

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

## Mouse Glucocorticoid Signaling

Cat. no. 330231 PAMM-154ZR

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 Glucocorticoid Signaling RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 key genes involved in signaling initiated by the glucocorticoid receptor. Secreted by the adrenal cortex, glucocorticoid hormones affect several biological processes, from inhibiting inflammation to maintaining normal blood glucose levels and more. Signaling occurs when the glucocorticoid receptor binds the cell-permeable hormones, causing nuclear translocation, interaction with other co-transcription factors (indicating a role of crosstalk with other pathways), and the activation or repression of target gene expression. The therapeutic use of glucocorticoids (such as the commonly used prednisone, dexamethasone, or hydrocortisone) helps treat various disorders including allergies, asthma, autoimmune diseases, dermatitis, leukemia, lymphomas, and rheumatoid arthritis. Their immunosuppressant activity also helps prevent acute transplant rejection and graft-versus-host disease. Resistance and side-effects (such as the susceptibility to infection and inhibition of tissue repair processes) limit the long-term use of these drugs, but has spurred research into the development of safer glucocorticoid analogs. Examining glucocorticoid transcriptional responses could help provide a better understanding of their effects on biological processes in any target tissue. This array includes the glucocorticoid receptors and key co-transcription factors, but mostly target genes identified from studies simultaneously using both chromatin immunoprecipitation (ChIP) and gene expression in the two key responsive tissues: adipose and lung. A set of controls present on each array enables data analysis using the  $\Delta\Delta\text{CT}$  method of relative quantification, 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 genes involved in glucocorticoid signaling with this array.

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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.



## 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.276815 | NM_130895    | Adarb1  | Adenosine deaminase, RNA-specific, B1   |
| A02      | Mm.6949   | NM_133919    | Aff1    | AF4/FMR2 family, member 1   |
| A03      | Mm.29460  | NM_016895    | Ak2     | Adenylate kinase 2  |
| A04      | Mm.3238   | NM_009667    | Ampd3   | Adenosine monophosphate deaminase 3   |
| A05      | Mm.196189 | NM_020581    | Angptl4 | Angiopietin-like 4  |
| A06      | Mm.259702 | NM_013471    | Anxa4   | Annexin A4  |
| A07      | Mm.18625  | NM_007472    | Aqp1    | Aquaporin 1   |
| A08      | Mm.440357 | NM_023598    | Arid5b  | AT rich interactive domain 5B (MRF1-like)   |
| A09      | Mm.222206 | NM_023066    | Asph    | Aspartate-beta-hydroxylase  |
| A10      | Mm.641    | NM_009716    | Atf4    | Activating transcription factor 4   |
| A11      | Mm.347398 | NM_009744    | Bcl6    | B-cell leukemia/lymphoma 6  |
| A12      | Mm.335020 | NM_028472    | Bmper   | BMP-binding endothelial regulator   |
| B01      | Mm.4642   | NM_007588    | Calcr   | Calcitonin receptor   |
| B02      | Mm.349667 | NM_007678    | Cebpa   | CCAAT/enhancer binding protein (C/EBP), alpha                                       |
| B03      | Mm.439656 | NM_009883    | Cebpb   | CCAAT/enhancer binding protein (C/EBP), beta  |
| B04      | Mm.181021 | NM_009932    | Col4a2  | Collagen, type IV, alpha 2  |
| B05      | Mm.453295 | NM_133828    | Creb1   | CAMP responsive element binding protein 1   |
| B06      | Mm.12407  | NM_013497    | Creb3   | CAMP responsive element binding protein 3   |
| B07      | Mm.299952 | NM_030080    | Creb3l4 | CAMP responsive element binding protein 3-like 4                                    |
| B08      | Mm.390287 | NM_010217    | Ctgf    | Connective tissue growth factor   |
| B09      | Mm.149403 | NM_007805    | Cyb561  | Cytochrome b-561  |
| B10      | Mm.21697  | NM_029083    | Ddit4   | DNA-damage-inducible transcript 4   |
| B11      | Mm.29362  | NM_001024474 | Diras2  | DIRAS family, GTP-binding RAS-like 2  |
| B12      | Mm.239041 | NM_013642    | Dusp1   | Dual specificity phosphatase 1  |
| C01      | Mm.14543  | NM_010104    | Edn1    | Endothelin 1  |
| C02      | Mm.18526  | NM_020578    | Ehd3    | EH-domain containing 3  |
| C03      | Mm.318841 | NM_133753    | Erff1   | ERBB receptor feedback inhibitor 1  |
| C04      | Mm.276405 | NM_010220    | Fkbp5   | FK506 binding protein 5   |
| C05      | Mm.24684  | NM_008037    | Fosl2   | Fos-like antigen 2  |
| C06      | Mm.281887 | NM_025638    | Gdgd1   | Glycerophosphodiester phosphodiesterase domain containing 1                         |
| C07      | Mm.89928  | NM_001003685 | Ghrhr   | Growth hormone releasing hormone receptor   |
| C08      | Mm.210745 | NM_008131    | Glul    | Glutamate-ammonia ligase (glutamine synthetase)                                     |
| C09      | Mm.19039  | NM_010324    | Got1    | Glutamate oxaloacetate transaminase 1, soluble                                      |
| C10      | Mm.22183  | NM_173371    | H6pd    | Hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)                          |
| C11      | Mm.5148   | NM_008216    | Hos2    | Hyaluronan synthase 2   |
| C12      | Mm.64579  | NM_144802    | Hnrpl   | Heterogeneous nuclear ribonucleoprotein L-like                                      |
| D01      | Mm.874    | NM_010548    | Il10    | Interleukin 10  |
| D02      | Mm.882    | NM_031167    | Il1rn   | Interleukin 1 receptor antagonist   |
| D03      | Mm.1019   | NM_031168    | Il6     | Interleukin 6   |
| D04      | Mm.2856   | NM_010559    | Il6ra   | Interleukin 6 receptor, alpha   |
| D05      | Mm.240473 | NM_021366    | Klf13   | Kruppel-like factor 13  |
| D06      | Mm.291595 | NM_010638    | Klf9    | Kruppel-like factor 9   |
| D07      | Mm.172    | NM_010728    | Lox     | Lysyl oxidase   |
| D08      | Mm.239655 | NM_008587    | Mertk   | C-mer proto-oncogene tyrosine kinase  |
| D09      | Mm.192991 | NM_013602    | Mt1     | Metallothionein 1   |
| D10      | Mm.147226 | NM_008630    | Mt2     | Metallothionein 2   |
| D11      | Mm.170515 | NM_010907    | Nfkbia  | Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha |
| D12      | Mm.129481 | NM_008173    | Nr3c1   | Nuclear receptor subfamily 3, group C, member 1                                     |
| E01      | Mm.29193  | NM_016688    | Pdcd7   | Programmed cell death 7   |
| E02      | Mm.4146   | NM_008809    | Pdgfrb  | Platelet derived growth factor receptor, beta polypeptide                           |
| E03      | Mm.331489 | NM_001033453 | Pdp1    | Pyruvate dehydrogenase phosphatase catalytic subunit 1                              |
| E04      | Mm.7373   | NM_011065    | Per1    | Period homolog 1 (Drosophila)   |
| E05      | Mm.482463 | NM_011066    | Per2    | Period homolog 2 (Drosophila)   |
| E06      | Mm.259333 | NM_001024955 | Pik3r1  | Phosphatidylinositol 3-kinase, regulatory subunit, polypeptide 1 (p85 alpha)        |
| E07      | Mm.212039 | NM_008875    | Pld1    | Phospholipase D1  |
| E08      | Mm.333798 | NM_024413    | Plekhf1 | Pleckstrin homology domain containing, family F (with FYVE domain) member 1         |

