

RT² Profiler PCR Array (Rotor-Gene[®] Format)

Rat Focal Adhesions

Cat. no. 330231 PARN-145ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

Description

The Rat 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 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	Rn.6401	NM_031005	Actn1	Actinin, alpha 1
A02	Rn.17592	NM_133424	Actn3	Actinin alpha 3
A03	Rn.15777	NM_031675	Actn4	Actinin alpha 4
A04	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A05	Rn.87066	NM_017093	Akt2	V-akt murine thymoma viral oncogene homolog 2
A06	Rn.10506	NM_031575	Akt3	V-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)
A07	Rn.20898	NM_001047869	Arhgap5	Rho GTPase activating protein 5
A08	Rn.40101	NM_012931	Bcar1	Breast cancer anti-estrogen resistance 1
A09	Rn.205813	XM_231692	Braf	V-raf murine sarcoma viral oncogene homolog B1
A10	Rn.6822	NM_017116	Capn2	Calpain 2
A11	Rn.22518	NM_031556	Cav1	Caveolin 1, caveolae protein
A12	Rn.81070	NM_131914	Cav2	Caveolin 2
B01	Rn.98191	NM_019155	Cav3	Caveolin 3
B02	Rn.60067	NM_171994	Cdc42	Cell division cycle 42 (GTP binding protein)
B03	Rn.163154	NM_019302	Crk	V-crk sarcoma virus CT10 oncogene homolog (avian)
B04	Rn.35110	NM_001008284	Crkl	V-crk sarcoma virus CT10 oncogene homolog (avian)-like
B05	Rn.112601	NM_053357	Ctnnb1	Catenin (cadherin associated protein), beta 1
B06	Rn.3004	NM_001107393	Diaph1	Diaphanous homolog 1 (Drosophila)
B07	Rn.79807	NM_001108208	Dst	Dystonin
B08	Rn.4213	NM_001134599	Flna	Filamin A, alpha
B09	Rn.1761	NM_001107288	Flnb	Filamin, beta
B10	Rn.19361	NM_012755	Fyn	FYN oncogene related to SRC, FGR, YES
B11	Rn.3360	NM_030846	Grb2	Growth factor receptor bound protein 2
B12	Rn.10426	NM_032080	Gsk3b	Glycogen synthase kinase 3 beta
C01	Rn.102180	NM_001098241	Hras	Harvey rat sarcoma virus oncogene
C02	Rn.95042	NM_133409	Ilk	Integrin-linked kinase
C03	Rn.91044	NM_030994	Itga1	Integrin, alpha 1
C04	Rn.82866	NM_001107699	Itga10	Integrin, alpha 10
C05	Rn.64478	NM_001108156	Itga11	Integrin, alpha 11
C06	Rn.83597	XM_345156	Itga2	Integrin, alpha 2
C07	Rn.128177	XM_001063315	Itga2b	Integrin, alpha 2B
C08	Rn.154664	NM_001108292	Itga3	Integrin, alpha 3
C09	Rn.12704	NM_001107737	Itga4	Integrin, alpha 4
C10	Rn.100796	NM_001108118	Itga5	Integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
C11	Rn.161799	XM_215984	Itga6	Integrin, alpha 6
C12	Rn.54492	NM_030842	Itga7	Integrin, alpha 7
D01	Rn.69726	NM_001173972	Itga8	Integrin, alpha 8
D02	Rn.14655	NM_001033998	Itgal	Integrin, alpha L
D03	Rn.54465	NM_012711	Itgam	Integrin, alpha M
D04	Rn.23339	NM_001106549	Itgav	Integrin, alpha V
D05	Rn.215658	XM_001080404	Itgax	Integrin, alpha X
D06	Rn.25733	NM_017022	Itgb1	Integrin, beta 1
D07	Rn.42962	NM_001037780	Itgb2	Integrin, beta 2
D08	Rn.162202	NM_153720	Itgb3	Integrin, beta 3
D09	Rn.198908	NM_013180	Itgb4	Integrin, beta 4
D10	Rn.16988	NM_147139	Itgb5	Integrin, beta 5
D11	Rn.19828	NM_001004263	Itgb6	Integrin, beta 6
D12	Rn.9149	NM_017198	Pak1	P21 protein (Cdc42/Rac)-activated kinase 1
E01	Rn.3840	NM_053306	Pak2	P21 protein (Cdc42/Rac)-activated kinase 2
E02	Rn.10128	NM_019210	Pak3	P21 protein (Cdc42/Rac)-activated kinase 3
E03	Rn.18543	NM_001106238	Pak4	P21 protein (Cdc42/Rac)-activated kinase 4
E04	Rn.162457	NM_020656	Parva	Parvin, alpha
E05	Rn.10905	NM_031081	Pdpk1	3-phosphoinositide dependent protein kinase-1
E06	Rn.2928	NM_001009967	Pip5k1c	Phosphatidylinositol-4-phosphate 5-kinase, type I, gamma
E07	Rn.1085	NM_022401	Plec	Plectin
E08	Rn.207908	NM_001105713	Prkca	Protein kinase C, alpha
E09	Rn.91118	NM_012713	Prkcb	Protein kinase C, beta

