

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

Human Autophagy

Cat. no. 330231 PAHS-084ZA

For pathway expression analysis

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



Sample & Assay Technologies

Description

The Human Autophagy RT² Profiler PCR Array profiles the expression of 84 key genes involved in autophagy, an intracellular catabolic process that destroys a cell's own damaged proteins and organelles via the lysosome. Autophagy has been shown to play roles in a wide variety of normal physiological processes including energy metabolism, organelle turnover, growth regulation, and aging. Impaired autophagy can lead to diseases such as cardiomyopathy and cancer. The array includes genes that encode components of the molecular machinery and key regulators modulating autophagy in response to both extracellular and intracellular signals. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in autophagy 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 | AMBRA1 | APP | ATG10 | ATG12 | ATG16L1 | ATG16L2 | ATG3 | ATG4A | ATG4B | ATG4C | ATG4D |
| B | ATG5 | ATG7 | ATG9A | ATG9B | BAD | BAK1 | BAX | BCL2 | BCL2L1 | BECN1 | BID | BNIP3 |
| C | CASP3 | CASP8 | CDKN1B | CDKN2A | CLN3 | CTSB | CTSD | CTSS | CXCR4 | DAPK1 | DRAM1 | DRAM2 |
| D | EIF2AK3 | EIF4G1 | ESR1 | FADD | FAS | GAA | GABARAP | GABARAPL1 | GABARAPL2 | HDAC1 | HDAC6 | HGS |
| E | HSP90AA1 | HSP8 | HTT | IFNG | IGF1 | INS | IRGM | LAMP1 | MAP1LC3A | MAP1LC3B | MAPK14 | MAPK8 |
| F | MTOR | NFKB1 | NPC1 | PIK3C3 | PIK3CG | PIK3R4 | PRKAA1 | PTEN | RAB24 | RB1 | RGS19 | RPS6KB1 |
| G | SNCA | SQSTM1 | TGFB1 | TGM2 | TMEM74 | TNF | TNFSF10 | TP53 | ULK1 | ULK2 | UVRAG | WIP1 |
| H | ACTB | B2M | GAPDH | HPRT1 | RPLP0 | HGDC | RTC | RTC | RTC | PPC | PPC | PPC |

