# RT² Profiler PCR Array (Rotor-Gene® Format)

# Human Cell Junction PathwayFinder

## Cat. no. 330231 PAHS-213ZR

## For pathway expression analysis

| Format | For use with the following real-time cyclers |
|---|---|
| RT² Profiler PCR Array, Format R | Rotor-Gene Q, other Rotor-Gene cyclers |

## Description

The Human Cell Junction PathwayFinder RT² Profiler PCR Array profiles the expression of 84 key genes encoding components of various subcellular macromolecular structures connecting cells to each other or to the extracellular matrix (ECM). Cell junctions include focal adhesions, tight junctions, gap junctions, adherens junctions, desmosomes, and hemidesmosomes, and each one plays a specific role in adhesion, communication, and transduction of mechanical force. Tight junctions seal adjacent epithelial cells together, preventing the passage of most dissolved molecules as well as membrane-bound lipids and proteins between the apical and basolateral epithelial surfaces. Adjacent cells communicate through gap junctions that allow ions and small molecules to pass between their cytoplasms. Adherens junctions and desmosomes form around cadherin-mediated cell–cell contacts, while focal adhesions and hemidesmosomes form around integrin-mediated cell–ECM contacts. Adherens junctions and focal adhesions connect the intracellular domains of their cell surface receptors to actin filaments, while the desmosomes and hemidesmosomes connect to intermediate filaments. Although specific cell junctions predominate in certain cell types, all cells interact with their environment via more than one or even all of these junctions. Analyzing the expression of junction components can help determine their relative importance to the biology of the cellular or disease processes under study. Follow-up studies with arrays specific to the relevant junctions can then further explore the junctions' roles in cell biology. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in cell-cell and cell-ECM junctions 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 | Hs.74034 | NM_001753 | CAV1 | Caveolin 1, caveolae protein, 22kDa |
| A02 | Hs.212332 | NM_001233 | CAV2 | Caveolin 2 |
| A03 | Hs.98303 | NM_001234 | CAV3 | Caveolin 3 |
| A04 | Hs.461086 | NM_004360 | CDH1 | Cadherin 1, type 1, E-cadherin (epithelial) |
| A05 | Hs.464829 | NM_001792 | CDH2 | Cadherin 2, type 1, N-cadherin (neuronal) |
| A06 | Hs.439060 | NM_021101 | CLDN1 | Claudin 1 |
| A07 | Hs.534377 | NM_182848 | CLDN10 | Claudin 10 |
| A08 | Hs.31595 | NM_005602 | CLDN11 | Claudin 11 |
| A09 | Hs.258576 | NM_012129 | CLDN12 | Claudin 12 |
| A10 | Hs.660278 | NM_144492 | CLDN14 | Claudin 14 |
| A11 | Hs.38738 | NM_014343 | CLDN15 | Claudin 15 |
| A12 | Hs.251391 | NM_006580 | CLDN16 | Claudin 16 |
| B01 | Hs.258589 | NM_012131 | CLDN17 | Claudin 17 |
| B02 | Hs.655324 | NM_016369 | CLDN18 | Claudin 18 |
| B03 | Hs.496270 | NM_148960 | CLDN19 | Claudin 19 |
| B04 | Hs.522746 | NM_020384 | CLDN2 | Claudin 2 |
| B05 | Hs.647023 | NM_001306 | CLDN3 | Claudin 3 |
| B06 | Hs.729359 | NM_001305 | CLDN4 | Claudin 4 |
| B07 | Hs.505337 | NM_003277 | CLDN5 | Claudin 5 |
| B08 | Hs.533779 | NM_021195 | CLDN6 | Claudin 6 |
| B09 | Hs.513915 | NM_001307 | CLDN7 | Claudin 7 |
| B10 | Hs.162209 | NM_199328 | CLDN8 | Claudin 8 |
| B11 | Hs.296949 | NM_020982 | CLDN9 | Claudin 9 |
| B12 | Hs.379912 | NM_005618 | DLL1 | Delta-like 1 (Drosophila) |
| C01 | Hs.567260 | NM_004948 | DSC1 | Desmocollin 1 |
| C02 | Hs.95612 | NM_004949 | DSC2 | Desmocollin 2 |
| C03 | Hs.41690 | NM_001941 | DSC3 | Desmocollin 3 |
| C04 | Hs.2633 | NM_001942 | DSG1 | Desmoglein 1 |
| C05 | Hs.412597 | NM_001943 | DSG2 | Desmoglein 2 |
| C06 | Hs.1925 | NM_001944 | DSG3 | Desmoglein 3 |
| C07 | Hs.407618 | NM_177986 | DSG4 | Desmoglein 4 |
| C08 | Hs.519873 | NM_004415 | DSP | Desmoplakin |
| C09 | Hs.728928 | NM_015548 | DST | Dystonin |
| C10 | Hs.173840 | NM_138961 | ESAM | Endothelial cell adhesion molecule |
| C11 | Hs.517293 | NM_016946 | F11R | F11 receptor |
| C12 | Hs.74471 | NM_000165 | GJA1 | Gap junction protein, alpha 1, 43kDa |
| D01 | Hs.130313 | NM_021954 | GJA3 | Gap junction protein, alpha 3, 46kDa |
| D02 | Hs.296310 | NM_002060 | GJA4 | Gap junction protein, alpha 4, 37kDa |
| D03 | Hs.447968 | NM_181703 | GJA5 | Gap junction protein, alpha 5, 40kDa |
| D04 | Hs.632441 | NM_005267 | GJA8 | Gap junction protein, alpha 8, 50kDa |
| D05 | Hs.333303 | NM_000166 | GJB1 | Gap junction protein, beta 1, 32kDa |
| D06 | Hs.524894 | NM_004004 | GJB2 | Gap junction protein, beta 2, 26kDa |
| D07 | Hs.522561 | NM_024009 | GJB3 | Gap junction protein, beta 3, 31kDa |
| D08 | Hs.351203 | NM_153212 | GJB4 | Gap junction protein, beta 4, 30.3kDa |
| D09 | Hs.198249 | NM_005268 | GJB5 | Gap junction protein, beta 5, 31.1kDa |
| D10 | Hs.511757 | NM_006783 | GJB6 | Gap junction protein, beta 6, 30kDa |
| D11 | Hs.100072 | NM_020435 | GJC2 | Gap junction protein, gamma 2, 47kDa |
| D12 | Hs.283816 | NM_020660 | GJD2 | Gap junction protein, delta 2, 36kDa |
| E01 | Hs.647524 | NM_181538 | GJE1 | Gap junction protein, epsilon 1, 23kDa |
| E02 | Hs.643447 | NM_000201 | ICAM1 | Intercellular adhesion molecule 1 |
| E03 | Hs.431460 | NM_000873 | ICAM2 | Intercellular adhesion molecule 2 |
| E04 | Hs.644352 | NM_181501 | ITGA1 | Integrin, alpha 1 |
| E05 | Hs.482077 | NM_002203 | ITGA2 | Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor) |
| E06 | Hs.265829 | NM_002204 | ITGA3 | Integrin, alpha 3 (antigen CD49C, alpha 3 subunit of VLA-3 receptor) |
| E07 | Hs.694732 | NM_000885 | ITGA4 | Integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4 receptor) |
| E08 | Hs.505654 | NM_002205 | ITGA5 | Integrin, alpha 5 (fibronectin receptor, alpha polypeptide) |
| E09 | Hs.133397 | NM_000210 | ITGA6 | Integrin, alpha 6 |

