# RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

## Mouse Huntington's Disease

### Cat. no. 330231 PAMM-123ZA

### For pathway expression analysis

| Format | For use with the following real-time cyclers |
|---|---|
| RT² 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 |
| RT² Profiler PCR Array, Format C | Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block) |
| RT² Profiler PCR Array, Format D | Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000® |
| RT² Profiler PCR Array, Format E | Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™ |
| RT² Profiler PCR Array, Format F | Roche® LightCycler® 480 (96-well block) |
| RT² Profiler PCR Array, Format G | Roche LightCycler 480 (384-well block) |
| RT² Profiler PCR Array, Format H | Fluidigm® BioMark™ |

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## Description

The Mouse Huntington's Disease RT² Profiler™ PCR Array profiles the expression of 84 key genes directly or potentially involved in Huntington's disease (HD). HD, an autosomal dominant genetic disorder caused by expanded CAG repeats in the Huntingtin (HTT) gene, patients present with progressive neuronal dysfunction, and eventually death. HTT interacts with multiple transcription factors (e.g. REST and SP1). HTT mutations have multiple effects, including loss of anti-apoptotic function as well as altered interactions between HTT and transcription factors, affecting downstream expression of target genes. For example, HTT sequesters REST in the cytoplasm. Mutant HTT's decreased interaction with REST allows the transcription factor to enter the nucleus and repress BDNF gene expression. BDNF is critical for striatal neuron survival, and its down-regulation leads to neuronal death.

Microarray gene expression analyses of human cadavers and mouse HD models have identified many genes that may be involved in HD progression. Analysis of these dysregulated genes in your model system may provide insights into HD pathophysiological mechanisms and suggestions for new therapeutic targets. This array includes known HTT cofactors and downstream interactors, as well as SP1 and REST targets whose expression changes correlate across multiple HD microarray analyses. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes central to Huntington's disease progression with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

## Shipping and storage

RT² 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. RT² 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 RT² 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 (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | Akt1 | Apoe | Aqp1 | Arfip2 | Atp2b2 | Bax | Bbox1 | Bdnf | C3 | Calb1 | Casp3 | Casp8 |
| B | Cd44 | Cltc | Cnr1 | Creb1 | Crebbp | Dctn1 | Dlg4 | Eef1a2 | Egfr | Elmo1 | Fgf12 | Gabrd |
| C | Gja1 | Gjb6 | Gnaq | Gpx1 | Grb2 | Grin2a | Grin2b | Grm5 | Hap1 | Hdac1 | Hdac2 | Hip1 |
| D | Homer1 | Hpca | Htt | Ift57 | Igf1 | Itpr1 | Kcnab1 | Kcnab2 | Kcnc3 | Lpl | Map3k10 | Ncor1 |
| E | Nefl | Ngef | Ntrk2 | Pacsin1 | Pgk1 | Plcb4 | Plod2 | Ppargc1a | Ppp3ca | Prkcb | Prpf40a | Ptpn11 |
| F | Rab6 | Rcor1 | Rest | Rgs4 | Rilp | Rph3a | Rxrb | Sgk1 | Sin3a | Slc14a1 | Slc25a4 | Snap25 |
| G | Sod1 | Sox2 | Sp1 | Sympk | Syn1 | Tac1 | Tbp | Tgm2 | Tollip | Trp53 | Tubb5 | Zbtb16 |
| H | Actb | B2m | Gapdh | Gusb | Hsp90ab1 | MGDC | RTC | RTC | RTC | PPC | PPC | PPC |