Gene table: RT² Profiler PCR Array

| Position | UniGene | GenBank | Symbol | Description |
|----------|-----------|-----------|-----------|---|
| A01 | Hs.525622 | NM_005163 | AKT1 | V-akt murine thymoma viral oncogene homolog 1 |
| A02 | Hs.654644 | NM_017749 | AMBRA1 | Autophagy/beclin-1 regulator 1 |
| A03 | Hs.434980 | NM_000484 | APP | Amyloid beta (A4) precursor protein |
| A04 | Hs.713698 | NM_031482 | ATG10 | ATG10 autophagy related 10 homolog (S. cerevisiae) |
| A05 | Hs.264482 | NM_004707 | ATG12 | ATG12 autophagy related 12 homolog (S. cerevisiae) |
| A06 | Hs.529322 | NM_017974 | ATG16L1 | ATG16 autophagy related 16-like 1 (S. cerevisiae) |
| A07 | Hs.653186 | NM_033388 | ATG16L2 | ATG16 autophagy related 16-like 2 (S. cerevisiae) |
| A08 | Hs.477126 | NM_022488 | ATG3 | ATG3 autophagy related 3 homolog (S. cerevisiae) |
| A09 | Hs.8763 | NM_052936 | ATG4A | ATG4 autophagy related 4 homolog A (S. cerevisiae) |
| A10 | Hs.283610 | NM_178326 | ATG4B | ATG4 autophagy related 4 homolog B (S. cerevisiae) |
| A11 | Hs.7353 | NM_178221 | ATG4C | ATG4 autophagy related 4 homolog C (S. cerevisiae) |
| A12 | Hs.512799 | NM_032885 | ATG4D | ATG4 autophagy related 4 homolog D (S. cerevisiae) |
| B01 | Hs.486063 | NM_004849 | ATG5 | ATG5 autophagy related 5 homolog (S. cerevisiae) |
| B02 | Hs.716466 | NM_006395 | ATG7 | ATG7 autophagy related 7 homolog (S. cerevisiae) |
| B03 | Hs.323363 | NM_024085 | ATG9A | ATG9 autophagy related 9 homolog A (S. cerevisiae) |
| B04 | Hs.707300 | NM_173681 | ATG9B | ATG9 autophagy related 9 homolog B (S. cerevisiae) |
| B05 | Hs.370254 | NM_004322 | BAD | BCL2-associated agonist of cell death |
| B06 | Hs.485139 | NM_001188 | BAK1 | BCL2-antagonist/killer 1 |
| B07 | Hs.624291 | NM_004324 | BAX | BCL2-associated X protein |
| B08 | Hs.150749 | NM_000633 | BCL2 | B-cell CLL/lymphoma 2 |
| B09 | Hs.516966 | NM_138578 | BCL2L1 | BCL2-like 1 |
| B10 | Hs.12272 | NM_003766 | BECN1 | Beclin 1, autophagy related |
| B11 | Hs.591054 | NM_001196 | BID | BH3 interacting domain death agonist |
| B12 | Hs.144873 | NM_004052 | BNIP3 | BCL2/adenovirus E1B 19kDa interacting protein 3 |
| C01 | Hs.141125 | NM_004346 | CASP3 | Caspase 3, apoptosis-related cysteine peptidase |
| C02 | Hs.599762 | NM_001228 | CASP8 | Caspase 8, apoptosis-related cysteine peptidase |
| C03 | Hs.238990 | NM_004064 | CDKN1B | Cyclin-dependent kinase inhibitor 1B (p27, Kip1) |
| C04 | Hs.512599 | NM_000077 | CDKN2A | Cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4) |
| C05 | Hs.628393 | NM_000086 | CLN3 | Ceroid-lipofuscinosis, neuronal 3 |
| C06 | Hs.520898 | NM_001908 | CTSB | Cathepsin B |
| C07 | Hs.121575 | NM_001909 | CTSD | Cathepsin D |
| C08 | Hs.181301 | NM_004079 | CTSS | Cathepsin S |
| C09 | Hs.593413 | NM_003467 | CXCR4 | Chemokine (C-X-C motif) receptor 4 |
| C10 | Hs.380277 | NM_004938 | DAPK1 | Death-associated protein kinase 1 |
| C11 | Hs.525634 | NM_018370 | DRAM1 | DNA-damage regulated autophagy modulator 1 |
| C12 | Hs.485606 | NM_178454 | DRAM2 | DNA-damage regulated autophagy modulator 2 |
| D01 | Hs.591589 | NM_004836 | EIF2AK3 | Eukaryotic translation initiation factor 2-alpha kinase 3 |
| D02 | Hs.433750 | NM_182917 | EIF4G1 | Eukaryotic translation initiation factor 4 gamma, 1 |
| D03 | Hs.208124 | NM_000125 | ESR1 | Estrogen receptor 1 |
| D04 | Hs.86131 | NM_003824 | FADD | Fas (TNFRSF6)-associated via death domain |
| D05 | Hs.244139 | NM_000043 | FAS | Fas (TNF receptor superfamily, member 6) |
| D06 | Hs.1437 | NM_000152 | GAA | Glucosidase, alpha; acid |
| D07 | Hs.647421 | NM_007278 | GABARAP | GABA(A) receptor-associated protein |
| D08 | Hs.524250 | NM_031412 | GABARAPL1 | GABA(A) receptor-associated protein like 1 |
| D09 | Hs.461379 | NM_007285 | GABARAPL2 | GABA(A) receptor-associated protein-like 2 |

