

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

## Rat Endothelial Cell Biology

Cat. no. 330231 PARN-015ZA

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 Endothelial Cell Biology RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 genes related to endothelial cell biology. Endothelial cells play a critical role in the progression of disease processes including inflammation, atherosclerosis, and tumor angiogenesis. This array includes genes involved in permissibility and vessel tone, angiogenesis, endothelial cell activation and endothelial cell injury. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to the atherosclerosis 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 | Ace   | Adam17 | Agt   | Agtr1b | Angpt1 | Anxa5 | ApoE     | Bax    | Bcl2   | Bcl2l1   | Calca | Casp1 |
| B | Casp3 | Cav1   | Ccl2  | Ccl5   | Cdh5   | Cflar | Col18a1  | Cx3cl1 | Cxcl1  | Cxcl2    | Cxcr5 | Edn1  |
| C | Edn2  | Ednra  | Eng   | F2r    | F3     | Fas   | Faslg    | Fgf1   | Fgf2   | Flt1     | Fn1   | Hif1a |
| D | Hmox1 | Icam1  | Il11  | Il1b   | Il3    | Il6   | Il7      | Itga5  | Itgav  | Itgb1    | Itgb3 | Kdr   |
| E | Kit   | Mmp1a  | Mmp2  | Mmp9   | Nos3   | Nppb  | Npr1     | Ocln   | Pdgfra | Pecam1   | Pf4   | Pgf   |
| F | Plat  | Plau   | Plg   | Plgis  | Plgs2  | Plk2  | Sele     | Sell   | Selp   | Serpine1 | Sod1  | Tek   |
| G | Tlpi  | Tgfb1  | Thbd  | Thbs1  | Timp1  | Tnf   | Tnfrsf10 | Tymp   | Vcam1  | Vegfa    | Vwf   | Xdh   |
| 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.10149  | NM_012544    | Ace     | Angiotensin I converting enzyme (peptidyl-dipeptidase A) 1                              |
| A02      | Rn.144585 | NM_020306    | Adam17  | ADAM metalloproteinase domain 17                                                        |
| A03      | Rn.6319   | NM_134432    | Agt     | Angiotensinogen (serpin peptidase inhibitor, clade A, member 8)                         |
| A04      | Rn.9815   | NM_031009    | Agtr1b  | Angiotensin II receptor, type 1b                                                        |
| A05      | Rn.161953 | NM_053546    | Angpt1  | Angiopietin 1                                                                           |
| A06      | Rn.3318   | NM_013132    | Anxa5   | Annexin A5                                                                              |
| A07      | Rn.32351  | NM_138828    | ApoE    | Apolipoprotein E                                                                        |
| A08      | Rn.10668  | NM_017059    | Bax     | Bcl2-associated X protein                                                               |
| A09      | Rn.9996   | NM_016993    | Bcl2    | B-cell CLL/lymphoma 2                                                                   |
| A10      | Rn.10323  | NM_031535    | Bcl2l1  | Bcl2-like 1                                                                             |
| A11      | Rn.90085  | NM_017338    | Calca   | Calcitonin-related polypeptide alpha                                                    |
| A12      | Rn.37508  | NM_012762    | Casp1   | Caspase 1                                                                               |
| B01      | Rn.10562  | NM_012922    | Casp3   | Caspase 3                                                                               |
| B02      | Rn.22518  | NM_031556    | Cav1    | Caveolin 1, caveolae protein                                                            |
| B03      | Rn.4772   | NM_031530    | Ccl2    | Chemokine (C-C motif) ligand 2                                                          |
| B04      | Rn.8019   | NM_031116    | Ccl5    | Chemokine (C-C motif) ligand 5                                                          |
