

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

## Mouse Protein Phosphatases

Cat. no. 330231 PAMM-045ZR

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 Mouse Protein Phosphatases RT<sup>2</sup> Profiler PCR Array profiles the gene expression of the 84 most important and well-studied phosphatases in the mammalian genome. By reversing the phosphorylation of key regulatory proteins mediated by protein kinases, phosphatases serve as a very important complement to kinases and attenuate activated signal transduction pathways. The gene classes on this array include both receptor and non-receptor tyrosine phosphatases, catalytic subunits of the three major protein phosphatase gene families, the dual specificity phosphatases, as well as cell cycle regulatory and other protein phosphatases. Alterations in phosphatase activity, including those caused by changes in gene expression, have been implicated in central nervous system and metabolic disorders, infectious diseases, and cancer. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of phosphatase genes 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.

**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      | Mm.359831 | NM_021330    | Acp1   | Acid phosphatase 1, soluble                                                         |
| A02      | Mm.45570  | NM_007387    | Acp2   | Acid phosphatase 2, lysosomal                                                       |
| A03      | Mm.17647  | NM_001080818 | Cdc14a | CDC14 cell division cycle 14 homolog A (S. cerevisiae)                              |
| A04      | Mm.25335  | NM_172587    | Cdc14b | CDC14 cell division cycle 14 homolog B (S. cerevisiae)                              |
| A05      | Mm.307103 | NM_007658    | Cdc25a | Cell division cycle 25 homolog A (S. pombe)                                         |
| A06      | Mm.38444  | NM_023117    | Cdc25b | Cell division cycle 25 homolog B (S. pombe)                                         |
| A07      | Mm.286602 | NM_009860    | Cdc25c | Cell division cycle 25 homolog C (S. pombe)                                         |
| A08      | Mm.272394 | NM_028222    | Cdkn3  | Cyclin-dependent kinase inhibitor 3                                                 |
| A09      | Mm.239041 | NM_013642    | Dusp1  | Dual specificity phosphatase 1                                                      |
| A10      | Mm.404024 | NM_022019    | Dusp10 | Dual specificity phosphatase 10                                                     |
| A11      | Mm.34365  | NM_023173    | Dusp12 | Dual specificity phosphatase 12                                                     |
| A12      | Mm.240885 | NM_019819    | Dusp14 | Dual specificity phosphatase 14                                                     |
| B01      | Mm.3994   | NM_001048054 | Dusp16 | Dual specificity phosphatase 16                                                     |
| B02      | Mm.289646 | NM_134068    | Dusp22 | Dual specificity phosphatase 22                                                     |
| B03      | Mm.33024  | NM_026725    | Dusp23 | Dual specificity phosphatase 23                                                     |
| B04      | Mm.23916  | NM_025869    | Dusp26 | Dual specificity phosphatase 26 (putative)                                          |
| B05      | Mm.196295 | NM_028207    | Dusp3  | Dual specificity phosphatase 3 (vaccinia virus phosphatase VH1-related)             |
| B06      | Mm.170276 | NM_176933    | Dusp4  | Dual specificity phosphatase 4                                                      |
| B07      | Mm.482424 | NM_001085390 | Dusp5  | Dual specificity phosphatase 5                                                      |
| B08      | Mm.1791   | NM_026268    | Dusp6  | Dual specificity phosphatase 6                                                      |
| B09      | Mm.275584 | NM_153459    | Dusp7  | Dual specificity phosphatase 7                                                      |
| B10      | Mm.39725  | NM_008748    | Dusp8  | Dual specificity phosphatase 8                                                      |
| B11      | Mm.16479  | NM_029352    | Dusp9  | Dual specificity phosphatase 9                                                      |
| B12      | Mm.337240 | NM_023343    | Ilkap  | Integrin-linked kinase-associated serine/threonine phosphatase 2C                   |