## Gene table: RT² Profiler PCR Array

| Position | UniGene | GenBank | Symbol | Description |
|---|---|---|---|---|
| A01 | Mm.6645 | NM_009652 | Akt1 | Thymoma viral proto-oncogene 1 |
| A02 | Mm.305152 | NM_009696 | Apoe | Apolipoprotein E |
| A03 | Mm.18625 | NM_007472 | Aqp1 | Aquaporin 1 |
| A04 | Mm.41637 | NM_029802 | Arfip2 | ADP-ribosylation factor interacting protein 2 |
| A05 | Mm.321755 | NM_009723 | Atp2b2 | ATPase, Ca++ transporting, plasma membrane 2 |
| A06 | Mm.19904 | NM_007527 | Bax | Bcl2-associated X protein |
| A07 | Mm.27335 | NM_130452 | Bbox1 | Butyrobetaine (gamma), 2-oxoglutarate dioxygenase 1 (gamma-butyrobetaine hydroxylase) |
| A08 | Mm.1442 | NM_007540 | Bdnf | Brain derived neurotrophic factor |
| A09 | Mm.19131 | NM_009778 | C3 | Complement component 3 |
| A10 | Mm.277665 | NM_009788 | Calb1 | Calbindin 1 |
| A11 | Mm.34405 | NM_009810 | Casp3 | Caspase 3 |
| A12 | Mm.336851 | NM_009812 | Casp8 | Caspase 8 |
| B01 | Mm.423621 | NM_009851 | Cd44 | CD44 antigen |
| B02 | Mm.479526 | NM_001003908 | Cltc | Clathrin, heavy polypeptide (Hc) |
| B03 | Mm.7992 | NM_007726 | Cnr1 | Cannabinoid receptor 1 (brain) |
| B04 | Mm.453295 | NM_133828 | Creb1 | CAMP responsive element binding protein 1 |
| B05 | Mm.132238 | NM_001025432 | Crebbp | CREB binding protein |
| B06 | Mm.6919 | NM_007835 | Dctn1 | Dynactin 1 |
| B07 | Mm.27256 | NM_007864 | Dlg4 | Discs, large homolog 4 (Drosophila) |
| B08 | Mm.2645 | NM_007906 | Eef1a2 | Eukaryotic translation elongation factor 1 alpha 2 |
| B09 | Mm.8534 | NM_007912 | Egfr | Epidermal growth factor receptor |
| B10 | Mm.342392 | NM_198093 | Elmo1 | Engulfment and cell motility 1, ced-12 homolog (C. elegans) |
| B11 | Mm.7996 | NM_010199 | Fgf12 | Fibroblast growth factor 12 |
| B12 | Mm.388925 | NM_008072 | Gabrd | Gamma-aminobutyric acid (GABA) A receptor, subunit delta |
| C01 | Mm.378921 | NM_010288 | Gja1 | Gap junction protein, alpha 1 |
| C02 | Mm.25652 | NM_008128 | Gjb6 | Gap junction protein, beta 6 |
| C03 | Mm.439701 | NM_008139 | Gnaq | Guanine nucleotide binding protein, alpha q polypeptide |
| C04 | Mm.1090 | NM_008160 | Gpx1 | Glutathione peroxidase 1 |
| C05 | Mm.439649 | NM_008163 | Grb2 | Growth factor receptor bound protein 2 |
| C06 | Mm.2953 | NM_008170 | Grin2a | Glutamate receptor, ionotropic, NMDA2A (epsilon 1) |
| C07 | Mm.436649 | NM_008171 | Grin2b | Glutamate receptor, ionotropic, NMDA2B (epsilon 2) |
| C08 | Mm.235018 | NM_001081414 | Grm5 | Glutamate receptor, metabotropic 5 |
| C09 | Mm.281700 | NM_010404 | Hap1 | Huntingtin-associated protein 1 |
| C10 | Mm.202504 | NM_008228 | Hdac1 | Histone deacetylase 1 |
| C11 | Mm.19806 | NM_008229 | Hdac2 | Histone deacetylase 2 |
| C12 | Mm.280805 | NM_146001 | Hip1 | Huntingtin interacting protein 1 |
| D01 | Mm.37533 | NM_152134 | Homer1 | Homer homolog 1 (Drosophila) |
| D02 | Mm.384452 | NM_010471 | Hpca | Hippocalcin |
| D03 | Mm.209071 | NM_010414 | Htt | Huntingtin |
| D04 | Mm.241276 | NM_028680 | Ift57 | Intraflagellar transport 57 homolog (Chlamydomonas) |
| D05 | Mm.268521 | NM_010512 | Igf1 | Insulin-like growth factor 1 |
| D06 | Mm.227912 | NM_010585 | Itpr1 | Inositol 1,4,5-trisphosphate receptor 1 |
| D07 | Mm.316402 | NM_010597 | Kcnab1 | Potassium voltage-gated channel, shaker-related subfamily, beta member 1 |
| D08 | Mm.388924 | NM_010598 | Kcnab2 | Potassium voltage-gated channel, shaker-related subfamily, beta member 2 |

