

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

## Rat Cell Cycle

Cat. no. 330231 PARN-020ZA

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 Rat Cell Cycle RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 genes key to cell cycle regulation. This array contains genes that both positively and negatively regulate the cell cycle, the transitions between the each of the phases, DNA replication, checkpoints and arrest. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to the cell cycle 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 | Abl1   | Atm   | Aurka | Aurkb | Bcl2     | Birc5  | Brca1   | Brca2  | Casp3  | Ccna1      | Ccna2      | Ccnb1     |
| B | Ccnb2  | Ccnc  | Ccnd1 | Ccnd2 | Ccnd3    | Ccne1  | Ccnf    | Cdc20  | Cdc25a | Cdc25b     | Cdc25c     | Cdc6      |
| C | Cdc7   | Cdk1  | Cdk2  | Cdk4  | Cdk5rap1 | Cdk6   | Cdkn1a  | Cdkn1b | Cdkn2a | Cdkn2b     | Cdkn3      | Chek1     |
| D | Chek2  | Ddit3 | Dst   | E2f1  | E2f3     | E2f4   | Gadd45a | Gpr132 | Hus1   | Inha       | Ilgb1      | LOC367976 |
| E | Mad2l1 | Mcm2  | Mcm4  | Mdm2  | Mki67    | Mre11a | Msh2    | Nbn    | Nek2   | Notch2     | Pkd1       | Pmp22     |
| F | Ppm1d  | Rad17 | Rad21 | Rad51 | Rad9     | Ran    | Rb1     | Rbl1   | Rb12   | RGD1560225 | RGD1566319 | Sfn       |
| G | Shc1   | Skp2  | Slnf1 | Smc1a | Stag1    | Slmn1  | Terf1   | Tfip2  | Tp53   | Tp63       | Tsg101     | Wee1      |
| H | Actb   | B2m   | Hprt1 | Ldha  | Rplp1    | RGDC   | RTC     | RTC    | RTC    | PPC        | PPC        | PPC       |