| C01      | Mm.331489 | NM_001033453 | Pdp1   | Pyruvate dehydrogenase phosphatase catalytic subunit 1                              |
| C02      | Mm.24115  | NM_133821    | Phlpp1 | PH domain and leucine rich repeat protein phosphatase 1                             |
| C03      | Mm.296779 | NM_011147    | Ppef1  | Protein phosphatase with EF hand calcium-binding domain 1                           |
| C04      | Mm.261045 | NM_008910    | Ppm1a  | Protein phosphatase 1A, magnesium dependent, alpha isoform                          |
| C05      | Mm.249695 | NM_011151    | Ppm1b  | Protein phosphatase 1B, magnesium dependent, beta isoform                           |
| C06      | Mm.45609  | NM_016910    | Ppm1d  | Protein phosphatase 1D magnesium-dependent, delta isoform                           |
| C07      | Mm.230296 | NM_176833    | Ppm1f  | Protein phosphatase 1F (PP2C domain containing)                                     |
| C08      | Mm.14501  | NM_008014    | Ppm1g  | Protein phosphatase 1G (formerly 2C), magnesium-dependent, gamma isoform            |
| C09      | Mm.1970   | NM_031868    | Ppp1ca | Protein phosphatase 1, catalytic subunit, alpha isoform                             |
| C10      | Mm.241931 | NM_172707    | Ppp1cb | Protein phosphatase 1, catalytic subunit, beta isoform                              |
| C11      | Mm.260288 | NM_019411    | Ppp2ca | Protein phosphatase 2 (formerly 2A), catalytic subunit, alpha isoform               |
| C12      | Mm.288765 | NM_017374    | Ppp2cb | Protein phosphatase 2 (formerly 2A), catalytic subunit, beta isoform                |
| D01      | Mm.331389 | NM_008913    | Ppp3ca | Protein phosphatase 3, catalytic subunit, alpha isoform                             |
| D02      | Mm.274432 | NM_008914    | Ppp3cb | Protein phosphatase 3, catalytic subunit, beta isoform                              |
| D03      | Mm.439683 | NM_008915    | Ppp3cc | Protein phosphatase 3, catalytic subunit, gamma isoform                             |
| D04      | Mm.41998  | NM_019674    | Ppp4c  | Protein phosphatase 4, catalytic subunit                                            |
| D05      | Mm.3294   | NM_011155    | Ppp5c  | Protein phosphatase 5, catalytic subunit                                            |
| D06      | Mm.245395 | NM_008960    | Pten   | Phosphatase and tensin homolog                                                      |
| D07      | Mm.374437 | NM_011200    | Ptp4a1 | Protein tyrosine phosphatase 4a1                                                    |
| D08      | Mm.193688 | NM_008974    | Ptp4a2 | Protein tyrosine phosphatase 4a2                                                    |
| D09      | Mm.390807 | NM_008975    | Ptp4a3 | Protein tyrosine phosphatase 4a3                                                    |
| D10      | Mm.241205 | NM_013935    | Ptpia  | Protein tyrosine phosphatase-like (proline instead of catalytic arginine), member a |
| D11      | Mm.277916 | NM_011201    | Ptpn1  | Protein tyrosine phosphatase, non-receptor type 1                                   |
| D12      | Mm.8681   | NM_011202    | Ptpn11 | Protein tyrosine phosphatase, non-receptor type 11                                  |
| E01      | Mm.319117 | NM_011203    | Ptpn12 | Protein tyrosine phosphatase, non-receptor type 12                                  |
| E02      | Mm.3414   | NM_011204    | Ptpn13 | Protein tyrosine phosphatase, non-receptor type 13                                  |
| E03      | Mm.4498   | NM_008976    | Ptpn14 | Protein tyrosine phosphatase, non-receptor type 14                                  |
| E04      | Mm.260433 | NM_008977    | Ptpn2  | Protein tyrosine phosphatase, non-receptor type 2                                   |
| E05      | Mm.4420   | NM_011877    | Ptpn21 | Protein tyrosine phosphatase, non-receptor type 21                                  |
| E06      | Mm.395    | NM_008979    | Ptpn22 | Protein tyrosine phosphatase, non-receptor type 22 (lymphoid)                       |
| E07      | Mm.335477 | NM_001081043 | Ptpn23 | Protein tyrosine phosphatase, non-receptor type 23                                  |
| E08      | Mm.246552 | NM_011207    | Ptpn3  | Protein tyrosine phosphatase, non-receptor type 3                                   |

