

RT² Profiler PCR Array (Rotor-Gene® Format)

Rat Cytoskeleton Regulators

Cat. no. 330231 PARN-088ZR

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 Cytoskeleton Regulators RT² Profiler PCR Array profiles the expression of 84 genes controlling the intracellular scaffolding's biogenesis, organization, polymerization, and depolymerization. The actin filaments (or microfilaments), intermediate filaments, and microtubules that comprise the cytoskeleton all share many regulatory mechanisms but each have unique functions. Microfilaments regulate cell motility, migration, size and shape via projections such as axons, dendrites, filopodia, growth cones, lamellipodia, microvilli, pseudopodia, and ruffles. Actin filaments also contribute to cell-cell and cell-matrix junctions, cytokinesis, cytoplasmic streaming, and muscle contraction. Intermediate filaments seem to not only share roles with microfilaments, but also arrange the three-dimensional cell structure by anchoring organelles in place. The dynamics of microtubules, the core component of mitotic spindles and the axonemes of eukaryotic cilia and flagella, control both vesicular transport and chromosomal segregation during cell division. The cytoskeletal regulatory genes represented by this array include calmodulin and calcineurin, kinases and phosphatases, and relevant ARF and RHO G-protein family members as well as their key regulatory factors. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes that regulate cytoskeleton dynamics 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.



Sample & Assay Technologies

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.102249	NM_001009268	Actr2	ARP2 actin-related protein 2 homolog (yeast)
A02	Rn.103326	NM_031068	Actr3	ARP3 actin-related protein 3 homolog (yeast)
A03	Rn.41376	XM_341895	Arap1	ArfGAP with RhoGAP domain, ankyrin repeat and PH domain 1
A04	Rn.73878	NM_001004222	Arfp2	ADP-ribosylation factor interacting protein 2
A05	Rn.20898	NM_001047869	Arhgap5	Rho GTPase activating protein 5
A06	Rn.15842	NM_001009600	Arhgdib	Rho, GDP dissociation inhibitor (GDI) beta
A07	Rn.64481	NM_021694	Arhgef1	Rho guanine nucleotide exchange factor (GEF) 1
A08	Rn.160580	NM_023982	Arhgef11	Rho guanine nucleotide exchange factor (GEF) 11
A09	Rn.2090	NM_019289	Arpc1b	Actin related protein 2/3 complex, subunit 1B
A10	Rn.93317	NM_001106919	Arpc2	Actin related protein 2/3 complex, subunit 2
A11	Rn.4233	NM_001105933	Arpc3	Actin related protein 2/3 complex, subunit 3
A12	Rn.198683	NM_001106615	Arpc4	Actin related protein 2/3 complex, subunit 4
B01	Rn.1639	NM_001025717	Arpc5	Actin related protein 2/3 complex, subunit 5
B02	Rn.161874	NM_153296	Aurka	Aurora kinase A
B03	Rn.10865	NM_053749	Aurkb	Aurora kinase B
B04	Rn.41092	NM_001106221	Aurkc	Aurora kinase C
B05	Rn.95155	NM_057196	Baiap2	BAI1-associated protein 2
B06	Rn.204926	NM_013146	Cald1	Caldesmon 1
B07	Rn.4166	NM_031969	Calm1	Calmodulin 1
B08	Rn.72627	NM_022184	Cask	Calcium/calmodulin-dependent serine protein kinase (MAGUK family)
B09	Rn.102823	NM_001011949	Ccna1	Cyclin A1
B10	Rn.9232	NM_171991	Ccnb1	Cyclin B1
B11	Rn.6743	NM_001009470	Ccnb2	Cyclin B2
B12	Rn.60067	NM_171994	Cdc42	Cell division cycle 42 (GTP binding protein)
C01	Rn.10871	NM_053657	Cdc42bpa	CDC42 binding protein kinase alpha
C02	Rn.17464	NM_001009689	Cdc42ep2	CDC42 effector protein (Rho GTPase binding) 2
C03	Rn.4040	NM_001048044	Cdc42ep3	CDC42 effector protein (Rho GTPase binding) 3
C04	Rn.10749	NM_080885	Cdk5	Cyclin-dependent kinase 5
C05	Rn.11213	NM_053891	Cdk5r1	Cyclin-dependent kinase 5, regulatory subunit 1
C06	Rn.11675	NM_017147	Cfl1	Cofilin 1, non-muscle
C07	Rn.89069	NM_001029911	Cit	Citron
C08	Rn.105840	XM_001053715	Clasp1	Cytoplasmic linker associated protein 1
C09	Rn.19943	NM_053722	Clasp2	Cytoplasmic linker associated protein 2
C10	Rn.22069	NM_031745	Clip1	CAP-GLY domain containing linker protein 1
C11	Rn.10893	NM_021997	Clip2	CAP-GLY domain containing linker protein 2
C12	Rn.163154	NM_019302	Crk	V-crk sarcoma virus CT10 oncogene homolog (avian)
D01	Rn.107869	NM_021868	Cttn	Cortactin
D02	Rn.143776	NM_001107517	Cyfp1	Cytoplasmic FMR1 interacting protein 1
D03	Rn.44008	NM_001106996	Cyfp2	Cytoplasmic FMR1 interacting protein 2
D04	Rn.3004	NM_001107393	Diaph1	Diaphanous homolog 1 (Drosophila)
D05	Rn.102412	NM_001033666	Dstn	Destrin
D06	Rn.773	NM_019357	Ezr	Ezrin
D07	Rn.213503	NM_001039609	Fnbp1l	Formin binding protein 1-like
D08	Rn.138713	NM_001107072	Fscn2	Fascin homolog 2, actin-bundling protein, retinal (Strongylocentrotus purpuratus)
D09	Rn.103770	NM_001004080	Gsn	Gelsolin
D10	Rn.106939	NM_001108489	Iqgap1	IQ motif containing GTPase activating protein 1
D11	Rn.11250	NM_031727	Limk1	LIM domain kinase 1
D12	Rn.11013	NM_024135	Limk2	LIM domain kinase 2
E01	Rn.122316	NM_152844	Lgl1	Lethal giant larvae homolog 1 (Drosophila)
E02	Rn.201800	NM_001135758	Macf1	Microtubule-actin crosslinking factor 1
E03	Rn.28235	NM_001013150	Map3k11	Mitogen-activated protein kinase kinase kinase 11
E04	Rn.203122	NM_001024278	Map4	Microtubule-associated protein 4
E05	Rn.37490	NM_017204	Map6	Microtubule-associated protein 6
E06	Rn.207195	NM_019231	Mapk13	Mitogen activated protein kinase 13
E07	Rn.7652	NM_138509	Mapre1	Microtubule-associated protein, RP/EB family, member 1
E08	Rn.2455	NM_017212	Mapt	Microtubule-associated protein tau
E09	Rn.42926	NM_021699	Mark2	MAP/microtubule affinity-regulating kinase 2

