       | XM_001490011 | CD40LG       | CD40 ligand-like                                                                                          | PPE09081A |
| D04      | N/A       | XM_003364925 | IL20         | Interleukin-20-like                                                                                       | PPE09461A |
| D05      | N/A       | XM_001489749 | IL24         | Interleukin-24-like                                                                                       | PPE09478A |
| D06      | N/A       | XM_001503888 | CCL4         | C-C motif chemokine 4-like                                                                                | PPE10216A |
| D07      | N/A       | XM_001491333 | LTA          | Lymphotoxin-alpha-like                                                                                    | PPE10372A |
| D08      | N/A       | XM_001490122 | LTB          | Lymphotoxin-beta-like                                                                                     | PPE10387A |
| D09      | N/A       | XM_001491754 | IL22         | Interleukin-22-like                                                                                       | PPE10625A |
| D10      | N/A       | XM_001491850 | IL7          | Interleukin-7-like                                                                                        | PPE10686A |
| D11      | N/A       | XM_001498257 | THPO         | Thrombopoietin-like                                                                                       | PPE10700A |
| D12      | N/A       | XM_005609069 | NAMPT        | Nicotinamide phosphoribosyltransferase                                                                    | PPE10889A |
| E01      | N/A       | XM_001492329 | IL33         | Interleukin-33-like                                                                                       | PPE10971A |
| E02      | N/A       | XM_001915535 | TNFSF11      | Tumor necrosis factor ligand superfamily member 11-like                                                   | PPE11086A |
| E03      | N/A       | XM_005605079 | LOC100060619 | C-C motif chemokine 21-like                                                                               | PPE11214A |
| E04      | N/A       | XM_001493241 | CCL24        | C-C motif chemokine 24-like                                                                               | PPE11433A |

| Position | UniGene   | GenBank      | Symbol       | Description                                             | Assay     |
|----------|-----------|--------------|--------------|---------------------------------------------------------|-----------|
| E05      | N/A       | XM_001504756 | CXCL16       | C-X-C motif chemokine 16-like                           | PPE11502A |
| E06      | N/A       | XM_001494004 | CCL22        | C-C motif chemokine 22-like                             | PPE11782A |
| E07      | N/A       | XM_001504354 | IL9          | Interleukin-9-like                                      | PPE11891A |
| E08      | N/A       | XM_001503013 | IL21         | Interleukin-21-like                                     | PPE12229A |
| E09      | N/A       | XM_001495055 | OSM          | Oncostatin-M-like                                       | PPE12310A |
| E10      | N/A       | XM_001494088 | TNFSF10      | Tumor necrosis factor ligand superfamily member 10-like | PPE12431A |
| E11      | N/A       | XM_001495370 | LOC100064468 | Interferon alpha-2-like                                 | PPE12461A |
| E12      | N/A       | XM_001496320 | CD70         | CD70 antigen-like                                       | PPE12882A |
| F01      | N/A       | XM_001499705 | IL32         | Interleukin-32-like                                     | PPE12893A |
| F02      | N/A       | XM_001497052 | CCL25        | C-C motif chemokine 25-like                             | PPE13227A |
| F03      | N/A       | XM_001916727 | C5           | Complement C5-like                                      | PPE13479A |
| F04      | N/A       | XM_001498910 | IL17F        | Interleukin-17F-like                                    | PPE13907A |
| F05      | N/A       | XM_001501323 | CCL15        | C-C motif chemokine 15-like                             | PPE14709A |
| F06      | N/A       | XM_001501338 | CCL14        | C-C motif chemokine 14-like                             | PPE14712A |
| F07      | N/A       | XM_001503737 | NODAL        | Nodal homolog                                           | PPE15052A |
| F08      | N/A       | XM_001917910 | CCL16        | C-C motif chemokine 16-like                             | PPE15265A |
| F09      | N/A       | XM_005610548 | CSF1         | Colony stimulating factor 1 (macrophage)                | PPE15384A |
| F10      | N/A       | XM_003365488 | LIF          | Leukemia inhibitory factor-like                         | PPE15754A |
| F11      | N/A       | XM_005604289 | CCL28        | Chemokine (C-C motif) ligand 28                         | PPE15889A |
| F12      | N/A       | XM_003362616 | CNTF         | Ciliary neurotrophic factor-like                        | PPE16059A |
| G01      | N/A       | NM_001278930 | CXCL11       | Chemokine (C-X-C motif) ligand 11                       | PPE16069A |
| G02      | N/A       | XM_003365131 | CCL20        | C-C motif chemokine 20-like                             | PPE16070A |
| G03      | N/A       | XM_003364667 | CXCL13       | C-X-C motif chemokine 13-like                           | PPE16150B |
| G04      | N/A       | XM_003362822 | IL3          | Interleukin-3-like                                      | PPE16177A |
| G05      | N/A       | XM_003362700 | CCL26        | C-C motif chemokine 26-like                             | PPE16411A |
| G06      | N/A       | XM_003363979 | CCL19        | C-C motif chemokine 19-like                             | PPE16431A |
| G07      | N/A       | XM_003364585 | CCL17        | C-C motif chemokine 17-like                             | PPE16513A |
| G08      | Eca.12515 | NM_001081817 | MTN          | Myostatin                                               | PPE00068A |
| G09      | Eca.13019 | NM_001081819 | TNF          | Tumor necrosis factor                                   | PPE00070A |
| G10      | N/A       | XM_001916099 | TNFRSF11B    | Tumor necrosis factor receptor superfamily, member 11b  | PPE05252A |
| G11      | Eca.21712 | NM_001242445 | TNFSF13B     | Tumor necrosis factor (ligand) superfamily, member 13b  | PPE01124A |
| G12      | Eca.12648 | NM_001081821 | VEGFA        | Vascular endothelial growth factor A                    | PPE00074A |
| H01      | Eca.20971 | NM_001081838 | ACTB         | Actin, beta                                             | PPE00105A |
| H02      | Eca.13489 | NM_001082502 | B2M          | Beta-2-microglobulin                                    | PPE00377A |
| H03      | Eca.487   | NM_001163856 | GAPDH        | Glyceraldehyde-3-phosphate dehydrogenase                | PPE00120A |
| H04      | Eca.12727 | XM_005614512 | HPRT1        | Hypoxanthine phosphoribosyltransferase 1                | PPE00333A |
| H05      | N/A       | XM_001492042 | LOC100056766 | 60S ribosomal protein L32-like                          | PPE09859A |
| H06      | N/A horse | SA_00139     | EGDC         | Horse Genomic DNA Contamination                         | PPE16553A |
| H07      | N/A       | SA_00104     | RTC          | Reverse Transcription Control                           | PPX63340A |
| H08      | N/A       | SA_00104     | RTC          | Reverse Transcription Control                           | PPX63340A |
| H09      | N/A       | SA_00104     | RTC          | Reverse Transcription Control                           | PPX63340A |
| H10      | N/A       | SA_00103     | PPC          | Positive PCR Control                                    | PPX63339A |
| H11      | N/A       | SA_00103     | PPC          | Positive PCR Control                                    | PPX63339A |
| H12      | N/A       | SA_00103     | PPC          | Positive PCR Control                                    | PPX63339A |

## 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.

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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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