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

| Position | UniGene   | GenBank      | Symbol   | Description                                               |
|----------|-----------|--------------|----------|-----------------------------------------------------------|
| A01      | Rn.3105   | NM_001100850 | Abl1     | C-abl oncogene 1, receptor tyrosine kinase                |
| A02      | Rn.214048 | NM_001106821 | Atm      | Ataxia telangiectasia mutated homolog (human)             |
| A03      | Rn.161874 | NM_153296    | Aurka    | Aurora kinase A                                           |
| A04      | Rn.10865  | NM_053749    | Aurkb    | Aurora kinase B                                           |
| A05      | Rn.9996   | NM_016993    | Bcl2     | B-cell CLL/lymphoma 2                                     |
| A06      | Rn.54471  | NM_022274    | Birc5    | Baculoviral IAP repeat-containing 5                       |
| A07      | Rn.48840  | NM_012514    | Brca1    | Breast cancer 1                                           |
| A08      | Rn.103225 | NM_031542    | Brca2    | Breast cancer 2                                           |
| A09      | Rn.10562  | NM_012922    | Casp3    | Caspase 3                                                 |
| A10      | Rn.102823 | NM_001011949 | Ccna1    | Cyclin A1                                                 |
| A11      | Rn.13094  | NM_053702    | Ccna2    | Cyclin A2                                                 |
| A12      | Rn.9232   | NM_171991    | Ccnb1    | Cyclin B1                                                 |
| B01      | Rn.6743   | NM_001009470 | Ccnb2    | Cyclin B2                                                 |
| B02      | Rn.106758 | NM_001100472 | Ccnc     | Cyclin C                                                  |
| B03      | Rn.22279  | NM_171992    | Ccnd1    | Cyclin D1                                                 |
| B04      | Rn.96083  | NM_022267    | Ccnd2    | Cyclin D2                                                 |
| B05      | Rn.3483   | NM_012766    | Ccnd3    | Cyclin D3                                                 |
| B06      | Rn.15455  | NM_001100821 | Ccne1    | Cyclin E1                                                 |
| B07      | Rn.15126  | NM_001100474 | Ccnf     | Cyclin F                                                  |
| B08      | Rn.9262   | NM_171993    | Cdc20    | Cell division cycle 20 homolog (S. cerevisiae)            |
| B09      | Rn.11390  | NM_133571    | Cdc25a   | Cell division cycle 25 homolog A (S. pombe)               |
| B10      | Rn.11312  | NM_133572    | Cdc25b   | Cell division cycle 25 homolog B (S. pombe)               |
| B11      | Rn.162298 | NM_001107396 | Cdc25c   | Cell division cycle 25 homolog C (S. pombe)               |
| B12      | Rn.219688 | NM_001108298 | Cdc6     | Cell division cycle 6 homolog (S. cerevisiae)             |
| C01      | Rn.52843  | NM_001108352 | Cdc7     | Cell division cycle 7 homolog (S. cerevisiae)             |
| C02      | Rn.6934   | NM_019296    | Cdk1     | Cyclin-dependent kinase 1                                 |
| C03      | Rn.104460 | NM_199501    | Cdk2     | Cyclin dependent kinase 2                                 |
| C04      | Rn.6115   | NM_053593    | Cdk4     | Cyclin-dependent kinase 4                                 |
| C05      | Rn.203271 | NM_145721    | Cdk5rap1 | CDK5 regulatory subunit associated protein 1              |
| C06      | Rn.162731 | XM_342638    | Cdk6     | Cyclin-dependent kinase 6                                 |
| C07      | Rn.10089  | NM_080782    | Cdkn1a   | Cyclin-dependent kinase inhibitor 1A                      |
| C08      | Rn.29897  | NM_031762    | Cdkn1b   | Cyclin-dependent kinase inhibitor 1B                      |
| C09      | Rn.48717  | NM_031550    | Cdkn2a   | Cyclin-dependent kinase inhibitor 2A                      |
| C10      | Rn.105626 | NM_130812    | Cdkn2b   | Cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4) |
| C11      | Rn.107220 | NM_001106028 | Cdkn3    | Cyclin-dependent kinase inhibitor 3                       |
| C12      | Rn.33267  | NM_080400    | Chek1    | CHK1 checkpoint homolog (S. pombe)                        |
| D01      | Rn.163213 | NM_053677    | Chek2    | CHK2 checkpoint homolog (S. pombe)                        |
| D02      | Rn.11183  | NM_024134    | Ddit3    | DNA-damage inducible transcript 3                         |
| D03      | Rn.79807  | NM_001108208 | Dst      | Dystonin                                                  |
| D04      | Rn.72471  | NM_001100778 | E2f1     | E2F transcription factor 1                                |
| D05      | Rn.73967  | NM_001137626 | E2f3     | E2F transcription factor 3                                |
| D06      | Rn.154586 | XM_226441    | E2f4     | E2F transcription factor 4                                |
| D07      | Rn.10250  | NM_024127    | Gadd45a  | Growth arrest and DNA-damage-inducible, alpha             |
| D08      | Rn.145095 | XM_234574    | Gpr132   | G protein-coupled receptor 132                            |
| D09      | Rn.12812  | NM_001109092 | Hus1     | HUS1 checkpoint homolog (S. pombe)                        |