| B05      | Rn.164510 | NM_001107407 | Cdh5    | Cadherin 5                                                                              |
| B06      | Rn.204752 | NM_057138    | Cflar   | CASP8 and FADD-like apoptosis regulator                                                 |
| B07      | Rn.12030  | XM_241632    | Col18a1 | Collagen, type XVIII, alpha 1                                                           |
| B08      | Rn.107266 | NM_134455    | Cx3cl1  | Chemokine (C-X3-C motif) ligand 1                                                       |
| B09      | Rn.10907  | NM_030845    | Cxcl1   | Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)          |
| B10      | Rn.10230  | NM_053647    | Cxcl2   | Chemokine (C-X-C motif) ligand 2                                                        |
| B11      | Rn.127121 | NM_053303    | Cxcr5   | Chemokine (C-X-C motif) receptor 5                                                      |
| B12      | Rn.10918  | NM_012548    | Edn1    | Endothelin 1                                                                            |
| C01      | Rn.10642  | NM_012549    | Edn2    | Endothelin 2                                                                            |
| C02      | Rn.10915  | NM_012550    | Ednra   | Endothelin receptor type A                                                              |
| C03      | Rn.187025 | NM_001010968 | Eng     | Endoglin                                                                                |
| C04      | Rn.2609   | NM_012950    | F2r     | Coagulation factor II (thrombin) receptor                                               |
| C05      | Rn.9980   | NM_013057    | F3      | Coagulation factor III (thromboplastin, tissue factor)                                  |
| C06      | Rn.162521 | NM_139194    | Fas     | Fas (TNF receptor superfamily, member 6)                                                |
| C07      | Rn.9725   | NM_012908    | Faslg   | Fas ligand (TNF superfamily, member 6)                                                  |
| C08      | Rn.88013  | NM_012846    | Fgf1    | Fibroblast growth factor 1                                                              |
| C09      | Rn.31808  | NM_019305    | Fgf2    | Fibroblast growth factor 2                                                              |
| C10      | Rn.10239  | NM_019306    | Flt1    | Fms-related tyrosine kinase 1                                                           |
| C11      | Rn.1604   | NM_019143    | Fn1     | Fibronectin 1                                                                           |
| C12      | Rn.10852  | NM_024359    | Hif1a   | Hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor) |
| D01      | Rn.3160   | NM_012580    | Hmox1   | Heme oxygenase (decycling) 1                                                            |
| D02      | Rn.12     | NM_012967    | Icam1   | Intercellular adhesion molecule 1                                                       |
| D03      | Rn.198483 | NM_133519    | Il11    | Interleukin 11                                                                          |
| D04      | Rn.9869   | NM_031512    | Il1b    | Interleukin 1 beta                                                                      |
| D05      | Rn.10652  | NM_031513    | Il3     | Interleukin 3                                                                           |
| D06      | Rn.9873   | NM_012589    | Il6     | Interleukin 6                                                                           |
| D07      | Rn.10793  | NM_013110    | Il7     | Interleukin 7                                                                           |
| D08      | Rn.100796 | NM_001108118 | Itga5   | Integrin, alpha 5 (fibronectin receptor, alpha polypeptide)                             |

