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

## Mouse PPAR Targets

### Cat. no. 330231 PAMM-149ZA

### 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 PPAR Targets RT² Profiler PCR Array profiles the expression of 84 key genes involved in peroxisome proliferator-activated receptor (PPAR) activation and response. The PPARs are nuclear hormone receptors important in regulating lipid metabolism, cellular differentiation, and proliferation. The 3 PPAR isoforms have similar functions but different tissue distributions: alpha (adipose tissue, liver, and muscle), beta/delta (widely-expressed), and gamma (adipose tissue and muscle). Ligands such as fatty acids activate these receptors causing them to heterodimerize with the retinoid X receptors (RXR) and initiate transcription of target genes. Multiple different coactivators and corepressors interact with the PPAR/RXR heterodimers to direct target gene specificity. Dysregulation of PPAR activity is a potential cause of metabolic syndrome-related disorders, such as insulin resistance and hypercholesterolemia. This array includes PPAR targets involved in adipogenesis, lipid transport and metabolism, and insulin signaling. Genes involved in PPAR ligand transport as well as transcription factors and cofactors are also included. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in PPAR signal transduction 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 | Acaa2 | Acadl | Acadm | Acox1 | Acox3 | Acsl1 | Acsl3 | Acsl4 | Acsl5 | Adipoq | Angptl4 | Apoa1 |
| B | Apoa5 | Apoc3 | Apoe | BC006779 | Cd36 | Chd9 | Clu | Cpt1a | Cpt1b | Cpt2 | Creb1 | Crebbp |
| C | Cyp27a1 | Cyp4a10 | Cyp7a1 | Dgat1 | Ech1 | Ehhadh | Eln | Ep300 | Etfdh | Fabp1 | Fabp2 | Fabp3 |
| D | Fabp4 | Fabp5 | Fabp6 | Fabp7 | Fads2 | Fgr | Gyk | Hif1a | Hmgcs2 | Hspd1 | Ilk | Klf10 |
| E | Lpl | Med1 | Mlycd | Mmp9 | Ncoa3 | Ncoa6 | Nr1h3 | Olr1 | Pck1 | Pck2 | Pdpk1 | Pltp |
| F | Ppara | Ppard | Pparg | Ppargc1a | Ppargc1b | Pprc1 | Pten | Rxra | Rxrb | Rxrg | Scd1 | Sirt1 |
| G | Slc22a5 | Slc27a1 | Slc27a2 | Slc27a4 | Slc27a5 | Slc27a6 | Smarcd3 | Sorbs1 | Src | Tgs1 | Txnip | Ucp1 |
| 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.245724 | NM_177470 | Acaa2 | Acetyl-Coenzyme A acyltransferase 2 (mitochondrial 3-oxoacyl-Coenzyme A thiolase) |
| A02 | Mm.2445 | NM_007381 | Acadl | Acyl-Coenzyme A dehydrogenase, long-chain |
| A03 | Mm.10530 | NM_007382 | Acadm | Acyl-Coenzyme A dehydrogenase, medium chain |
| A04 | Mm.356689 | NM_015729 | Acox1 | Acyl-Coenzyme A oxidase 1, palmitoyl |
| A05 | Mm.291503 | NM_030721 | Acox3 | Acyl-Coenzyme A oxidase 3, pristanoyl |
| A06 | Mm.210323 | NM_007981 | Acsl1 | Acyl-CoA synthetase long-chain family member 1 |
| A07 | Mm.427252 | NM_001033606 | Acsl3 | Acyl-CoA synthetase long-chain family member 3 |
