

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

Human Adherens Junctions

Cat. no. 330231 PAHS-146ZA

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 Adherens Junctions RT² Profiler PCR Array profiles the expression of 84 key genes encoding components, interactors, and regulators of adherens junctions and desmosomes involved in cell–cell contacts mediated by cadherins. Adherens junctions occur at adhesion belts linking adjacent epithelial cells or the focal contacts on the lower surface of cultured fibroblasts. Desmosomes are anchoring cell–cell junctions, usually formed between 2 epithelial cells and characterized by dense protein plaques. Adherens junctions connect cadherins to actin filaments internally, while desmosomes connect cadherins to intermediate filaments such as keratin and desmin filaments. Besides cadherins, cell surface receptor components of adherens junctions also include desmocollins, desmogleins, nectins, and Notch proteins. Adherens-junction–associated proteins, especially the catenins, recruit protein kinases that regulate the cytoskeleton via phosphorylation cascades and G-proteins that directly recruit cytoskeleton components to the junction. Adherens junctions regulate several key normal biological processes including intestinal absorption, keratinization, vascular biology, and WNT-dependent development. Dysregulation of focal adhesion function and integrity plays a key role in the pathophysiology of diseases such as cardiomyopathies, fibroproliferative disorders, polycystic kidney disease, and epithelial-to-mesenchymal transition during tumor metastasis. Profiling the expression of adherens junction and desmosome components may lead to a better understanding of molecular mechanisms behind cell-cell contact mediated cell biology. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in adherens 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	ACTN1	ACTN2	ACTN3	ACTN4	AJAP1	ANAPC1	ARF6	ARVCF	BAIAP2	CBLL1	CDC27	CDC42
B	CDH1	CDH2	CDH3	CDH4	CDH5	CDSN	CSNK2A1	CSNK2A2	CSNK2B	CTNNA1	CTNNA2	CTNNA3
C	CTNNA1	CTNND1	DLG5	DLL1	DNM1	DNM2	DOCK4	DSC1	DSC2	DSC3	DSG1	DSG2
D	DSG3	DSG4	DSP	EXOC2	FARP2	FLNA	FLNB	HGS	IQGAP1	JUP	LMO7	MAPRE1
E	MAPRE2	MLLT4	NME1	NOTCH1	NOTCH2	NOTCH3	NOTCH4	P2RX6	PARD3	PERP	PIK3CG	PKP1
F	PKP2	PKP3	PKP4	PNN	PPAP2B	PPL	PVRL1	PVRL2	PVRL3	PVRL4	RAC1	RALA
G	RHOA	SORBS1	SSX2IP	TJP1	TLN1	TLN2	VCL	VEZT	WAS	WASF1	WASL	ZYX
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.509765	NM_001102	ACTN1	Actinin, alpha 1
A02	Hs.498178	NM_001103	ACTN2	Actinin, alpha 2
A03	Hs.654432	NM_001104	ACTN3	Actinin, alpha 3
A04	Hs.270291	NM_004924	ACTN4	Actinin, alpha 4
A05	Hs.25924	NM_018836	AJAP1	Adherens junctions associated protein 1
A06	Hs.436527	NM_022662	ANAPC1	Anaphase promoting complex subunit 1
A07	Hs.525330	NM_001663	ARF6	ADP-ribosylation factor 6
A08	Hs.713616	NM_001670	ARVCF	Armadillo repeat gene deleted in velocardiofacial syndrome
A09	Hs.128316	NM_006340	BAIAP2	BAI1-associated protein 2
A10	Hs.592271	NM_024814	CBLL1	Cas-Br-M (murine) ecotropic retroviral transforming sequence-like 1
A11	Hs.463295	NM_001256	CDC27	Cell division cycle 27 homolog (S. cerevisiae)
A12	Hs.690198	NM_001791	CDC42	Cell division cycle 42 (GTP binding protein, 25kDa)
B01	Hs.461086	NM_004360	CDH1	Cadherin 1, type 1, E-cadherin (epithelial)
B02	Hs.464829	NM_001792	CDH2	Cadherin 2, type 1, N-cadherin (neuronal)
B03	Hs.191842	NM_001793	CDH3	Cadherin 3, type 1, P-cadherin (placental)
B04	Hs.473231	NM_001794	CDH4	Cadherin 4, type 1, R-cadherin (retinal)
B05	Hs.76206	NM_001795	CDH5	Cadherin 5, type 2 (vascular endothelium)
B06	Hs.310958	NM_001264	CDSN	Corneodesmosin
B07	Hs.644056	NM_001895	CSNK2A1	Casein kinase 2, alpha 1 polypeptide
B08	Hs.82201	NM_001896	CSNK2A2	Casein kinase 2, alpha prime polypeptide
B09	Hs.73527	NM_001320	CSNK2B	Casein kinase 2, beta polypeptide
B10	Hs.534797	NM_001903	CTNNA1	Catenin (cadherin-associated protein), alpha 1, 102kDa
B11	Hs.167368	NM_004389	CTNNA2	Catenin (cadherin-associated protein), alpha 2
B12	Hs.660362	NM_013266	CTNNA3	Catenin (cadherin-associated protein), alpha 3
C01	Hs.476018	NM_001904	CTNNA1	Catenin (cadherin-associated protein), beta 1, 88kDa
C02	Hs.166011	NM_001331	CTNND1	Catenin (cadherin-associated protein), delta 1
C03	Hs.652690	NM_004747	DLG5	Discs, large homolog 5 (Drosophila)
C04	Hs.379912	NM_005618	DLL1	Delta-like 1 (Drosophila)
C05	Hs.522413	NM_004408	DNM1	Dynamamin 1
C06	Hs.211463	NM_004945	DNM2	Dynamamin 2
C07	Hs.654652	NM_014705	DOCK4	Dedicator of cytokinesis 4
C08	Hs.567260	NM_004948	DSC1	Desmocollin 1
C09	Hs.95612	NM_004949	DSC2	Desmocollin 2
C10	Hs.41690	NM_001941	DSC3	Desmocollin 3
C11	Hs.2633	NM_001942	DSG1	Desmoglein 1
C12	Hs.412597	NM_001943	DSG2	Desmoglein 2
D01	Hs.1925	NM_001944	DSG3	Desmoglein 3
D02	Hs.407618	NM_177986	DSG4	Desmoglein 4
D03	Hs.519873	NM_004415	DSP	Desmoplakin
D04	Hs.484412	NM_018303	EXOC2	Exocyst complex component 2
D05	Hs.657318	NM_014808	FARP2	FERM, RhoGEF and pleckstrin domain protein 2
D06	Hs.195464	NM_001456	FLNA	Filamin A, alpha
D07	Hs.476448	NM_001457	FLNB	Filamin B, beta
D08	Hs.514590	NM_004712	HGS	Hepatocyte growth factor-regulated tyrosine kinase substrate
D09	Hs.430551	NM_003870	IQGAP1	IQ motif containing GTPase activating protein 1

