

RT² Profiler PCR Array (Rotor-Gene® Format)

Dog Epithelial to Mesenchymal Transition (EMT)

Cat. no. 330231 PAFD-090ZR

For pathway expression analysis

| Format | For use with the following real-time cyclers |
|---|--|
| RT ² Profiler PCR Array, Format R | Rotor-Gene Q, other Rotor-Gene cyclers |

Description

The Dog Epithelial to Mesenchymal Transition (EMT) RT² Profiler™ PCR Array profiles the expression of 84 key genes that either change their expression during this process or regulate those gene expression changes. EMT and the reciprocal mesenchymal to epithelial transition (MET) are key processes involved in both tumor metastasis and stem cell differentiation and development. During EMT, epithelial cells lose their apical and basolateral polarity, break their intercellular tight junctions, and degrade basement membrane extracellular matrix components to become migratory mesenchymal cells. As such, the array includes cell surface receptor, extracellular matrix, and cytoskeletal genes mediating cell adhesion, migration, motility, and morphogenesis; genes controlling cell differentiation, development, growth, and proliferation; as well as signal transduction and transcription factor genes that cause EMT and all of its associated processes. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in tumor metastasis or stem cell differentiation and development with this array.

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



Shipping and storage

RT² Profiler PCR Arrays in the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

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

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc™ (plate A1–A12=Rotor-Disc 1–12, plate B1–B12=Rotor-Disc 13–24, etc.). To maintain data analysis compatibility, wells 97–100 do not contain real-time assays but will contain master mix to account for weight balance.

Gene table: RT² Profiler PCR Array

| Position | UniGene | GenBank | Symbol | Description |
|----------|-----------|--------------|-----------|--|
| A01 | N/A | XM_014121013 | AHNAK | AHNAK nucleoprotein |
| A02 | N/A | XM_005623876 | AKT1 | V-akt murine thymoma viral oncogene homolog 1 |
| A03 | N/A | XM_846269 | BMP1 | Bone morphogenetic protein 1 |
| A04 | N/A | XM_534351 | BMP2 | Bone morphogenetic protein 2 |
| A05 | Cfa.8 | NM_001197052 | BMP7 | Bone morphogenetic protein 7 |
| A06 | N/A | XM_005629597 | CALD1 | Caldesmon 1 |
| A07 | Cfa.3488 | NM_001287125 | CDH1 | Cadherin 1, type 1, E-cadherin (epithelial) |
| A08 | N/A | NM_001287156 | CDH2 | Cadherin 2, type 1, N-cadherin (neuronal) |
| A09 | Cfa.1262 | NM_001003187 | COL1A2 | Collagen, type I, alpha 2 |
| A10 | Cfa.3093 | XM_845916 | COL3A1 | Collagen, type III, alpha 1 |
| A11 | N/A | XM_005640393 | COL5A2 | Collagen, type V, alpha 2 |
| A12 | N/A | XM_003638769 | CTGF | Connective tissue growth factor-like |
| B01 | Cfa.415 | NM_001137652 | CTNNB1 | Catenin (cadherin-associated protein), beta 1, 88kDa |
| B02 | Cfa.3718 | XM_861837 | DSC2 | Desmocollin 2 |
| B03 | N/A | XM_545329 | DSP | Desmoplakin |
| B04 | Cfa.3903 | XM_014120756 | EGFR | Epidermal growth factor receptor |
| B05 | N/A | XM_538226 | ERBB3 | V-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian) |
| B06 | Cfa.3504 | NM_001286958 | ESR1 | Estrogen receptor 1 |
| B07 | N/A | XM_005640879 | F11R | F11 receptor |
| B08 | Cfa.47867 | XM_014110981 | FN1 | Fibronectin 1 |
| B09 | N/A | XM_014113959 | FOXC2 | Forkhead box C2 (MFH-1, mesenchyme forkhead 1) |
| B10 | N/A | XM_545599 | FZD7 | Frizzled family receptor 7 |
| B11 | N/A | XM_005623351 | GEMIN2 | Gem (nuclear organelle) associated protein 2 |
| B12 | N/A | XM_847378 | GNG11 | Guanine nucleotide binding protein (G protein), gamma 11 |
| C01 | N/A | XM_005623927 | GSC | Goosecoid homeobox |
| C02 | N/A | XM_535751 | GSK3B | Glycogen synthase kinase 3 beta |
| C03 | N/A | XM_845091 | IGFBP4 | Insulin-like growth factor binding protein 4 |
| C04 | Cfa.3496 | NM_001003096 | IL1RN | Interleukin 1 receptor antagonist |
| C05 | N/A | XM_534040 | ILK | Integrin-linked kinase |
| C06 | N/A | XM_005636739 | ITGA5 | Integrin, alpha 5 (fibronectin receptor, alpha polypeptide) |
| C07 | N/A | XM_014110784 | ITGAV | Integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51) |
| C08 | N/A | XM_005616948 | ITGB1 | Integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12) |
| C09 | N/A | XM_005634783 | JAG1 | Jagged 1 |
| C10 | Cfa.46653 | NM_001253741 | KRT14 | Keratin 14 |
| C11 | Cfa.21760 | NM_001253742 | KRT19 | Keratin 19, type I |
| C12 | N/A | XM_005636798 | KRT7 | Keratin 7 |
| D01 | N/A | XM_005618560 | LOC488818 | Fibroblast growth factor-binding protein 1-like |
| D02 | N/A | XM_532014 | LOC612942 | Transmembrane protein with EGF-like and two follistatin-like domains 1 |

