RT² Profiler PCR Array (Rotor-Gene® Format)

Human Focal Adhesions

Cat. no. 330231 PAHS-145ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

Description

The Human 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	Hs.509765	NM_001102	ACTN1	Actinin, alpha 1
A02	Hs.498178	NM_001103	ACTN2	Actinin, alpha 2
A03	Hs.270291	NM_004924	ACTN4	Actinin, alpha 4
A04	Hs.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
A05	Hs.631535	NM_001626	AKT2	V-akt murine thymoma viral oncogene homolog 2
A06	Hs.498292	NM_005465	AKT3	V-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)
A07	Hs.592313	NM_001173	ARHGAP5	Rho GTPase activating protein 5
A08	Hs.479747	NM_014567	BCAR1	Breast cancer anti-estrogen resistance 1
A09	Hs.350899	NM_001748	CAPN2	Calpain 2, (m/II) large subunit
A10	Hs.74034	NM_001753	CAV1	Caveolin 1, caveolae protein, 22kDa
A11	Hs.212332	NM_001233	CAV2	Caveolin 2
A12	Hs.98303	NM_001234	CAV3	Caveolin 3
B01	Hs.690198	NM_001791	CDC42	Cell division cycle 42 (GTP binding protein, 25kDa)
B02	Hs.638121	NM_016823	CRK	V-crk sarcoma virus CT10 oncogene homolog (avian)
B03	Hs.592205	NM_005207	CRKL	V-crk sarcoma virus CT10 oncogene homolog (avian)-like
B04	Hs.476018	NM_001904	CTNNB1	Catenin (cadherin-associated protein), beta 1, 88kDa
B05	Hs.529451	NM_005219	DIAPH1	Diaphanous homolog 1 (Drosophila)
B06	Hs.159195	NM_001380	DOCK1	Dedicator of cytokinesis 1
B07	Hs.728928	NM_015548	DST	Dystonin
B08	Hs.195464	NM_001456	FLNA	Filamin A, alpha
B09	Hs.476448	NM_001457	FLNB	Filamin B, beta
B10	Hs.390567	NM_002037	FYN	FYN oncogene related to SRC, FGR, YES
B11	Hs.444356	NM_002086	GRB2	Growth factor receptor-bound protein 2
B12	Hs.445733	NM_002093	GSK3B	Glycogen synthase kinase 3 beta
C01	Hs.37003	NM_005343	HRAS	V-Ha-ras Harvey rat sarcoma viral oncogene homolog
C02	Hs.5158	NM_004517	ILK	Integrin-linked kinase
C03	Hs.644352	NM_181501	ITGA1	Integrin, alpha 1
C04	Hs.436416	NM_001004439	ITGA11	Integrin, alpha 11
C05	Hs.482077	NM_002203	ITGA2	Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)
C06	Hs.411312	NM_000419	ITGA2B	Integrin, alpha 2b (platelet glycoprotein IIb of IIb/IIIa complex, antigen CD41)
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.113157	NM_002207	ITGA9	Integrin, alpha 9
D02	Hs.174103	NM_002209	ITGAL	Integrin, alpha L (antigen CD11A (p180), lymphocyte function-associated antigen 1; alpha polypeptide)
D03	Hs.172631	NM_000632	ITGAM	Integrin, alpha M (complement component 3 receptor 3 subunit)
D04	Hs.436873	NM_002210	ITGAV	Integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)
D05	Hs.248472	NM_000887	ITGAX	Integrin, alpha X (complement component 3 receptor 4 subunit)
D06	Hs.643813	NM_002211	ITGB1	Integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)
D07	Hs.375957	NM_000211	ITGB2	Integrin, beta 2 (complement component 3 receptor 3 and 4 subunit)
D08	Hs.218040	NM_000212	ITGB3	Integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)
D09	Hs.632226	NM_000213	ITGB4	Integrin, beta 4
D10	Hs.536663	NM_002213	ITGB5	Integrin, beta 5
D11	Hs.470399	NM_000888	ITGB6	Integrin, beta 6
D12	Hs.435714	NM_002576	PAK1	P21 protein (Cdc42/Rac)-activated kinase 1
E01	Hs.518530	NM_002577	PAK2	P21 protein (Cdc42/Rac)-activated kinase 2
E02	Hs.656789	NM_002578	PAK3	P21 protein (Cdc42/Rac)-activated kinase 3
E03	Hs.20447	NM_005884	PAK4	P21 protein (Cdc42/Rac)-activated kinase 4
E04	Hs.607144	NM_018222	PARVA	Parvin, alpha
E05	Hs.475074	NM_013327	PARVB	Parvin, beta
E06	Hs.658995	NM_022141	PARVG	Parvin, gamma
E07	Hs.459691	NM_002613	PDPK1	3-phosphoinositide dependent protein kinase-1

Position	UniGene	GenBank	Symbol	Description
E08	Hs.282177	NM_012398	PIP5K1C	Phosphatidylinositol-4-phosphate 5-kinase, type I, gamma
E09	Hs.434248	NM_000445	PLEC	Plectin
E10	Hs.531704	NM_002737	PRKCA	Protein kinase C, alpha
E11	Hs.460355	NM_002738	PRKCB	Protein kinase C, beta
E12	Hs.631564	NM_002739	PRKCG	Protein kinase C, gamma
F01	Hs.500466	NM_000314	PTEN	Phosphatase and tensin homolog
F02	Hs.395482	NM_005607	PTK2	PTK2 protein tyrosine kinase 2
F03	Hs.446336	NM_002859	PXN	Paxillin
F04	Hs.413812	NM_006908	RAC1	Ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1)
F05	Hs.517601	NM_002872	RAC2	Ras-related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2)
F06	Hs.159130	NM_002880	RAF1	V-raf-1 murine leukemia viral oncogene homolog 1
F07	Hs.190334	NM_002884	RAP1A	RAP1A, member of RAS oncogene family
F08	Hs.369920	NM_015646	RAP1B	RAP1B, member of RAS oncogene family
F09	Hs.127897	NM_005312	RAPGEF1	Rap guanine nucleotide exchange factor (GEF) 1
F10	Hs.459035	NM_153815	RASGRF1	Ras protein-specific guanine nucleotide-releasing factor 1
F11	Hs.247077	NM_001664	RHOA	Ras homolog gene family, member A
F12	Hs.306307	NM_005406	ROCK1	Rho-associated, coiled-coil containing protein kinase 1
G01	Hs.591600	NM_004850	ROCK2	Rho-associated, coiled-coil containing protein kinase 2
G02	Hs.433795	NM_003029	SHC1	SHC (Src homology 2 domain containing) transforming protein 1
G03	Hs.592839	NM_005633	SOS1	Son of sevenless homolog 1 (Drosophila)
G04	Hs.291533	NM_006939	SOS2	Son of sevenless homolog 2 (Drosophila)
G05	Hs.195659	NM_005417	SRC	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G06	Hs.471014	NM_006289	TLN1	Talin 1
G07	Hs.471381	NM_022648	TNS1	Tensin 1
G08	Hs.515469	NM_003370	VASP	Vasodilator-stimulated phosphoprotein
G09	Hs.116237	NM_005428	VAV1	Vav 1 guanine nucleotide exchange factor
G10	Hs.369921	NM_003371	VAV2	Vav 2 guanine nucleotide exchange factor
G11	Hs.643896	NM_003373	VCL	Vinculin
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.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² 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.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

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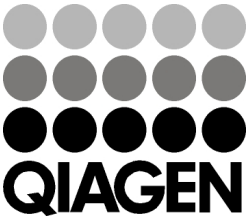

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