| Position | UniGene | GenBank | Symbol | Description |
|---|---|---|---|---|
| E10 | Hs.524484 | NM_002206 | ITGA7 | Integrin, alpha 7 |
| E11 | Hs.171311 | NM_003638 | ITGA8 | Integrin, alpha 8 |
| E12 | Hs.113157 | NM_002207 | ITGA9 | Integrin, alpha 9 |
| F01 | Hs.174103 | NM_002209 | ITGAL | Integrin, alpha L (antigen CD11A (p180), lymphocyte function-associated antigen 1; alpha polypeptide) |
| F02 | Hs.172631 | NM_000632 | ITGAM | Integrin, alpha M (complement component 3 receptor 3 subunit) |
| F03 | Hs.436873 | NM_002210 | ITGAV | Integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51) |
| F04 | Hs.643813 | NM_002211 | ITGB1 | Integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12) |
| F05 | Hs.375957 | NM_000211 | ITGB2 | Integrin, beta 2 (complement component 3 receptor 3 and 4 subunit) |
| F06 | Hs.218040 | NM_000212 | ITGB3 | Integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61) |
| F07 | Hs.632226 | NM_000213 | ITGB4 | Integrin, beta 4 |
| F08 | Hs.536663 | NM_002213 | ITGB5 | Integrin, beta 5 |
| F09 | Hs.470399 | NM_000888 | ITGB6 | Integrin, beta 6 |
| F10 | Hs.517227 | NM_021219 | JAM2 | Junctional adhesion molecule 2 |
| F11 | Hs.150718 | NM_032801 | JAM3 | Junctional adhesion molecule 3 |
| F12 | Hs.514174 | NM_002230 | JUP | Junction plakoglobin |
| G01 | Hs.495473 | NM_017617 | NOTCH1 | Notch 1 |
| G02 | Hs.487360 | NM_024408 | NOTCH2 | Notch 2 |
| G03 | Hs.8546 | NM_000435 | NOTCH3 | Notch 3 |
| G04 | Hs.436100 | NM_004557 | NOTCH4 | Notch 4 |
| G05 | Hs.592605 | NM_002538 | OCLN | Occludin |
| G06 | Hs.434248 | NM_000445 | PLEC | Plectin |
| G07 | Hs.334846 | NM_002855 | PVRL1 | Poliovirus receptor-related 1 (herpesvirus entry mediator C) |
| G08 | Hs.655455 | NM_002856 | PVRL2 | Poliovirus receptor-related 2 (herpesvirus entry mediator B) |
| G09 | Hs.293917 | NM_015480 | PVRL3 | Poliovirus receptor-related 3 |
| G10 | Hs.510833 | NM_175610 | TJP1 | Tight junction protein 1 (zona occludens 1) |
| G11 | Hs.50382 | NM_004817 | TJP2 | Tight junction protein 2 (zona occludens 2) |
| G12 | Hs.25527 | NM_014428 | TJP3 | Tight junction protein 3 (zona occludens 3) |
| 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. |
|---|---|---|
| RT² First Strand Kit (12) | Enzymes and reagents for cDNA synthesis | 330401 |
| RT² 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.

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 or can be requested from QIAGEN Technical Services or your local distributor.



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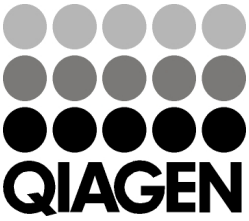


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