

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

Human Cell Junction PathwayFinder

Cat. no. 330231 PAHS-213ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² 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 ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon [®] , DNA Engine Opticon 2; Stratagene Mx4000 [®]
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche [®] LightCycler [®] 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm [®] BioMark™



Sample & Assay Technologies

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 cytoplasm. 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 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	CAV1	CAV2	CAV3	CDH1	CDH2	CLDN1	CLDN10	CLDN11	CLDN12	CLDN14	CLDN15	CLDN16
B	CLDN17	CLDN18	CLDN19	CLDN2	CLDN3	CLDN4	CLDN5	CLDN6	CLDN7	CLDN8	CLDN9	DLL1
C	DSC1	DSC2	DSC3	DSG1	DSG2	DSG3	DSG4	DSP	DST	ESAM	F11R	GJA1
D	GJA3	GJA4	GJA5	GJA8	GJB1	GJB2	GJB3	GJB4	GJB5	GJB6	GJC2	GJD2
E	GJE1	ICAM1	ICAM2	ITGA1	ITGA2	ITGA3	ITGA4	ITGA5	ITGA6	ITGA7	ITGA8	ITGA9
F	ITGAL	ITGAM	ITGAV	ITGB1	ITGB2	ITGB3	ITGB4	ITGB5	ITGB6	JAM2	JAM3	JUP
G	NOTCH1	NOTCH2	NOTCH3	NOTCH4	OCLN	PLEC	PVRL1	PVRL2	PVRL3	TJP1	TJP2	TJP3
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

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

Position	UniGene	GenBank	Symbol	Description
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
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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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 ² 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
RT ² 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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