

# RT<sup>2</sup> Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

## Human cAMP / Calcium Signaling PathwayFinder

Cat. no. 330231 PAHS-066ZA

For pathway expression analysis

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



Sample & Assay Technologies

## Description

The Human cAMP/Ca<sup>2+</sup> PathwayFinder RT<sup>2</sup> Profiler PCR Array contains 84 target genes that are responsive to cAMP or calcium ion (Ca<sup>2+</sup>). This array contains genes whose promoters contain SRE or SRE-like enhancer sequences, the CRE enhancer sequence, and other Ca<sup>2+</sup> responsive elements. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes involved in cAMP/Ca<sup>2+</sup> signaling 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 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. RT<sup>2</sup> 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 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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## Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT<sup>2</sup> Profiler PCR Array Handbook* for layout.

|   | 1        | 2      | 3       | 4      | 5     | 6     | 7       | 8      | 9     | 10     | 11     | 12      |
|---|----------|--------|---------|--------|-------|-------|---------|--------|-------|--------|--------|---------|
| A | ADRB1    | AHR    | AMD1    | AREG   | ATF3  | BCL2  | BDNF    | BRCA1  | CALB1 | CALB2  | CALM1  | CALR    |
| B | CCNA1    | CCND1  | CDK5    | CDKN2B | CGA   | CHGA  | CNN1    | CREB1  | CREM  | CTF1   | CYR61  | DDIT3   |
| C | DUSP1    | EGR1   | EGR2    | ENO2   | FGF6  | FOS   | FOSB    | GCG    | GEM   | GIPR   | HK2    | HSPA4   |
| D | HSPA5    | IL2    | IL6     | INHBA  | JUNB  | JUND  | KCNA5   | LDHA   | MAF   | MIF    | NCAM1  | NF1     |
| E | NOS2     | NPY    | NR4A2   | PCK2   | PCNA  | PENK  | PER1    | PLAT   | PLN   | PMAIP1 | POU1F1 | POU2AF1 |
| F | PPP1R15A | PPP2CA | PRKAR1A | PRL    | PTGS2 | RB1   | S100A12 | S100A6 | S100G | SCG2   | SGK1   | SLC18A1 |
| G | SOD2     | SRF    | SST     | SSTR2  | STAT3 | TACR1 | TGFB3   | TH     | THBS1 | TNF    | VCL    | VIP     |
| H | ACTB     | B2M    | GAPDH   | HPRT1  | RPLP0 | HGDC  | RTC     | RTC    | RTC   | PPC    | PPC    | PPC     |

