

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

## Human Extracellular Matrix & Adhesion Molecules

Cat. no. 330231 PAHS-013ZA

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 Human Extracellular Matrix & Adhesion Molecules RT<sup>2</sup> Profiler PCR Array profiles the expression of 84 genes important for cell-cell and cell-matrix interactions. Cells attach to proteoglycans and glycoproteins (such as fibronectin, laminin, and collagen) in the extracellular matrix (ECM) substratum via adhesion molecules on their cell surface to define tissue shape, structure, and function. Making and breaking cellular contacts with other cells and the ECM play critical roles in normal processes such as cell growth, division, differentiation, and migration. Disease states (metastasis, rheumatoid arthritis, and cardiovascular and central nervous system disorders) and pathophysiological processes (wound healing and inflammation) also involve ECM remodeling and changes in the classes of cell adhesion molecule expressed on cell surfaces. This array contains ECM proteins including basement membrane constituents, collagens, and other genes defining ECM structure. Matrix and other metalloproteinases that remodel the ECM as well as their inhibitors are also included. This array also represents integrins, selectins, cell-adhesion molecule family members (ICAM, ECAM, NCAM, PECAM, and VCAM), and other genes important to cell adhesion and cytoskeleton bridging such as the catenins. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to cell adhesion and the ECM 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  $-20^{\circ}\text{C}$ .

**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
<b>A</b>	ADAMTS1	ADAMTS13	ADAMTS8	CD44	CDH1	CLEC3B	CNTN1	COL11A1	COL12A1	COL14A1	COL15A1	COL16A1
<b>B</b>	COL1A1	COL4A2	COL5A1	COL6A1	COL6A2	COL7A1	COL8A1	CTGF	CTNNA1	CTNNB1	CTNND1	CTNND2
<b>C</b>	ECM1	FN1	HAS1	ICAM1	ITGA1	ITGA2	ITGA3	ITGA4	ITGA5	ITGA6	ITGA7	ITGA8
<b>D</b>	ITGAL	ITGAM	ITGAV	ITGB1	ITGB2	ITGB3	ITGB4	ITGB5	KAL1	LAMA1	LAMA2	LAMA3
<b>E</b>	LAMB1	LAMB3	LAMC1	MMP1	MMP10	MMP11	MMP12	MMP13	MMP14	MMP15	MMP16	MMP2
<b>F</b>	MMP3	MMP7	MMP8	MMP9	NCAM1	PECAM1	SELE	SELL	SELP	SGCE	SPARC	SPG7
<b>G</b>	SPP1	TGFB1	THBS1	THBS2	THBS3	TIMP1	TIMP2	TIMP3	TNC	VCAM1	VCAN	VTN
<b>H</b>	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

## Gene table: RT<sup>2</sup> Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.643357	NM_006988	ADAMTS1	ADAM metalloproteinase with thrombospondin type 1 motif, 1
A02	Hs.131433	NM_139025	ADAMTS13	ADAM metalloproteinase with thrombospondin type 1 motif, 13
A03	Hs.271605	NM_007037	ADAMTS8	ADAM metalloproteinase with thrombospondin type 1 motif, 8
A04	Hs.502328	NM_000610	CD44	CD44 molecule (Indian blood group)
A05	Hs.461086	NM_004360	CDH1	Cadherin 1, type 1, E-cadherin (epithelial)
A06	Hs.476092	NM_003278	CLEC3B	C-type lectin domain family 3, member B
A07	Hs.143434	NM_001843	CNTN1	Contactin 1
A08	Hs.523446	NM_080629	COL11A1	Collagen, type XI, alpha 1
A09	Hs.101302	NM_004370	COL12A1	Collagen, type XII, alpha 1
A10	Hs.409662	NM_021110	COL14A1	Collagen, type XIV, alpha 1
A11	Hs.409034	NM_001855	COL15A1	Collagen, type XV, alpha 1
A12	Hs.368921	NM_001856	COL16A1	Collagen, type XVI, alpha 1
B01	Hs.172928	NM_000088	COL1A1	Collagen, type I, alpha 1
B02	Hs.508716	NM_001846	COL4A2	Collagen, type IV, alpha 2
B03	Hs.210283	NM_000093	COL5A1	Collagen, type V, alpha 1
B04	Hs.474053	NM_001848	COL6A1	Collagen, type VI, alpha 1
B05	Hs.420269	NM_001849	COL6A2	Collagen, type VI, alpha 2
B06	Hs.476218	NM_000094	COL7A1	Collagen, type VII, alpha 1
B07	Hs.654548	NM_001850	COL8A1	Collagen, type VIII, alpha 1
B08	Hs.591346	NM_001901	CTGF	Connective tissue growth factor
B09	Hs.534797	NM_001903	CTNNA1	Catenin (cadherin-associated protein), alpha 1, 102kDa
B10	Hs.476018	NM_001904	CTNNB1	Catenin (cadherin-associated protein), beta 1, 88kDa
B11	Hs.166011	NM_001331	CTNND1	Catenin (cadherin-associated protein), delta 1
B12	Hs.314543	NM_001332	CTNND2	Catenin (cadherin-associated protein), delta 2 (neural plakophilin-related arm-repeat protein)
C01	Hs.81071	NM_004425	ECM1	Extracellular matrix protein 1
C02	Hs.203717	NM_002026	FN1	Fibronectin 1
C03	Hs.57697	NM_001523	HAS1	Hyaluronan synthase 1
C04	Hs.643447	NM_000201	ICAM1	Intercellular adhesion molecule 1
C05	Hs.644352	NM_181501	ITGA1	Integrin, alpha 1
C06	Hs.482077	NM_002203	ITGA2	Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)
C07	Hs.265829	NM_002204	ITGA3	Integrin, alpha 3 (antigen CD49C, alpha 3 subunit of VLA-3 receptor)
C08	Hs.694732	NM_000885	ITGA4	Integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4 receptor)
C09	Hs.505654	NM_002205	ITGA5	Integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
C10	Hs.133397	NM_000210	ITGA6	Integrin, alpha 6
C11	Hs.524484	NM_002206	ITGA7	Integrin, alpha 7
C12	Hs.171311	NM_003638	ITGA8	Integrin, alpha 8
D01	Hs.174103	NM_002209	ITGAL	Integrin, alpha L (antigen CD11A (p180), lymphocyte function-associated antigen 1; alpha polypeptide)
D02	Hs.172631	NM_000632	ITGAM	Integrin, alpha M (complement component 3 receptor 3 subunit)
D03	Hs.436873	NM_002210	ITGAV	Integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)
D04	Hs.643813	NM_002211	ITGB1	Integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)
D05	Hs.375957	NM_000211	ITGB2	Integrin, beta 2 (complement component 3 receptor 3 and 4 subunit)
D06	Hs.218040	NM_000212	ITGB3	Integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)