| Position | UniGene | GenBank | Symbol | Description |
|-----------------|----------------|----------------|---------------|---|
| D03 | N/A | XM_535269 | MAP1B | Microtubule-associated protein 1B |
| D04 | Cfa.2682 | NM_001003337 | MITF | Microphthalmia-associated transcription factor |
| D05 | Cfa.3597 | XM_014109407 | MMP2 | Matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase) |
| D06 | Cfa.3447 | NM_001002967 | MMP3 | Matrix metallopeptidase 3 (stromelysin 1, progelatinase) |
| D07 | Cfa.3470 | NM_001003219 | MMP9 | Matrix metallopeptidase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase) |
| D08 | N/A | XM_005641418 | MSN | Moesin |
| D09 | Cfa.10759 | XM_533823 | MST1R | Macrophage stimulating 1 receptor (c-met-related tyrosine kinase) |
| D10 | N/A | XM_546146 | NODAL | Nodal homolog (mouse) |
| D11 | N/A | XM_005625433 | NOTCH1 | Notch 1 |
| D12 | N/A | XM_005619008 | NUDT13 | Nudix (nucleoside diphosphate linked moiety X)-type motif 13 |
| E01 | Cfa.3606 | NM_001003195 | OCLN | Occludin |
| E02 | Cfa.3909 | NM_001003382 | PDGFRB | Platelet-derived growth factor receptor, beta polypeptide |
| E03 | N/A | XM_014115694 | PLEK2 | Pleckstrin 2 |
| E04 | N/A | XM_005627993 | PTK2 | Protein tyrosine kinase 2 |
| E05 | N/A | XM_538984 | PTP4A1 | Protein tyrosine phosphatase type IVA, member 1 |
| E06 | Cfa.40290 | NM_001003274 | RAC1 | Ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1) |
| E07 | N/A | XM_014111292 | RGS2 | Regulator of G-protein signaling 2, 24kDa |
| E08 | Cfa.109 | NM_001197095 | SERPINE1 | Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1 |
| E09 | N/A | XM_005622830 | SMAD2 | SMAD family member 2 |
| E10 | N/A | XM_005635167 | SNAI1 | Snail family zinc finger 1 |
| E11 | Cfa.46828 | NM_001097981 | SNAI2 | Snail homolog 2 (Drosophila) |
| E12 | N/A | XM_846102 | SNAI3 | Snail homolog 3 (Drosophila) |
| F01 | N/A | XM_538379 | SOX10 | SRY (sex determining region Y)-box 10 |
| F02 | N/A | XM_849889 | SPARC | Secreted protein, acidic, cysteine-rich (osteonectin) |
| F03 | Cfa.9240 | XM_003434023 | SPP1 | Secreted phosphoprotein 1 |
| F04 | N/A | XM_548090 | STAT3 | Signal transducer and activator of transcription 3 (acute-phase response factor) |
| F05 | N/A | XM_005628485 | STEAP1 | Six transmembrane epithelial antigen of the prostate 1 |
| F06 | N/A | XM_014122282 | TCF3 | Transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47) |
| F07 | Cfa.3808 | NM_001003268 | TCF4 | Transcription factor 4 |
| F08 | N/A | XM_849796 | TCF7L1 | Transcription factor 7-like 1 (T-cell specific, HMG-box) |
| F09 | N/A | XM_532462 | TFPI2 | Tissue factor pathway inhibitor 2 |
| F10 | Cfa.3509 | NM_001003309 | TGFB1 | Transforming growth factor, beta 1 |
| F11 | Cfa.3367 | XM_545713 | TGFB2 | Transforming growth factor, beta 2 |
| F12 | Cfa.24656 | XM_849026 | TGFB3 | Transforming growth factor, beta 3 |
| G01 | Cfa.3680 | NM_001003182 | TIMP1 | TIMP metallopeptidase inhibitor 1 |
| G02 | N/A | XM_850086 | TMEM132A | Transmembrane protein 132A |
| G03 | N/A | XM_539449 | TSPAN13 | Tetraspanin 13 |
| G04 | N/A | XM_845879 | TWIST1 | Twist homolog 1 (Drosophila) |
| G05 | N/A | XM_003434417 | VCAN | Versican |

| Position | UniGene | GenBank | Symbol | Description |
|-----------------|----------------|----------------|---------------|--|
| G06 | Cfa.25093 | NM_001287023 | VIM | Vimentin |
| G07 | N/A | XM_014117463 | VPS13A | Vacuolar protein sorting 13 homolog A (<i>S. cerevisiae</i>) |
| G08 | N/A | XM_542301 | WNT11 | Wingless-type MMTV integration site family, member 11 |
| G09 | Cfa.47426 | NM_001287075 | WNT5A | Wingless-type MMTV integration site family, member 5A |
| G10 | N/A | XM_543883 | WNT5B | Wingless-type MMTV integration site family, member 5B |
| G11 | N/A | XM_003638879 | ZEB1 | Zinc finger E-box binding homeobox 1 |
| G12 | N/A | XM_005631964 | ZEB2 | Zinc finger E-box binding homeobox 2 |
| H01 | Cfa.17735 | NM_001195845 | ACTB | Actin, beta |
| H02 | N/A | XM_535458 | B2M | Beta-2-microglobulin |
| H03 | Cfa.36213 | NM_001003142 | GAPDH | Glyceraldehyde-3-phosphate dehydrogenase |
| H04 | Cfa.4551 | NM_001003357 | HPRT1 | Hypoxanthine phosphoribosyltransferase 1 |
| H05 | N/A | XM_014109387 | RPLP1 | Ribosomal protein, large, P1 |
| H06 | N/A | SA_00130 | FGDC | Dog 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 ROX [™] FAST Mastermix (2)* | For 2 x 96 assays in 96-well plates; suitable for use with the Rotor-Gene Q and other Rotor-Gene cyclers | 330620 |

* 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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