

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

## Mouse Neuronal Ion Channels

Cat. no. 330231 PAMM-036ZA

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 Mouse Neuronal Ion Channels RT<sup>2</sup> Profiler PCR Array was developed to profile expression of a panel of 84 genes encoding neuroscience-related ion channels and transporters. The genes represented on the array are listed below, grouped according to their functional and structural features. Included are calcium channels, potassium channels, sodium channels, chloride channels, and transporters. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to the neuronal ion channels and transporters 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      |
|----------|--------|--------|--------|--------|----------|---------|---------|---------|---------|---------|--------|---------|
| <b>A</b> | Accn1  | Accn2  | Accn3  | Best1  | Cacna1a  | Cacna1b | Cacna1c | Cacna1d | Cacna1g | Cacna1i | Cacnb1 | Cacnb2  |
| <b>B</b> | Cacnb3 | Cacng2 | Cacng4 | Clcn2  | Clcn3    | Clcn7   | Hcn1    | Hcn2    | Kcna1   | Kcna2   | Kcna5  | Kcna6   |
| <b>C</b> | Kcnab1 | Kcnab2 | Kcnab3 | Kcnb1  | Kcnb2    | Kcnc1   | Kcnc2   | Kcnd2   | Kcnd3   | Kcnh1   | Kcnh2  | Kcnh3   |
| <b>D</b> | Kcnh6  | Kcnh7  | Kcnj1  | Kcnj11 | Kcnj12   | Kcnj13  | Kcnj14  | Kcnj15  | Kcnj16  | Kcnj2   | Kcnj3  | Kcnj4   |
| <b>E</b> | Kcnj5  | Kcnj6  | Kcnj9  | Kcnk1  | Kcnma1   | Kcnmb4  | Kcnn1   | Kcnn2   | Kcnn3   | Kcnq1   | Kcnq2  | Kcnq3   |
| <b>F</b> | Kcns1  | Ryr3   | Scn10a | Scn11a | Scn1a    | Scn1b   | Scn2a1  | Scn2b   | Scn3a   | Scn8a   | Scn9a  | Slc12a5 |
| <b>G</b> | Trpa1  | Trpc1  | Trpc3  | Trpc6  | Trpm1    | Trpm2   | Trpm6   | Trpm8   | Trpv1   | Trpv2   | Trpv3  | Trpv4   |
| <b>H</b> | Actb   | B2m    | Gapdh  | Gusb   | Hsp90ab1 | MGDC    | RTC     | RTC     | RTC     | PPC     | PPC    | PPC     |