| A08 | Mm.391337 | NM_019477 | Acsl4 | Acyl-CoA synthetase long-chain family member 4 |
| A09 | Mm.292056 | NM_027976 | Acsl5 | Acyl-CoA synthetase long-chain family member 5 |
| A10 | Mm.3969 | NM_009605 | Adipoq | Adiponectin, C1Q and collagen domain containing |
| A11 | Mm.196189 | NM_020581 | Angptl4 | Angiopoietin-like 4 |
| A12 | Mm.26743 | NM_009692 | Apoa1 | Apolipoprotein A-I |
| B01 | Mm.29738 | NM_080434 | Apoa5 | Apolipoprotein A-V |
| B02 | Mm.390161 | NM_023114 | Apoc3 | Apolipoprotein C-III |
| B03 | Mm.305152 | NM_009696 | Apoe | Apolipoprotein E |
| B04 | Mm.315872 | NM_183162 | BC006779 | CDNA sequence BC006779 |
| B05 | Mm.18628 | NM_007643 | Cd36 | CD36 antigen |
| B06 | Mm.100615 | NM_177224 | Chd9 | Chromodomain helicase DNA binding protein 9 |
| B07 | Mm.200608 | NM_013492 | Clu | Clusterin |
| B08 | Mm.18522 | NM_013495 | Cpt1a | Carnitine palmitoyltransferase 1a, liver |
| B09 | Mm.227738 | NM_009948 | Cpt1b | Carnitine palmitoyltransferase 1b, muscle |
| B10 | Mm.307620 | NM_009949 | Cpt2 | Carnitine palmitoyltransferase 2 |
| B11 | Mm.453295 | NM_133828 | Creb1 | CAMP responsive element binding protein 1 |
| B12 | Mm.132238 | NM_001025432 | Crebbp | CREB binding protein |
| C01 | Mm.85083 | NM_024264 | Cyp27a1 | Cytochrome P450, family 27, subfamily a, polypeptide 1 |
| C02 | Mm.10742 | NM_010011 | Cyp4a10 | Cytochrome P450, family 4, subfamily a, polypeptide 10 |
| C03 | Mm.57029 | NM_007824 | Cyp7a1 | Cytochrome P450, family 7, subfamily a, polypeptide 1 |
| C04 | Mm.22633 | NM_010046 | Dgat1 | Diacylglycerol O-acyltransferase 1 |
| C05 | Mm.291776 | NM_016772 | Ech1 | Enoyl coenzyme A hydratase 1, peroxisomal |
| C06 | Mm.28100 | NM_023737 | Ehhadh | Enoyl-Coenzyme A, hydratase/3-hydroxyacyl Coenzyme A dehydrogenase |
| C07 | Mm.275320 | NM_007925 | Eln | Elastin |
| C08 | Mm.258397 | NM_177821 | Ep300 | E1A binding protein p300 |
| C09 | Mm.28336 | NM_025794 | Etfdh | Electron transferring flavoprotein, dehydrogenase |
| C10 | Mm.22126 | NM_017399 | Fabp1 | Fatty acid binding protein 1, liver |
| C11 | Mm.28398 | NM_007980 | Fabp2 | Fatty acid binding protein 2, intestinal |
| C12 | Mm.388886 | NM_010174 | Fabp3 | Fatty acid binding protein 3, muscle and heart |
| D01 | Mm.582 | NM_024406 | Fabp4 | Fatty acid binding protein 4, adipocyte |
| D02 | Mm.741 | NM_010634 | Fabp5 | Fatty acid binding protein 5, epidermal |
| D03 | Mm.142716 | NM_008375 | Fabp6 | Fatty acid binding protein 6, ileal (gastrotropin) |
| D04 | Mm.3644 | NM_021272 | Fabp7 | Fatty acid binding protein 7, brain |
| D05 | Mm.38901 | NM_019699 | Fads2 | Fatty acid desaturase 2 |
| D06 | Mm.271665 | NM_010208 | Fgr | Gardner-Rasheed feline sarcoma viral (Fgr) oncogene homolog |
| D07 | Mm.246682 | NM_008194 | Gyk | Glycerol kinase |
| D08 | Mm.3879 | NM_010431 | Hif1a | Hypoxia inducible factor 1, alpha subunit |