## Gene table: RT<sup>2</sup> Profiler PCR Array

| Position | UniGene   | GenBank   | Symbol | Description                                                         |
|----------|-----------|-----------|--------|---------------------------------------------------------------------|
| A01      | Hs.99913  | NM_000684 | ADRB1  | Adrenergic, beta-1-, receptor                                       |
| A02      | Hs.171189 | NM_001621 | AHR    | Aryl hydrocarbon receptor                                           |
| A03      | Hs.159118 | NM_001634 | AMD1   | Adenosylmethionine decarboxylase 1                                  |
| A04      | Hs.270833 | NM_001657 | AREG   | Amphiregulin                                                        |
| A05      | Hs.460    | NM_001674 | ATF3   | Activating transcription factor 3                                   |
| A06      | Hs.150749 | NM_000633 | BCL2   | B-cell CLL/lymphoma 2                                               |
| A07      | Hs.502182 | NM_001709 | BDNF   | Brain-derived neurotrophic factor                                   |
| A08      | Hs.194143 | NM_007294 | BRCA1  | Breast cancer 1, early onset                                        |
| A09      | Hs.65425  | NM_004929 | CALB1  | Calbindin 1, 28kDa                                                  |
| A10      | Hs.106857 | NM_001740 | CALB2  | Calbindin 2                                                         |
| A11      | Hs.282410 | NM_006888 | CALM1  | Calmodulin 1 (phosphorylase kinase, delta)                          |
| A12      | Hs.515162 | NM_004343 | CALR   | Calreticulin                                                        |
| B01      | Hs.417050 | NM_003914 | CCNA1  | Cyclin A1                                                           |
| B02      | Hs.523852 | NM_053056 | CCND1  | Cyclin D1                                                           |
| B03      | Hs.647078 | NM_004935 | CDK5   | Cyclin-dependent kinase 5                                           |
| B04      | Hs.72901  | NM_004936 | CDKN2B | Cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)           |
| B05      | Hs.119689 | NM_000735 | CGA    | Glycoprotein hormones, alpha polypeptide                            |
| B06      | Hs.150793 | NM_001275 | CHGA   | Chromogranin A (parathyroid secretory protein 1)                    |
| B07      | Hs.465929 | NM_001299 | CNN1   | Calponin 1, basic, smooth muscle                                    |
| B08      | Hs.516646 | NM_004379 | CREB1  | CAMP responsive element binding protein 1                           |
| B09      | Hs.200250 | NM_183011 | CREM   | CAMP responsive element modulator                                   |
| B10      | Hs.483811 | NM_001330 | CTF1   | Cardiotrophin 1                                                     |
| B11      | Hs.8867   | NM_001554 | CYR61  | Cysteine-rich, angiogenic inducer, 61                               |
| B12      | Hs.728989 | NM_004083 | DDIT3  | DNA-damage-inducible transcript 3                                   |
| C01      | Hs.171695 | NM_004417 | DUSP1  | Dual specificity phosphatase 1                                      |
| C02      | Hs.326035 | NM_001964 | EGR1   | Early growth response 1                                             |
| C03      | Hs.1395   | NM_000399 | EGR2   | Early growth response 2                                             |
| C04      | Hs.511915 | NM_001975 | ENO2   | Enolase 2 (gamma, neuronal)                                         |
| C05      | Hs.166015 | NM_020996 | FGF6   | Fibroblast growth factor 6                                          |
| C06      | Hs.728789 | NM_005252 | FOS    | FBJ murine osteosarcoma viral oncogene homolog                      |
| C07      | Hs.590958 | NM_006732 | FOSB   | FBJ murine osteosarcoma viral oncogene homolog B                    |
| C08      | Hs.516494 | NM_002054 | GCG    | Glucagon                                                            |
| C09      | Hs.654463 | NM_005261 | GEM    | GTP binding protein overexpressed in skeletal muscle                |
| C10      | Hs.658534 | NM_000164 | GIPR   | Gastric inhibitory polypeptide receptor                             |
| C11      | Hs.406266 | NM_000189 | HK2    | Hexokinase 2                                                        |
| C12      | Hs.90093  | NM_002154 | HSPA4  | Heat shock 70kDa protein 4                                          |
| D01      | Hs.716396 | NM_005347 | HSPA5  | Heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)       |
| D02      | Hs.89679  | NM_000586 | IL2    | Interleukin 2                                                       |
| D03      | Hs.654458 | NM_000600 | IL6    | Interleukin 6 (interferon, beta 2)                                  |
| D04      | Hs.583348 | NM_002192 | INHBA  | Inhibin, beta A                                                     |
| D05      | Hs.25292  | NM_002229 | JUNB   | Jun B proto-oncogene                                                |
| D06      | Hs.2780   | NM_005354 | JUND   | Jun D proto-oncogene                                                |
| D07      | Hs.150208 | NM_002234 | KCNA5  | Potassium voltage-gated channel, shaker-related subfamily, member 5 |
| D08      | Hs.2795   | NM_005566 | LDHA   | Lactate dehydrogenase A                                             |
| D09      | Hs.134859 | NM_005360 | MAF    | V-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian)      |