Position	UniGene	GenBank	Symbol	Description
D07	Hs.632226	NM_000213	ITGB4	Integrin, beta 4
D08	Hs.536663	NM_002213	ITGB5	Integrin, beta 5
D09	Hs.521869	NM_000216	KAL1	Kallmann syndrome 1 sequence
D10	Hs.270364	NM_005559	LAMA1	Laminin, alpha 1
D11	Hs.200841	NM_000426	LAMA2	Laminin, alpha 2
D12	Hs.436367	NM_000227	LAMA3	Laminin, alpha 3
E01	Hs.650585	NM_002291	LAMB1	Laminin, beta 1
E02	Hs.497636	NM_000228	LAMB3	Laminin, beta 3
E03	Hs.609663	NM_002293	LAMC1	Laminin, gamma 1 (formerly LAMB2)
E04	Hs.83169	NM_002421	MMP1	Matrix metalloproteinase 1 (interstitial collagenase)
E05	Hs.2258	NM_002425	MMP10	Matrix metalloproteinase 10 (stromelysin 2)
E06	Hs.143751	NM_005940	MMP11	Matrix metalloproteinase 11 (stromelysin 3)
E07	Hs.1695	NM_002426	MMP12	Matrix metalloproteinase 12 (macrophage elastase)
E08	Hs.2936	NM_002427	MMP13	Matrix metalloproteinase 13 (collagenase 3)
E09	Hs.2399	NM_004995	MMP14	Matrix metalloproteinase 14 (membrane-inserted)
E10	Hs.80343	NM_002428	MMP15	Matrix metalloproteinase 15 (membrane-inserted)
E11	Hs.546267	NM_005941	MMP16	Matrix metalloproteinase 16 (membrane-inserted)
E12	Hs.513617	NM_004530	MMP2	Matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
F01	Hs.375129	NM_002422	MMP3	Matrix metalloproteinase 3 (stromelysin 1, progelatinase)
F02	Hs.2256	NM_002423	MMP7	Matrix metalloproteinase 7 (matrilysin, uterine)
F03	Hs.161839	NM_002424	MMP8	Matrix metalloproteinase 8 (neutrophil collagenase)
F04	Hs.297413	NM_004994	MMP9	Matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
F05	Hs.503878	NM_000615	NCAM1	Neural cell adhesion molecule 1
F06	Hs.514412	NM_000442	PECAM1	Platelet/endothelial cell adhesion molecule
F07	Hs.89546	NM_000450	SELE	Selectin E
F08	Hs.728756	NM_000655	SELL	Selectin L
F09	Hs.73800	NM_003005	SELP	Selectin P (granule membrane protein 140kDa, antigen CD62)
F10	Hs.371199	NM_003919	SGCE	Sarcoglycan, epsilon
F11	Hs.111779	NM_003118	SPARC	Secreted protein, acidic, cysteine-rich (osteonectin)
F12	Hs.185597	NM_003119	SPG7	Spastic paraplegia 7 (pure and complicated autosomal recessive)
G01	Hs.313	NM_000582	SPP1	Secreted phosphoprotein 1
G02	Hs.369397	NM_000358	TGFBI	Transforming growth factor, beta-induced, 68kDa
G03	Hs.164226	NM_003246	THBS1	Thrombospondin 1
G04	Hs.371147	NM_003247	THBS2	Thrombospondin 2
G05	Hs.169875	NM_007112	THBS3	Thrombospondin 3
G06	Hs.522632	NM_003254	TIMP1	TIMP metalloproteinase inhibitor 1
G07	Hs.633514	NM_003255	TIMP2	TIMP metalloproteinase inhibitor 2
G08	Hs.644633	NM_000362	TIMP3	TIMP metalloproteinase inhibitor 3
G09	Hs.143250	NM_002160	TNC	Tenascin C
G10	Hs.109225	NM_001078	VCAM1	Vascular cell adhesion molecule 1
G11	Hs.643801	NM_004385	VCAN	Versican
G12	Hs.2257	NM_000638	VTN	Vitronectin
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, 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™ 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.

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