| Position | UniGene | GenBank | Symbol | Description |
|---|---|---|---|---|
| D09 | Mm.289131 | NM_008256 | Hmgcs2 | 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 |
| D10 | Mm.1777 | NM_010477 | Hspd1 | Heat shock protein 1 (chaperonin) |
| D11 | Mm.274846 | NM_010562 | Ilk | Integrin linked kinase |
| D12 | Mm.4292 | NM_013692 | Klf10 | Kruppel-like factor 10 |
| E01 | Mm.1514 | NM_008509 | Lpl | Lipoprotein lipase |
| E02 | Mm.12926 | NM_013634 | Med1 | Mediator complex subunit 1 |
| E03 | Mm.423037 | NM_019966 | Mlycd | Malonyl-CoA decarboxylase |
| E04 | Mm.4406 | NM_013599 | Mmp9 | Matrix metallopeptidase 9 |
| E05 | Mm.476883 | NM_008679 | Ncoa3 | Nuclear receptor coactivator 3 |
| E06 | Mm.27592 | NM_019825 | Ncoa6 | Nuclear receptor coactivator 6 |
| E07 | Mm.22690 | NM_013839 | Nr1h3 | Nuclear receptor subfamily 1, group H, member 3 |
| E08 | Mm.293626 | NM_138648 | Olr1 | Oxidized low density lipoprotein (lectin-like) receptor 1 |
| E09 | Mm.266867 | NM_011044 | Pck1 | Phosphoenolpyruvate carboxykinase 1, cytosolic |
| E10 | Mm.29856 | NM_028994 | Pck2 | Phosphoenolpyruvate carboxykinase 2 (mitochondrial) |
| E11 | Mm.10504 | NM_011062 | Pdpk1 | 3-phosphoinositide dependent protein kinase 1 |
| E12 | Mm.6105 | NM_011125 | Pltp | Phospholipid transfer protein |
| F01 | Mm.212789 | NM_011144 | Ppara | Peroxisome proliferator activated receptor alpha |
| F02 | Mm.328914 | NM_011145 | Ppard | Peroxisome proliferator activator receptor delta |
| F03 | Mm.3020 | NM_011146 | Pparg | Peroxisome proliferator activated receptor gamma |
| F04 | Mm.259072 | NM_008904 | Ppargc1a | Peroxisome proliferative activated receptor, gamma, coactivator 1 alpha |
| F05 | Mm.415302 | NM_133249 | Ppargc1b | Peroxisome proliferative activated receptor, gamma, coactivator 1 beta |
| F06 | Mm.2415 | NM_001081214 | Pprc1 | Peroxisome proliferative activated receptor, gamma, coactivator-related 1 |
| F07 | Mm.245395 | NM_008960 | Pten | Phosphatase and tensin homolog |
| F08 | Mm.24624 | NM_011305 | Rxra | Retinoid X receptor alpha |
| F09 | Mm.1243 | NM_011306 | Rxrb | Retinoid X receptor beta |
| F10 | Mm.3475 | NM_009107 | Rxrg | Retinoid X receptor gamma |
| F11 | Mm.267377 | NM_009127 | Scd1 | Stearoyl-Coenzyme A desaturase 1 |
| F12 | Mm.351459 | NM_019812 | Sirt1 | Sirtuin 1 (silent mating type information regulation 2, homolog) 1 (S. cerevisiae) |
| G01 | Mm.42253 | NM_011396 | Slc22a5 | Solute carrier family 22 (organic cation transporter), member 5 |
| G02 | Mm.38165 | NM_011977 | Slc27a1 | Solute carrier family 27 (fatty acid transporter), member 1 |
| G03 | Mm.290044 | NM_011978 | Slc27a2 | Solute carrier family 27 (fatty acid transporter), member 2 |
| G04 | Mm.330113 | NM_011989 | Slc27a4 | Solute carrier family 27 (fatty acid transporter), member 4 |
| G05 | Mm.10984 | NM_009512 | Slc27a5 | Solute carrier family 27 (fatty acid transporter), member 5 |
| G06 | Mm.258517 | NM_001081072 | Slc27a6 | Solute carrier family 27 (fatty acid transporter), member 6 |
| G07 | Mm.436539 | NM_025891 | Smarcd3 | SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily d, member 3 |
| G08 | Mm.210815 | NM_009166 | Sorbs1 | Sorbin and SH3 domain containing 1 |
| G09 | Mm.22845 | NM_009271 | Src | Rous sarcoma oncogene |
| G10 | Mm.171323 | NM_054089 | Tgs1 | Trimethylguanosine synthase homolog (S. cerevisiae) |
| G11 | Mm.410189 | NM_023719 | Txnip | Thioredoxin interacting protein |
| G12 | Mm.4177 | NM_009463 | Ucp1 | Uncoupling protein 1 (mitochondrial, proton carrier) |
| 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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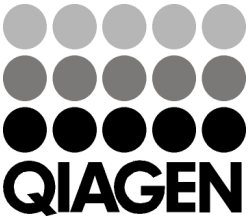


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