| Position | UniGene   | GenBank   | Symbol   | Description                                                                                |
|----------|-----------|-----------|----------|--------------------------------------------------------------------------------------------|
| D10      | Hs.407995 | NM_002415 | MIF      | Macrophage migration inhibitory factor (glycosylation-inhibiting factor)                   |
| D11      | Hs.503878 | NM_000615 | NCAM1    | Neural cell adhesion molecule 1                                                            |
| D12      | Hs.113577 | NM_000267 | NF1      | Neurofibromin 1                                                                            |
| E01      | Hs.709191 | NM_000625 | NOS2     | Nitric oxide synthase 2, inducible                                                         |
| E02      | Hs.1832   | NM_000905 | NPY      | Neuropeptide Y                                                                             |
| E03      | Hs.563344 | NM_006186 | NR4A2    | Nuclear receptor subfamily 4, group A, member 2                                            |
| E04      | Hs.75812  | NM_004563 | PCK2     | Phosphoenolpyruvate carboxykinase 2 (mitochondrial)                                        |
| E05      | Hs.728886 | NM_182649 | PCNA     | Proliferating cell nuclear antigen                                                         |
| E06      | Hs.339831 | NM_006211 | PENK     | Proenkephalin                                                                              |
| E07      | Hs.445534 | NM_002616 | PER1     | Period homolog 1 (Drosophila)                                                              |
| E08      | Hs.491582 | NM_000930 | PLAT     | Plasminogen activator, tissue                                                              |
| E09      | Hs.170839 | NM_002667 | PLN      | Phospholamban                                                                              |
| E10      | Hs.96     | NM_021127 | PMAIP1   | Phorbol-12-myristate-13-acetate-induced protein 1                                          |
| E11      | Hs.591654 | NM_000306 | POU1F1   | POU class 1 homeobox 1                                                                     |
| E12      | Hs.654525 | NM_006235 | POU2AF1  | POU class 2 associating factor 1                                                           |
| F01      | Hs.631593 | NM_014330 | PPP1R15A | Protein phosphatase 1, regulatory (inhibitor) subunit 15A                                  |
| F02      | Hs.483408 | NM_002715 | PPP2CA   | Protein phosphatase 2, catalytic subunit, alpha isozyme                                    |
| F03      | Hs.280342 | NM_002734 | PRKAR1A  | Protein kinase, cAMP-dependent, regulatory, type I, alpha (tissue specific extinguisher 1) |
| F04      | Hs.1905   | NM_000948 | PRL      | Prolactin                                                                                  |
| F05      | Hs.196384 | NM_000963 | PTGS2    | Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)      |
| F06      | Hs.408528 | NM_000321 | RB1      | Retinoblastoma 1                                                                           |
| F07      | Hs.19413  | NM_005621 | S100A12  | S100 calcium binding protein A12                                                           |
| F08      | Hs.275243 | NM_014624 | S100A6   | S100 calcium binding protein A6                                                            |
| F09      | Hs.639    | NM_004057 | S100G    | S100 calcium binding protein G                                                             |
| F10      | Hs.516726 | NM_003469 | SCG2     | Secretogranin II                                                                           |
| F11      | Hs.510078 | NM_005627 | SGK1     | Serum/glucocorticoid regulated kinase 1                                                    |
| F12      | Hs.158322 | NM_003053 | SLC18A1  | Solute carrier family 18 (vesicular monoamine), member 1                                   |
| G01      | Hs.487046 | NM_000636 | SOD2     | Superoxide dismutase 2, mitochondrial                                                      |
| G02      | Hs.520140 | NM_003131 | SRF      | Serum response factor (c-fos serum response element-binding transcription factor)          |
| G03      | Hs.12409  | NM_001048 | SST      | Somatostatin                                                                               |
| G04      | Hs.514451 | NM_001050 | SSTR2    | Somatostatin receptor 2                                                                    |
| G05      | Hs.463059 | NM_003150 | STAT3    | Signal transducer and activator of transcription 3 (acute-phase response factor)           |
| G06      | Hs.633301 | NM_001058 | TACR1    | Tachykinin receptor 1                                                                      |
| G07      | Hs.592317 | NM_003239 | TGFB3    | Transforming growth factor, beta 3                                                         |
| G08      | Hs.435609 | NM_000360 | TH       | Tyrosine hydroxylase                                                                       |
| G09      | Hs.164226 | NM_003246 | THBS1    | Thrombospondin 1                                                                           |
| G10      | Hs.241570 | NM_000594 | TNF      | Tumor necrosis factor                                                                      |
| G11      | Hs.643896 | NM_003373 | VCL      | Vinculin                                                                                   |
| G12      | Hs.53973  | NM_003381 | VIP      | Vasoactive intestinal peptide                                                              |
| 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, 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 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 <sup>2</sup> SYBR Green ROX <sup>™</sup> 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 <sup>2</sup> 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.

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.

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