

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

Mouse Focal Adhesions

Cat. no. 330231 PAMM-145ZA

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™



Description

The Mouse Focal Adhesions RT² Profiler PCR Array profiles the expression of 84 key genes involved in cellular adhesion to the extracellular matrix (ECM). Focal adhesions and hemidesmosomes form around the intracellular domains of integrins bound to components of the ECM such as those found in the basal lamina underlying epithelial cells. Focal adhesions connect the intracellular domains of integrins to actin filaments, while hemidesmosomes connect them to keratin-based intermediate filaments. These structures regulate several key normal biological processes including angiogenesis, anchorage-dependent cell survival, cell cycle, cell migration, and wound healing. Dysregulation of focal adhesion function and integrity plays a key role in the pathophysiology of diseases such as fibrosis and epithelial-to-mesenchymal transition during tumor metastasis. The well-studied focal adhesion kinase PTK2, a cytosolic tyrosine kinase, and integrin-linked kinase (ILK) mediate PI-3-kinase/AKT and G-protein integrin-dependent signaling associated with focal adhesion-dependent processes. Downstream signaling from focal adhesions and caveolae, as well as focal-adhesion-interacting proteins (such as filamin, vinculin, and talin), then regulate the biogenesis, organization, polymerization, and depolymerization of actin filaments. Profiling the expression of focal adhesion and hemidesmosome components may lead to a better understanding of molecular mechanisms behind cell-ECM 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 focal adhesions 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	Actn4	Akt1	Akt2	Akt3	Arhgap5	Bcar1	Capn2	Cav1	Cav2	Cav3
B	Cdc42	Crk	Crkl	Ctnnb1	Diap1	Dock1	Dst	Flna	Flnb	Fyn	Grb2	Gsk3b
C	Hras1	Ilk	Itga1	Itga11	Itga2	Itga2b	Itga3	Itga4	Itga5	Itga6	Itga7	Itga8
D	Itga9	Itgal	Itgam	Itgav	Itgax	Itgb1	Itgb2	Itgb3	Itgb4	Itgb5	Itgb6	Pak1
E	Pak2	Pak3	Pak4	Parva	Parvb	Parvg	Pdpk1	Pip5k1c	Plec	Prkca	Prkcb	Prkcc
F	Pten	Plk2	Pxn	Rac1	Rac2	Raf1	Rap1a	Rap1b	Rapgef1	Rasgrf1	Rhoa	Rock1
G	Rock2	Shc1	Sos1	Sos2	Src	Tln1	Tns1	Vasp	Vav1	Vav2	Vcl	Zyx
H	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.253564	NM_134156	Actn1	Actinin, alpha 1
A02	Mm.37638	NM_033268	Actn2	Actinin alpha 2
A03	Mm.81144	NM_021895	Actn4	Actinin alpha 4
A04	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A05	Mm.177194	NM_007434	Akt2	Thymoma viral proto-oncogene 2
A06	Mm.235194	NM_011785	Akt3	Thymoma viral proto-oncogene 3
A07	Mm.35059	NM_009706	Arhgap5	Rho GTPase activating protein 5
A08	Mm.3758	NM_009954	Bcar1	Breast cancer anti-estrogen resistance 1
A09	Mm.19306	NM_009794	Capn2	Calpain 2
A10	Mm.28278	NM_007616	Cav1	Caveolin 1, caveolae protein
A11	Mm.396075	NM_016900	Cav2	Caveolin 2
A12	Mm.3924	NM_007617	Cav3	Caveolin 3
B01	Mm.1022	NM_009861	Cdc42	Cell division cycle 42 homolog (S. cerevisiae)
B02	Mm.280125	NM_133656	Crk	V-crk sarcoma virus CT10 oncogene homolog (avian)
B03	Mm.21048	NM_007764	Crkl	V-crk sarcoma virus CT10 oncogene homolog (avian)-like
B04	Mm.291928	NM_007614	Ctnnb1	Catenin (cadherin associated protein), beta 1
B05	Mm.195916	NM_007858	Diap1	Diaphanous homolog 1 (Drosophila)
B06	Mm.436572	NM_001033420	Dock1	Dedicator of cytokinesis 1
B07	Mm.478284	NM_134448	Dst	Dystonin
B08	Mm.295533	NM_010227	Flna	Filamin, alpha
B09	Mm.28095	NM_134080	Flnb	Filamin, beta
B10	Mm.4848	NM_008054	Fyn	Fyn proto-oncogene
B11	Mm.439649	NM_008163	Grb2	Growth factor receptor bound protein 2
B12	Mm.394930	NM_019827	Gsk3b	Glycogen synthase kinase 3 beta
C01	Mm.334313	NM_008284	Hras1	Harvey rat sarcoma virus oncogene 1
C02	Mm.274846	NM_010562	Ilk	Integrin linked kinase
C03	Mm.482186	NM_001033228	Itga1	Integrin alpha 1
C04	Mm.34883	NM_176922	Itga11	Integrin alpha 11
C05	Mm.5007	NM_008396	Itga2	Integrin alpha 2
C06	Mm.26646	NM_010575	Itga2b	Integrin alpha 2b
C07	Mm.57035	NM_013565	Itga3	Integrin alpha 3
C08	Mm.31903	NM_010576	Itga4	Integrin alpha 4
C09	Mm.16234	NM_010577	Itga5	Integrin alpha 5 (fibronectin receptor alpha)
C10	Mm.225096	NM_008397	Itga6	Integrin alpha 6
C11	Mm.179747	NM_008398	Itga7	Integrin alpha 7
C12	Mm.329997	NM_001001309	Itga8	Integrin alpha 8
D01	Mm.335520	NM_133721	Itga9	Integrin alpha 9
D02	Mm.1618	NM_008400	Itgal	Integrin alpha L
D03	Mm.262106	NM_008401	Itgam	Integrin alpha M
D04	Mm.227	NM_008402	Itgav	Integrin alpha V
D05	Mm.22378	NM_021334	Itgax	Integrin alpha X
D06	Mm.263396	NM_010578	Itgb1	Integrin beta 1 (fibronectin receptor beta)
D07	Mm.1137	NM_008404	Itgb2	Integrin beta 2
D08	Mm.87150	NM_016780	Itgb3	Integrin beta 3
D09	Mm.213873	NM_001005608	Itgb4	Integrin beta 4