| Position | UniGene   | GenBank      | Symbol   | Description                                                  |
|----------|-----------|--------------|----------|--------------------------------------------------------------|
| E09      | Mm.458796 | NM_019933    | Ptpn4    | Protein tyrosine phosphatase, non-receptor type 4            |
| E10      | Mm.4654   | NM_013643    | Ptpn5    | Protein tyrosine phosphatase, non-receptor type 5            |
| E11      | Mm.271799 | NM_013545    | Ptpn6    | Protein tyrosine phosphatase, non-receptor type 6            |
| E12      | Mm.258388 | NM_177081    | Ptpn7    | Protein tyrosine phosphatase, non-receptor type 7            |
| F01      | Mm.325643 | NM_019651    | Ptpn9    | Protein tyrosine phosphatase, non-receptor type 9            |
| F02      | Mm.224246 | NM_008980    | Ptpra    | Protein tyrosine phosphatase, receptor type, A               |
| F03      | Mm.37213  | NM_029928    | Ptprb    | Protein tyrosine phosphatase, receptor type, B               |
| F04      | Mm.391573 | NM_011210    | Ptprc    | Protein tyrosine phosphatase, receptor type, C               |
| F05      | Mm.184021 | NM_011211    | Ptprd    | Protein tyrosine phosphatase, receptor type, D               |
| F06      | Mm.945    | NM_011212    | Ptpre    | Protein tyrosine phosphatase, receptor type, E               |
| F07      | Mm.29855  | NM_011213    | Ptprf    | Protein tyrosine phosphatase, receptor type, F               |
| F08      | Mm.431266 | NM_008981    | Ptprg    | Protein tyrosine phosphatase, receptor type, G               |
| F09      | Mm.188925 | NM_207270    | Ptprh    | Protein tyrosine phosphatase, receptor type, H               |
| F10      | Mm.330393 | NM_008982    | Ptpri    | Protein tyrosine phosphatase, receptor type, I               |
| F11      | Mm.332303 | NM_008983    | Ptpri    | Protein tyrosine phosphatase, receptor type, K               |
| F12      | Mm.311809 | NM_008984    | Ptpri    | Protein tyrosine phosphatase, receptor type, M               |
| G01      | Mm.2902   | NM_008985    | Ptpri    | Protein tyrosine phosphatase, receptor type, N               |
| G02      | Mm.206054 | NM_011215    | Ptpri2   | Protein tyrosine phosphatase, receptor type, N polypeptide 2 |
| G03      | Mm.186361 | NM_011216    | Ptpri    | Protein tyrosine phosphatase, receptor type, O               |
| G04      | Mm.336316 | NM_011217    | Ptpri    | Protein tyrosine phosphatase, receptor type, R               |
| G05      | Mm.258771 | NM_011218    | Ptpri    | Protein tyrosine phosphatase, receptor type, S               |
| G06      | Mm.235807 | NM_021464    | Ptpri    | Protein tyrosine phosphatase, receptor type, T               |
| G07      | Mm.4860   | NM_011214    | Ptpri    | Protein tyrosine phosphatase, receptor type, U               |
| G08      | Mm.41639  | NM_001081306 | Ptpri1   | Protein tyrosine phosphatase, receptor type Z, polypeptide 1 |
| G09      | Mm.389682 | NM_198109    | Ssh1     | Slingshot homolog 1 (Drosophila)                             |
| G10      | Mm.294770 | NM_026899    | Ssu72    | Ssu72 RNA polymerase II CTD phosphatase homolog (yeast)      |
| G11      | Mm.29389  | NM_153533    | Tenc1    | Tensin like C1 domain-containing phosphatase                 |
| G12      | Mm.450553 | NM_199257    | Tple     | Transmembrane phosphatase with tensin homology               |
| H01      | Mm.328431 | NM_007393    | Actb     | Actin, beta                                                  |
| H02      | Mm.163    | NM_009735    | B2m      | Beta-2 microglobulin                                         |
| H03      | Mm.343110 | NM_008084    | Gapdh    | Glyceraldehyde-3-phosphate dehydrogenase                     |
| H04      | Mm.3317   | NM_010368    | Gusb     | Glucuronidase, beta                                          |
| H05      | Mm.2180   | NM_008302    | Hsp90ab1 | Heat shock protein 90 alpha (cytosolic), class B member 1    |
| H06      | N/A       | SA_00106     | MGDC     | Mouse 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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