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

| Position | UniGene   | GenBank      | Symbol  | Description                                                              |
|----------|-----------|--------------|---------|--------------------------------------------------------------------------|
| A01      | Mm.234998 | NM_007384    | Accn1   | Amiloride-sensitive cation channel 1, neuronal (degenerin)               |
| A02      | Mm.440107 | NM_009597    | Accn2   | Amiloride-sensitive cation channel 2, neuronal                           |
| A03      | Mm.299636 | NM_183000    | Accn3   | Amiloride-sensitive cation channel 3                                     |
| A04      | Mm.31577  | NM_011913    | Best1   | Bestrophin 1                                                             |
| A05      | Mm.334658 | NM_007578    | Cacna1a | Calcium channel, voltage-dependent, P/Q type, alpha 1A subunit           |
| A06      | Mm.4424   | NM_007579    | Cacna1b | Calcium channel, voltage-dependent, N type, alpha 1B subunit             |
| A07      | Mm.436656 | NM_009781    | Cacna1c | Calcium channel, voltage-dependent, L type, alpha 1C subunit             |
| A08      | Mm.9772   | NM_028981    | Cacna1d | Calcium channel, voltage-dependent, L type, alpha 1D subunit             |
| A09      | Mm.29585  | NM_009783    | Cacna1g | Calcium channel, voltage-dependent, T type, alpha 1G subunit             |
| A10      | Mm.291058 | NM_001044308 | Cacna1i | Calcium channel, voltage-dependent, alpha 1I subunit                     |
| A11      | Mm.41252  | NM_031173    | Cacnb1  | Calcium channel, voltage-dependent, beta 1 subunit                       |
| A12      | Mm.313930 | NM_023116    | Cacnb2  | Calcium channel, voltage-dependent, beta 2 subunit                       |
| B01      | Mm.3544   | NM_007581    | Cacnb3  | Calcium channel, voltage-dependent, beta 3 subunit                       |
| B02      | Mm.277338 | NM_007583    | Cacng2  | Calcium channel, voltage-dependent, gamma subunit 2                      |
| B03      | Mm.103724 | NM_019431    | Cacng4  | Calcium channel, voltage-dependent, gamma subunit 4                      |
| B04      | Mm.177761 | NM_009900    | Clcn2   | Chloride channel 2                                                       |
| B05      | Mm.259751 | NM_007711    | Clcn3   | Chloride channel 3                                                       |
| B06      | Mm.270587 | NM_011930    | Clcn7   | Chloride channel 7                                                       |
| B07      | Mm.343429 | NM_010408    | Hcn1    | Hyperpolarization-activated, cyclic nucleotide-gated K+ 1                |
| B08      | Mm.12956  | NM_008226    | Hcn2    | Hyperpolarization-activated, cyclic nucleotide-gated K+ 2                |
| B09      | Mm.40424  | NM_010595    | Kcna1   | Potassium voltage-gated channel, shaker-related subfamily, member 1      |
| B10      | Mm.56930  | NM_008417    | Kcna2   | Potassium voltage-gated channel, shaker-related subfamily, member 2      |
| B11      | Mm.222831 | NM_145983    | Kcna5   | Potassium voltage-gated channel, shaker-related subfamily, member 5      |
| B12      | Mm.62535  | NM_013568    | Kcna6   | Potassium voltage-gated channel, shaker-related, subfamily, member 6     |
| C01      | Mm.316402 | NM_010597    | Kcnab1  | Potassium voltage-gated channel, shaker-related subfamily, beta member 1 |
| C02      | Mm.388924 | NM_010598    | Kcnab2  | Potassium voltage-gated channel, shaker-related subfamily, beta member 2 |
| C03      | Mm.232472 | NM_010599    | Kcnab3  | Potassium voltage-gated channel, shaker-related subfamily, beta member 3 |
| C04      | Mm.387390 | NM_008420    | Kcnb1   | Potassium voltage gated channel, Shab-related subfamily, member 1        |
| C05      | Mm.156081 | NM_001098528 | Kcnb2   | Potassium voltage gated channel, Shab-related subfamily, member 2        |
| C06      | Mm.249386 | NM_008421    | Kcnc1   | Potassium voltage gated channel, Shaw-related subfamily, member 1        |
| C07      | Mm.336242 | NM_001025581 | Kcnc2   | Potassium voltage gated channel, Shaw-related subfamily, member 2        |
| C08      | Mm.320691 | NM_019697    | Kcnd2   | Potassium voltage-gated channel, Shal-related family, member 2           |
| C09      | Mm.44530  | NM_019931    | Kcnd3   | Potassium voltage-gated channel, Shal-related family, member 3           |
| C10      | Mm.4489   | NM_010600    | Kcnh1   | Potassium voltage-gated channel, subfamily H (eag-related), member 1     |
| C11      | Mm.6539   | NM_013569    | Kcnh2   | Potassium voltage-gated channel, subfamily H (eag-related), member 2     |
| C12      | Mm.374793 | NM_010601    | Kcnh3   | Potassium voltage-gated channel, subfamily H (eag-related), member 3     |
| D01      | Mm.343850 | NM_001037712 | Kcnh6   | Potassium voltage-gated channel, subfamily H (eag-related), member 6     |
| D02      | Mm.242532 | NM_133207    | Kcnh7   | Potassium voltage-gated channel, subfamily H (eag-related), member 7     |
| D03      | Mm.390168 | NM_019659    | Kcnj1   | Potassium inwardly-rectifying channel, subfamily J, member 1             |
| D04      | Mm.333863 | NM_010602    | Kcnj11  | Potassium inwardly rectifying channel, subfamily J, member 11            |
| D05      | Mm.4970   | NM_010603    | Kcnj12  | Potassium inwardly-rectifying channel, subfamily J, member 12            |
| D06      | Mm.443539 | NM_001110227 | Kcnj13  | Potassium inwardly-rectifying channel, subfamily J, member 13            |
| D07      | Mm.68170  | NM_145963    | Kcnj14  | Potassium inwardly-rectifying channel, subfamily J, member 14            |
| D08      | Mm.272239 | NM_019664    | Kcnj15  | Potassium inwardly-rectifying channel, subfamily J, member 15            |
| D09      | Mm.30176  | NM_010604    | Kcnj16  | Potassium inwardly-rectifying channel, subfamily J, member 16            |