| Position | UniGene | GenBank | Symbol | Description |
|---|---|---|---|---|
| D09 | Mm.40312 | NM_008422 | Kcnc3 | Potassium voltage gated channel, Shaw-related subfamily, member 3 |
| D10 | Mm.1514 | NM_008509 | Lpl | Lipoprotein lipase |
| D11 | Mm.389883 | NM_001081292 | Map3k10 | Mitogen-activated protein kinase kinase kinase 10 |
| D12 | Mm.271814 | NM_011308 | Ncor1 | Nuclear receptor co-repressor 1 |
| E01 | Mm.1956 | NM_010910 | Nefl | Neurofilament, light polypeptide |
| E02 | Mm.435439 | NM_019867 | Ngef | Neuronal guanine nucleotide exchange factor |
| E03 | Mm.130054 | NM_008745 | Ntrk2 | Neurotrophic tyrosine kinase, receptor, type 2 |
| E04 | Mm.4926 | NM_011861 | Pacsin1 | Protein kinase C and casein kinase substrate in neurons 1 |
| E05 | Mm.336205 | NM_008828 | Pgk1 | Phosphoglycerate kinase 1 |
| E06 | Mm.38009 | NM_013829 | Plcb4 | Phospholipase C, beta 4 |
| E07 | Mm.79983 | NM_011961 | Plod2 | Procollagen lysine, 2-oxoglutarate 5-dioxygenase 2 |
| E08 | Mm.259072 | NM_008904 | Ppargc1a | Peroxisome proliferative activated receptor, gamma, coactivator 1 alpha |
| E09 | Mm.331389 | NM_008913 | Ppp3ca | Protein phosphatase 3, catalytic subunit, alpha isoform |
| E10 | Mm.207496 | NM_008855 | Prkcb | Protein kinase C, beta |
| E11 | Mm.257474 | NM_018785 | Prpf40a | PRP40 pre-mRNA processing factor 40 homolog A (yeast) |
| E12 | Mm.8681 | NM_011202 | Ptpn11 | Protein tyrosine phosphatase, non-receptor type 11 |
| F01 | Mm.28650 | NM_024287 | Rab6 | RAB6, member RAS oncogene family |
| F02 | Mm.23808 | NM_198023 | Rcor1 | REST corepressor 1 |
| F03 | Mm.28840 | NM_011263 | Rest | RE1-silencing transcription factor |
| F04 | Mm.41642 | NM_009062 | Rgs4 | Regulator of G-protein signaling 4 |
| F05 | Mm.41416 | NM_001029938 | Rilp | Rab interacting lysosomal protein |
| F06 | Mm.181166 | NM_011286 | Rph3a | Rabphilin 3A |
| F07 | Mm.1243 | NM_011306 | Rxrb | Retinoid X receptor beta |
| F08 | Mm.28405 | NM_011361 | Sgk1 | Serum/glucocorticoid regulated kinase 1 |
| F09 | Mm.15755 | NM_011378 | Sin3a | Transcriptional regulator, SIN3A (yeast) |
| F10 | Mm.33832 | NM_028122 | Slc14a1 | Solute carrier family 14 (urea transporter), member 1 |
| F11 | Mm.16228 | NM_007450 | Slc25a4 | Solute carrier family 25 (mitochondrial carrier, adenine nucleotide translocator), member 4 |
| F12 | Mm.45953 | NM_011428 | Snap25 | Synaptosomal-associated protein 25 |
| G01 | Mm.276325 | NM_011434 | Sod1 | Superoxide dismutase 1, soluble |
| G02 | Mm.65396 | NM_011443 | Sox2 | SRY-box containing gene 2 |
| G03 | Mm.4618 | NM_013672 | Sp1 | Trans-acting transcription factor 1 |
| G04 | Mm.130902 | NM_026605 | Sympk | Symplekin |
| G05 | Mm.439844 | NM_013680 | Syn1 | Synapsin I |
| G06 | Mm.1440 | NM_009311 | Tac1 | Tachykinin 1 |
| G07 | Mm.244820 | NM_013684 | Tbp | TATA box binding protein |
| G08 | Mm.330731 | NM_009373 | Tgm2 | Transglutaminase 2, C polypeptide |
| G09 | Mm.103551 | NM_023764 | Tollip | Toll interacting protein |
| G10 | Mm.222 | NM_011640 | Trp53 | Transformation related protein 53 |
| G11 | Mm.273538 | NM_011655 | Tubb5 | Tubulin, beta 5 |
| G12 | Mm.457803 | NM_001033324 | Zbtb16 | Zinc finger and BTB domain containing 16 |
| 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, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT2 SYBR® Green qPCR Mastermixes for PCR.

| Product | Contents | Cat. no. |
|---|---|---|
| RT² First Strand Kit (12) | Enzymes and reagents for cDNA synthesis | 330401 |
| RT² 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 |
| RT² SYBR Green ROX™ 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 |
| RT² 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.

RT² 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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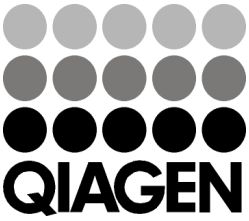


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