Position	UniGene	GenBank	Symbol	Description
D10	Mm.6424	NM_010580	Itgb5	Integrin beta 5
D11	Mm.98193	NM_021359	Itgb6	Integrin beta 6
D12	Mm.260227	NM_011035	Pak1	P21 protein (Cdc42/Rac)-activated kinase 1
E01	Mm.234204	NM_177326	Pak2	P21 protein (Cdc42/Rac)-activated kinase 2
E02	Mm.40035	NM_008778	Pak3	P21 protein (Cdc42/Rac)-activated kinase 3
E03	Mm.21876	NM_027470	Pak4	P21 protein (Cdc42/Rac)-activated kinase 4
E04	Mm.143763	NM_020606	Parva	Parvin, alpha
E05	Mm.323892	NM_133167	Parvb	Parvin, beta
E06	Mm.251356	NM_022321	Parvg	Parvin, gamma
E07	Mm.10504	NM_011062	Pdpk1	3-phosphoinositide dependent protein kinase 1
E08	Mm.29836	NM_008844	Pip5k1c	Phosphatidylinositol-4-phosphate 5-kinase, type 1 gamma
E09	Mm.234912	NM_011117	Plec	Plectin
E10	Mm.222178	NM_011101	Prkca	Protein kinase C, alpha
E11	Mm.207496	NM_008855	Prkcb	Protein kinase C, beta
E12	Mm.7980	NM_011102	Prkcc	Protein kinase C, gamma
F01	Mm.245395	NM_008960	Pten	Phosphatase and tensin homolog
F02	Mm.254494	NM_007982	Plk2	PTK2 protein tyrosine kinase 2
F03	Mm.18714	NM_011223	Pxn	Paxillin
F04	Mm.292510	NM_009007	Rac1	RAS-related C3 botulinum substrate 1
F05	Mm.1972	NM_009008	Rac2	RAS-related C3 botulinum substrate 2
F06	Mm.184163	NM_029780	Raf1	V-raf-leukemia viral oncogene 1
F07	Mm.458171	NM_145541	Rap1a	RAS-related protein-1a
F08	Mm.233009	NM_024457	Rap1b	RAS related protein 1b
F09	Mm.298274	NM_054050	Rapgef1	Rap guanine nucleotide exchange factor (GEF) 1
F10	Mm.44561	NM_011245	Rasgrf1	RAS protein-specific guanine nucleotide-releasing factor 1
F11	Mm.757	NM_016802	Rhoa	Ras homolog gene family, member A
F12	Mm.6710	NM_009071	Rock1	Rho-associated coiled-coil containing protein kinase 1
G01	Mm.276024	NM_009072	Rock2	Rho-associated coiled-coil containing protein kinase 2
G02	Mm.86595	NM_011368	Shc1	Src homology 2 domain-containing transforming protein C1
G03	Mm.434583	NM_009231	Sos1	Son of sevenless homolog 1 (Drosophila)
G04	Mm.3770	NM_001135559	Sos2	Son of sevenless homolog 2 (Drosophila)
G05	Mm.22845	NM_009271	Src	Rous sarcoma oncogene
G06	Mm.208601	NM_011602	Tln1	Talin 1
G07	Mm.309975	NM_027884	Tns1	Tensin 1
G08	Mm.9684	NM_009499	Vasp	Vasodilator-stimulated phosphoprotein
G09	Mm.248172	NM_011691	Vav1	Vav 1 oncogene
G10	Mm.179011	NM_009500	Vav2	Vav 2 oncogene
G11	Mm.279361	NM_009502	Vcl	Vinculin
G12	Mm.282303	NM_011777	Zyx	Zyxin
H01	Mm.328431	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H05	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90 alpha (cytosolic), class B member 1
H06	N/A	SA_00106	MGDC	Mouse 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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