Position	UniGene	GenBank	Symbol	Description
D10	Hs.514174	NM_002230	JUP	Junction plakoglobin
D11	Hs.207631	NM_005358	LMO7	LIM domain 7
D12	Hs.472437	NM_012325	MAPRE1	Microtubule-associated protein, RP/EB family, member 1
E01	Hs.532824	NM_014268	MAPRE2	Microtubule-associated protein, RP/EB family, member 2
E02	Hs.728849	NM_001040000	MLLT4	Myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 4
E03	Hs.118638	NM_000269	NME1	Non-metastatic cells 1, protein (NM23A) expressed in
E04	Hs.495473	NM_017617	NOTCH1	Notch 1
E05	Hs.487360	NM_024408	NOTCH2	Notch 2
E06	Hs.8546	NM_000435	NOTCH3	Notch 3
E07	Hs.436100	NM_004557	NOTCH4	Notch 4
E08	Hs.113275	NM_005446	P2RX6	Purinergic receptor P2X, ligand-gated ion channel, 6
E09	Hs.131489	NM_019619	PARD3	Par-3 partitioning defective 3 homolog (C. elegans)
E10	Hs.201446	NM_022121	PERP	PERP, TP53 apoptosis effector
E11	Hs.32942	NM_002649	PIK3CG	Phosphoinositide-3-kinase, catalytic, gamma polypeptide
E12	Hs.497350	NM_000299	PKP1	Plakophilin 1 (ectodermal dysplasia/skin fragility syndrome)
F01	Hs.164384	NM_004572	PKP2	Plakophilin 2
F02	Hs.534395	NM_007183	PKP3	Plakophilin 3
F03	Hs.407580	NM_003628	PKP4	Plakophilin 4
F04	Hs.409965	NM_002687	PNN	Pinin, desmosome associated protein
F05	Hs.405156	NM_003713	PPAP2B	Phosphatidic acid phosphatase type 2B
F06	Hs.192233	NM_002705	PPL	Periplakin
F07	Hs.334846	NM_002855	PVRL1	Poliovirus receptor-related 1 (herpesvirus entry mediator C)
F08	Hs.655455	NM_002856	PVRL2	Poliovirus receptor-related 2 (herpesvirus entry mediator B)
F09	Hs.293917	NM_015480	PVRL3	Poliovirus receptor-related 3
F10	Hs.492490	NM_030916	PVRL4	Poliovirus receptor-related 4
F11	Hs.413812	NM_006908	RAC1	Ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1)
F12	Hs.6906	NM_005402	RALA	V-ral simian leukemia viral oncogene homolog A (ras related)
G01	Hs.247077	NM_001664	RHOA	Ras homolog gene family, member A
G02	Hs.38621	NM_006434	SORBS1	Sorbin and SH3 domain containing 1
G03	Hs.22587	NM_014021	SSX2IP	Synovial sarcoma, X breakpoint 2 interacting protein
G04	Hs.510833	NM_175610	TJP1	Tight junction protein 1 (zona occludens 1)
G05	Hs.471014	NM_006289	TLN1	Talin 1
G06	Hs.569438	NM_015059	TLN2	Talin 2
G07	Hs.643896	NM_003373	VCL	Vinculin
G08	Hs.24135	NM_017599	VEZT	Vezatin, adherens junctions transmembrane protein
G09	Hs.2157	NM_000377	WAS	Wiskott-Aldrich syndrome (eczema-thrombocytopenia)
G10	Hs.75850	NM_003931	WASF1	WAS protein family, member 1
G11	Hs.143728	NM_003941	WASL	Wiskott-Aldrich syndrome-like
G12	Hs.490415	NM_003461	ZYX	Zyxin
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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