Position	UniGene	GenBank	Symbol	Description
E10	Rn.9747	NM_012628	Prkcg	Protein kinase C, gamma
E11	Rn.22158	NM_031606	Pten	Phosphatase and tensin homolog
E12	Rn.2809	NM_013081	Ptk2	PTK2 protein tyrosine kinase 2
F01	Rn.75	NM_001012147	Pxn	Paxillin
F02	Rn.29157	NM_134366	Rac1	Ras-related C3 botulinum toxin substrate 1
F03	Rn.2863	NM_001008384	Rac2	Ras-related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2)
F04	Rn.33262	NM_012639	Raf1	V-raf-leukemia viral oncogene 1
F05	Rn.106321	NM_001005765	Rap1a	RAP1A, member of RAS oncogene family
F06	Rn.95071	NM_134346	Rap1b	RAP1B, member of RAS oncogene family
F07	Rn.85879	XM_216018	Rapgef1	Rap guanine nucleotide exchange factor (GEF) 1
F08	Rn.135776	NM_001170531	Rasgrf1	RAS protein-specific guanine nucleotide-releasing factor 1
F09	Rn.107401	NM_057132	Rhoa	Ras homolog gene family, member A
F10	Rn.89756	NM_031098	Rock1	Rho-associated coiled-coil containing protein kinase 1
F11	Rn.88642	NM_013022	Rock2	Rho-associated coiled-coil containing protein kinase 2
F12	Rn.138818	NM_053517	Shc1	SHC (Src homology 2 domain containing) transforming protein 1
G01	Rn.120041	NM_001108065	Shc2	SHC (Src homology 2 domain containing) transforming protein 2
G02	Rn.91844	NM_001100716	Sos1	Son of sevenless homolog 1 (Drosophila)
G03	Rn.4226	NM_001135561	Sos2	Son of sevenless homolog 2 (Drosophila)
G04	Rn.112600	NM_031977	Src	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G05	Rn.105953	NM_001108114	Tenc1	Tensin like C1 domain containing phosphatase (tensin 2)
G06	Rn.7715	NM_001039025	Tln1	Talin 1
G07	Rn.23329	NM_001024881	Tns4	Tensin 4
G08	Rn.98750	NM_001108475	Vasp	Vasodilator-stimulated phosphoprotein
G09	Rn.48861	NM_012759	Vav1	Vav 1 guanine nucleotide exchange factor
G10	Rn.98555	NM_001106563	Vav2	Vav 2 guanine nucleotide exchange factor
G11	Rn.164613	NM_001107248	Vcl	Vinculin
G12	Rn.107363	NM_053761	Zyx	Zyxin
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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 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.

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