| Position | UniGene   | GenBank      | Symbol   | Description  |
|----------|-----------|--------------|----------|--|
| E09      | Mm.245261 | NM_198934    | Pou2f1   | POU domain, class 2, transcription factor 1                                |
| E10      | Mm.76683  | NM_011138    | Pou2f2   | POU domain, class 2, transcription factor 2                                |
| E11      | Mm.18517  | NM_009025    | Rasa3    | RAS p21 protein activator 3  |
| E12      | Mm.28262  | NM_009061    | Rgs2     | Regulator of G-protein signaling 2   |
| F01      | Mm.687    | NM_007483    | Rhob     | Ras homolog gene family, member B  |
| F02      | Mm.27467  | NM_023275    | Rhoj     | Ras homolog gene family, member J  |
| F03      | Mm.139418 | NM_001013370 | Sesn1    | Sestrin 1  |
| F04      | Mm.28405  | NM_011361    | Sgk1     | Serum/glucocorticoid regulated kinase 1                                    |
| F05      | Mm.7446   | NM_029415    | Slc10a6  | Solute carrier family 10 (sodium/bile acid cotransporter family), member 6 |
| F06      | Mm.35444  | NM_054087    | Slc19a2  | Solute carrier family 19 (thiamine transporter), member 2                  |
| F07      | Mm.42253  | NM_011396    | Slc22a5  | Solute carrier family 22 (organic cation transporter), member 5            |
| F08      | Mm.1541   | NM_009228    | Snta1    | Syntrophin, acidic 1   |
| F09      | Mm.20944  | NM_025367    | Sphk1    | Sphingosine kinase 1   |
| F10      | Mm.30     | NM_029035    | Spsb1    | SplA/ryanodine receptor domain and SOCS box containing 1                   |
| F11      | Mm.277403 | NM_011488    | Stat5a   | Signal transducer and activator of transcription 5A                        |
| F12      | Mm.34064  | NM_011489    | Stat5b   | Signal transducer and activator of transcription 5B                        |
| G01      | Mm.202966 | NM_030732    | Tbl1xr1  | Transducin (beta)-like 1X-linked receptor 1                                |
| G02      | Mm.1293   | NM_013693    | Tnf      | Tumor necrosis factor  |
| G03      | Mm.116683 | NM_009397    | Tnfrsf25 | Tumor necrosis factor, alpha-induced protein 3                             |
| G04      | Mm.485388 | NM_010286    | Tsc22d3  | TSC22 domain family, member 3  |
| G05      | Mm.272770 | NM_198092    | Usp2     | Ubiquitin specific peptidase 2   |
| G06      | Mm.301173 | NM_030180    | Usp54    | Ubiquitin specific peptidase 54  |
| G07      | Mm.245084 | NM_009504    | Vdr      | Vitamin D receptor   |
| G08      | Mm.4141   | NM_013703    | Vldlr    | Very low density lipoprotein receptor                                      |
| G09      | Mm.11223  | NM_011723    | Xdh      | Xanthine dehydrogenase   |
| G10      | Mm.62521  | NM_177643    | Zfp281   | Zinc finger protein 281  |
| G11      | Mm.389856 | NM_011756    | Zfp36    | Zinc finger protein 36   |
| G12      | Mm.436734 | NM_177263    | Zhx3     | Zinc fingers and homeoboxes 3  |
| 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.

| <b>Product</b>                                      | <b>Contents</b>  | <b>Cat. no.</b> |
|---|--|-----------------|
| RT <sup>2</sup> First Strand Kit (12)               | Enzymes and reagents for cDNA synthesis  | 330401          |
| RT <sup>2</sup> 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.

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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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