| Position | UniGene   | GenBank      | Symbol   | Description                                                                               |
|----------|-----------|--------------|----------|-------------------------------------------------------------------------------------------|
| D10      | Mm.4951   | NM_008425    | Kcnj2    | Potassium inwardly-rectifying channel, subfamily J, member 2                              |
| D11      | Mm.5127   | NM_008426    | Kcnj3    | Potassium inwardly-rectifying channel, subfamily J, member 3                              |
| D12      | Mm.140760 | NM_008427    | Kcnj4    | Potassium inwardly-rectifying channel, subfamily J, member 4                              |
| E01      | Mm.69472  | NM_010605    | Kcnj5    | Potassium inwardly-rectifying channel, subfamily J, member 5                              |
| E02      | Mm.328720 | NM_010606    | Kcnj6    | Potassium inwardly-rectifying channel, subfamily J, member 6                              |
| E03      | Mm.261168 | NM_008429    | Kcnj9    | Potassium inwardly-rectifying channel, subfamily J, member 9                              |
| E04      | Mm.10800  | NM_008430    | Kcnk1    | Potassium channel, subfamily K, member 1                                                  |
| E05      | Mm.343607 | NM_010610    | Kcnma1   | Potassium large conductance calcium-activated channel, subfamily M, alpha member 1        |
| E06      | Mm.440652 | NM_021452    | Kcnmb4   | Potassium large conductance calcium-activated channel, subfamily M, beta member 4         |
| E07      | Mm.32074  | NM_032397    | Kcnn1    | Potassium intermediate/small conductance calcium-activated channel, subfamily N, member 1 |
| E08      | Mm.458654 | NM_080465    | Kcnn2    | Potassium intermediate/small conductance calcium-activated channel, subfamily N, member 2 |
| E09      | Mm.120250 | NM_080466    | Kcnn3    | Potassium intermediate/small conductance calcium-activated channel, subfamily N, member 3 |
| E10      | Mm.439769 | NM_008434    | Kcnq1    | Potassium voltage-gated channel, subfamily Q, member 1                                    |
| E11      | Mm.40615  | NM_010611    | Kcnq2    | Potassium voltage-gated channel, subfamily Q, member 2                                    |
| E12      | Mm.255585 | NM_152923    | Kcnq3    | Potassium voltage-gated channel, subfamily Q, member 3                                    |
| F01      | Mm.6217   | NM_008435    | Kcns1    | K+ voltage-gated channel, subfamily S, 1                                                  |
| F02      | Mm.436657 | NM_177652    | Ryr3     | Ryanodine receptor 3                                                                      |
| F03      | Mm.247042 | NM_009134    | Scn10a   | Sodium channel, voltage-gated, type X, alpha                                              |
| F04      | Mm.89981  | NM_011887    | Scn11a   | Sodium channel, voltage-gated, type XI, alpha                                             |
| F05      | Mm.439704 | NM_018733    | Scn1a    | Sodium channel, voltage-gated, type I, alpha                                              |
| F06      | Mm.1418   | NM_011322    | Scn1b    | Sodium channel, voltage-gated, type I, beta                                               |
| F07      | Mm.220329 | NM_001099298 | Scn2a1   | Sodium channel, voltage-gated, type II, alpha 1                                           |
| F08      | Mm.229373 | NM_001014761 | Scn2b    | Sodium channel, voltage-gated, type II, beta                                              |
| F09      | Mm.330256 | NM_018732    | Scn3a    | Sodium channel, voltage-gated, type III, alpha                                            |
| F10      | Mm.385012 | NM_001077499 | Scn8a    | Sodium channel, voltage-gated, type VIII, alpha                                           |
| F11      | Mm.440889 | NM_018852    | Scn9a    | Sodium channel, voltage-gated, type IX, alpha                                             |
| F12      | Mm.252987 | NM_020333    | Slc12a5  | Solute carrier family 12, member 5                                                        |
| G01      | Mm.186329 | NM_177781    | Trpa1    | Transient receptor potential cation channel, subfamily A, member 1                        |
| G02      | Mm.149633 | NM_011643    | Trpc1    | Transient receptor potential cation channel, subfamily C, member 1                        |
| G03      | Mm.74363  | NM_019510    | Trpc3    | Transient receptor potential cation channel, subfamily C, member 3                        |
| G04      | Mm.325086 | NM_013838    | Trpc6    | Transient receptor potential cation channel, subfamily C, member 6                        |
| G05      | Mm.38875  | NM_001039104 | Trpm1    | Transient receptor potential cation channel, subfamily M, member 1                        |
| G06      | Mm.276762 | NM_138301    | Trpm2    | Transient receptor potential cation channel, subfamily M, member 2                        |
| G07      | Mm.215171 | NM_153417    | Trpm6    | Transient receptor potential cation channel, subfamily M, member 6                        |
| G08      | Mm.218753 | NM_134252    | Trpm8    | Transient receptor potential cation channel, subfamily M, member 8                        |
| G09      | Mm.447485 | NM_001001445 | Trpv1    | Transient receptor potential cation channel, subfamily V, member 1                        |
| G10      | Mm.288064 | NM_011706    | Trpv2    | Transient receptor potential cation channel, subfamily V, member 2                        |
| G11      | Mm.347652 | NM_145099    | Trpv3    | Transient receptor potential cation channel, subfamily V, member 3                        |
| G12      | Mm.266450 | NM_022017    | Trpv4    | Transient receptor potential cation channel, subfamily V, member 4                        |
| 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 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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