| Position | UniGene   | GenBank      | Symbol   | Description                                                                                   |
|----------|-----------|--------------|----------|-----------------------------------------------------------------------------------------------|
| D09      | Rn.23339  | NM_001106549 | Itgav    | Integrin, alpha V                                                                             |
| D10      | Rn.25733  | NM_017022    | Itgb1    | Integrin, beta 1                                                                              |
| D11      | Rn.162202 | NM_153720    | Itgb3    | Integrin, beta 3                                                                              |
| D12      | Rn.88869  | NM_013062    | Kdr      | Kinase insert domain receptor                                                                 |
| E01      | Rn.54004  | NM_022264    | Kit      | V-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog                                 |
| E02      | Rn.79007  | NM_001134530 | Mmp1a    | Matrix metalloproteinase 1a (interstitial collagenase)                                        |
| E03      | Rn.6422   | NM_031054    | Mmp2     | Matrix metalloproteinase 2                                                                    |
| E04      | Rn.10209  | NM_031055    | Mmp9     | Matrix metalloproteinase 9                                                                    |
| E05      | Rn.44265  | NM_021838    | Nos3     | Nitric oxide synthase 3, endothelial cell                                                     |
| E06      | Rn.3835   | NM_031545    | Nppb     | Natriuretic peptide precursor B                                                               |
| E07      | Rn.10463  | NM_012613    | Npr1     | Natriuretic peptide receptor A/guanylate cyclase A (atrionatriuretic peptide receptor A)      |
| E08      | Rn.31429  | NM_031329    | Ocln     | Occludin                                                                                      |
| E09      | Rn.55127  | NM_012802    | Pdgfra   | Platelet derived growth factor receptor, alpha polypeptide                                    |
| E10      | Rn.1878   | NM_031591    | Pecam1   | Platelet/endothelial cell adhesion molecule 1                                                 |
| E11      | Rn.6800   | NM_001007729 | Pf4      | Platelet factor 4                                                                             |
| E12      | Rn.6960   | NM_053595    | Pgf      | Placental growth factor                                                                       |
| F01      | Rn.107102 | NM_013151    | Plat     | Plasminogen activator, tissue                                                                 |
| F02      | Rn.6064   | NM_013085    | Plau     | Plasminogen activator, urokinase                                                              |
| F03      | Rn.20178  | NM_053491    | Plg      | Plasminogen                                                                                   |
| F04      | Rn.73051  | NM_031557    | Ptgis    | Prostaglandin I2 (prostacyclin) synthase                                                      |
| F05      | Rn.44369  | NM_017232    | Ptgs2    | Prostaglandin-endoperoxide synthase 2                                                         |
| F06      | Rn.2809   | NM_013081    | Ptk2     | PTK2 protein tyrosine kinase 2                                                                |
| F07      | Rn.10359  | NM_138879    | Sele     | Selectin E                                                                                    |
| F08      | Rn.10461  | NM_019177    | Sell     | Selectin L                                                                                    |
| F09      | Rn.10012  | NM_013114    | Selp     | Selectin P                                                                                    |
| F10      | Rn.29367  | NM_012620    | Serpine1 | Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1 |
| F11      | Rn.6059   | NM_017050    | Sod1     | Superoxide dismutase 1, soluble                                                               |
| F12      | Rn.9159   | NM_001105737 | Tek      | TEK tyrosine kinase, endothelial                                                              |
| G01      | Rn.15795  | NM_017200    | Tfpi     | Tissue factor pathway inhibitor (lipoprotein-associated coagulation inhibitor)                |
| G02      | Rn.40136  | NM_021578    | Tgfb1    | Transforming growth factor, beta 1                                                            |
| G03      | Rn.88295  | NM_031771    | Thbd     | Thrombomodulin                                                                                |
| G04      | Rn.185771 | NM_001013062 | Thbs1    | Thrombospondin 1                                                                              |
| G05      | Rn.25754  | NM_053819    | Timp1    | TIMP metalloproteinase inhibitor 1                                                            |
| G06      | Rn.2275   | NM_012675    | Tnf      | Tumor necrosis factor (TNF superfamily, member 2)                                             |
| G07      | Rn.83627  | NM_145681    | Tnfsf10  | Tumor necrosis factor (ligand) superfamily, member 10                                         |
| G08      | Rn.219088 | NM_001012122 | Tymp     | Thymidine phosphorylase                                                                       |
| G09      | Rn.11267  | NM_012889    | Vcam1    | Vascular cell adhesion molecule 1                                                             |
| G10      | Rn.1923   | NM_031836    | Vegfa    | Vascular endothelial growth factor A                                                          |
| G11      | Rn.35561  | XM_342759    | Vwf      | Von Willebrand factor                                                                         |
| G12      | Rn.202951 | NM_017154    | Xdh      | Xanthine dehydrogenase                                                                        |
| 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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