| Position | UniGene   | GenBank      | Symbol     | Description                                                                                                        |
|----------|-----------|--------------|------------|--------------------------------------------------------------------------------------------------------------------|
| D10      | Rn.8831   | NM_012590    | Inha       | Inhibin alpha                                                                                                      |
| D11      | Rn.25733  | NM_017022    | Itgb1      | Integrin, beta 1                                                                                                   |
| D12      | Rn.154788 | XM_346381    | LOC367976  | Similar to DNA replication licensing factor MCM3 (DNA polymerase alpha holoenzyme-associated protein P1) (P1-MCM3) |
| E01      | Rn.19771  | NM_001106594 | Mad2l1     | MAD2 mitotic arrest deficient-like 1 (yeast)                                                                       |
| E02      | Rn.2715   | NM_001107873 | Mcm2       | Minichromosome maintenance complex component 2                                                                     |
| E03      | Rn.8341   | NM_033651    | Mcm4       | Minichromosome maintenance complex component 4                                                                     |
| E04      | Rn.91829  | NM_001108099 | Mdm2       | Mdm2 p53 binding protein homolog (mouse)                                                                           |
| E05      | Rn.73551  | XM_225460    | Mki67      | Antigen identified by monoclonal antibody Ki-67                                                                    |
| E06      | Rn.209040 | NM_022279    | Mre11a     | MRE11 meiotic recombination 11 homolog A (S. cerevisiae)                                                           |
| E07      | Rn.3174   | NM_031058    | Msh2       | MutS homolog 2 (E. coli)                                                                                           |
| E08      | Rn.25214  | NM_138873    | Nbn        | Nibrin                                                                                                             |
| E09      | Rn.144627 | NM_053691    | Nek2       | NIMA (never in mitosis gene a)-related expressed kinase 2                                                          |
| E10      | Rn.65930  | NM_024358    | Notch2     | Notch homolog 2 (Drosophila)                                                                                       |
| E11      | Rn.127770 | XM_002724589 | Pkd1       | Polycystic kidney disease 1 homolog (human)                                                                        |
| E12      | Rn.1476   | NM_017037    | Pmp22      | Peripheral myelin protein 22                                                                                       |
| F01      | Rn.15540  | NM_001105825 | Ppm1d      | Protein phosphatase 1D magnesium-dependent, delta isoform                                                          |
| F02      | Rn.154275 | NM_001024778 | Rad17      | RAD17 homolog (S. pombe)                                                                                           |
| F03      | Rn.3991   | NM_001025701 | Rad21      | RAD21 homolog (S. pombe)                                                                                           |
| F04      | Rn.214052 | NM_001109204 | Rad51      | RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae)                                                              |
| F05      | Rn.145016 | XM_219684    | Rad9       | RAD9 homolog (S. pombe)                                                                                            |
| F06      | Rn.107698 | NM_053439    | Ran        | RAN, member RAS oncogene family                                                                                    |
| F07      | Rn.55115  | NM_017045    | Rb1        | Retinoblastoma 1                                                                                                   |
| F08      | Rn.208977 | XM_001055763 | Rbl1       | Retinoblastoma-like 1 (p107)                                                                                       |
| F09      | Rn.11020  | NM_031094    | Rbl2       | Retinoblastoma-like 2                                                                                              |
| F10      | N/A       | XM_001058445 | RGD1560225 | Similar to nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1                               |
| F11      | Rn.216753 | NM_001109358 | RGD1566319 | Similar to Sestrin 2 (Hi95)                                                                                        |
| F12      | Rn.145079 | XM_232745    | Sfn        | Stratifin                                                                                                          |
| G01      | Rn.138818 | NM_053517    | Shc1       | SHC (Src homology 2 domain containing) transforming protein 1                                                      |
| G02      | Rn.154278 | NM_001106416 | Skp2       | S-phase kinase-associated protein 2 (p45)                                                                          |
| G03      | Rn.211782 | XM_001068751 | Slfn1      | Schlafen 1                                                                                                         |
| G04      | Rn.11763  | NM_031683    | Smc1a      | Structural maintenance of chromosomes 1A                                                                           |
| G05      | Rn.11715  | NM_001108179 | Stag1      | Stromal antigen 1                                                                                                  |
| G06      | Rn.555    | NM_017166    | Stmn1      | Stathmin 1                                                                                                         |
| G07      | Rn.33853  | NM_001012464 | Terf1      | Telomeric repeat binding factor (NIMA-interacting) 1                                                               |
| G08      | Rn.105731 | NM_001106847 | Tfdp2      | Transcription factor Dp-2 (E2F dimerization partner 2)                                                             |
| G09      | Rn.54443  | NM_030989    | Tp53       | Tumor protein p53                                                                                                  |
| G10      | Rn.42907  | NM_019221    | Tp63       | Tumor protein p63                                                                                                  |
| G11      | Rn.7410   | NM_181628    | Tsg101     | Tumor susceptibility gene 101                                                                                      |
| G12      | Rn.208255 | NM_001012742 | Wee1       | Wee 1 homolog (S. pombe)                                                                                           |
| H01      | Rn.94978  | NM_031144    | Actb       | Actin, beta                                                                                                        |
| H02      | Rn.1868   | NM_012512    | B2m        | Beta-2 microglobulin                                                                                               |
| H03      | Rn.47     | NM_012583    | Hprt1      | Hypoxanthine phosphoribosyltransferase 1                                                                           |
| H04      | Rn.107896 | NM_017025    | Ldha       | Lactate dehydrogenase A                                                                                            |
| H05      | Rn.973    | NM_001007604 | Rplp1      | Ribosomal protein, large, P1                                                                                       |
| H06      | N/A       | U26919       | RGDC       | Rat 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.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

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