| Position | UniGene | GenBank | Symbol | Description |
|----------|-----------|--------------|----------|---|
| D10 | Hs.88556 | NM_004964 | HDAC1 | Histone deacetylase 1 |
| D11 | Hs.6764 | NM_006044 | HDAC6 | Histone deacetylase 6 |
| D12 | Hs.514590 | NM_004712 | HGS | Hepatocyte growth factor-regulated tyrosine kinase substrate |
| E01 | Hs.525600 | NM_001017963 | HSP90AA1 | Heat shock protein 90kDa alpha (cytosolic), class A member 1 |
| E02 | Hs.702021 | NM_006597 | HSPA8 | Heat shock 70kDa protein 8 |
| E03 | Hs.518450 | NM_002111 | HTT | Huntingtin |
| E04 | Hs.856 | NM_000619 | IFNG | Interferon, gamma |
| E05 | Hs.160562 | NM_000618 | IGF1 | Insulin-like growth factor 1 (somatomedin C) |
| E06 | Hs.654579 | NM_000207 | INS | Insulin |
| E07 | Hs.519680 | NM_001145805 | IRGM | Immunity-related GTPase family, M |
| E08 | Hs.494419 | NM_005561 | LAMP1 | Lysosomal-associated membrane protein 1 |
| E09 | Hs.632273 | NM_181509 | MAP1LC3A | Microtubule-associated protein 1 light chain 3 alpha |
| E10 | Hs.356061 | NM_022818 | MAP1LC3B | Microtubule-associated protein 1 light chain 3 beta |
| E11 | Hs.485233 | NM_001315 | MAPK14 | Mitogen-activated protein kinase 14 |
| E12 | Hs.138211 | NM_002750 | MAPK8 | Mitogen-activated protein kinase 8 |
| F01 | Hs.338207 | NM_004958 | MTOR | Mechanistic target of rapamycin (serine/threonine kinase) |
| F02 | Hs.654408 | NM_003998 | NFKB1 | Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 |
| F03 | Hs.464779 | NM_000271 | NPC1 | Niemann-Pick disease, type C1 |
| F04 | Hs.464971 | NM_002647 | PIK3C3 | Phosphoinositide-3-kinase, class 3 |
| F05 | Hs.32942 | NM_002649 | PIK3CG | Phosphoinositide-3-kinase, catalytic, gamma polypeptide |
| F06 | Hs.149032 | NM_014602 | PIK3R4 | Phosphoinositide-3-kinase, regulatory subunit 4 |
| F07 | Hs.43322 | NM_006251 | PRKAA1 | Protein kinase, AMP-activated, alpha 1 catalytic subunit |
| F08 | Hs.500466 | NM_000314 | PTEN | Phosphatase and tensin homolog |
| F09 | Hs.16258 | NM_130781 | RAB24 | RAB24, member RAS oncogene family |
| F10 | Hs.408528 | NM_000321 | RB1 | Retinoblastoma 1 |
| F11 | Hs.422336 | NM_005873 | RGS19 | Regulator of G-protein signaling 19 |
| F12 | Hs.463642 | NM_003161 | RPS6KB1 | Ribosomal protein S6 kinase, 70kDa, polypeptide 1 |
| G01 | Hs.271771 | NM_000345 | SNCA | Synuclein, alpha (non A4 component of amyloid precursor) |
| G02 | Hs.437277 | NM_003900 | SQSTM1 | Sequestosome 1 |
| G03 | Hs.645227 | NM_000660 | TGFB1 | Transforming growth factor, beta 1 |
| G04 | Hs.517033 | NM_004613 | TGM2 | Transglutaminase 2 (C polypeptide, protein-glutamine-gamma-glutamyltransferase) |
| G05 | Hs.99439 | NM_153015 | TMEM74 | Transmembrane protein 74 |
| G06 | Hs.241570 | NM_000594 | TNF | Tumor necrosis factor |
| G07 | Hs.478275 | NM_003810 | TNFSF10 | Tumor necrosis factor (ligand) superfamily, member 10 |
| G08 | Hs.654481 | NM_000546 | TP53 | Tumor protein p53 |
| G09 | Hs.47061 | NM_003565 | ULK1 | Unc-51-like kinase 1 (C. elegans) |
| G10 | Hs.168762 | NM_014683 | ULK2 | Unc-51-like kinase 2 (C. elegans) |
| G11 | Hs.728868 | NM_003369 | UVRAG | UV radiation resistance associated gene |
| G12 | Hs.463964 | NM_017983 | WIPI1 | WD repeat domain, phosphoinositide interacting 1 |
| 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, 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. |
|--|---|----------|
| RT ² First Strand Kit (12) | Enzymes and reagents for cDNA synthesis | 330401 |
| RT ² 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 ² 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 |
| RT ² 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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