Position	UniGene	GenBank	Symbol	Description
E10	Rn.15169	NM_022927	Mid1	Midline 1
E11	Rn.2762	NM_030863	Msn	Moesin
E12	Rn.203004	NM_001105874	Mylk	Myosin light chain kinase
F01	Rn.81191	NM_057209	Mylk2	Myosin light chain kinase 2
F02	Rn.8768	NM_001106851	Nck1	NCK adaptor protein 1
F03	Rn.9067	NM_001108216	Nck2	NCK adaptor protein 2
F04	Rn.9149	NM_017198	Pak1	P21 protein (Cdc42/Rac)-activated kinase 1
F05	Rn.18543	NM_001106238	Pak4	P21 protein (Cdc42/Rac)-activated kinase 4
F06	Rn.203100	NM_030873	Pfn2	Profilin 2
F07	Rn.201706	XM_001064525	Phldb2	Pleckstrin homology-like domain, family B, member 2
F08	Rn.162937	NM_053890	Ppp1r12a	Protein phosphatase 1, regulatory (inhibitor) subunit 12A
F09	Rn.68116	NM_001107178	Ppp1r12b	Protein phosphatase 1, regulatory (inhibitor) subunit 12B
F10	Rn.6866	NM_017041	Ppp3ca	Protein phosphatase 3, catalytic subunit, alpha isoform
F11	Rn.11063	NM_017042	Ppp3cb	Protein phosphatase 3, catalytic subunit, beta isoform
F12	Rn.29157	NM_134366	Rac1	Ras-related C3 botulinum toxin substrate 1
G01	Rn.101301	NM_001108112	Racgap1	Rac GTPase-activating protein 1
G02	Rn.203261	NM_001005889	Rdx	Radixin
G03	Rn.107401	NM_057132	Rhoa	Ras homolog gene family, member A
G04	Rn.89756	NM_031098	Rock1	Rho-associated coiled-coil containing protein kinase 1
G05	Rn.163325	NM_198764	Sh3rf1	SH3 domain containing ring finger 1
G06	Rn.113532	NM_001107024	Ssh2	Slingshot homolog 2 (Drosophila)
G07	Rn.555	NM_017166	Slmn1	Stathmin 1
G08	Rn.204561	NM_001100558	Tiam1	T-cell lymphoma invasion and metastasis 1
G09	Rn.98750	NM_001108475	Vasp	Vasodilator-stimulated phosphoprotein
G10	Rn.207069	NM_001108248	Was	Wiskott-Aldrich syndrome homolog (human)
G11	Rn.7692	NM_001025114	Wasf1	WAS protein family, member 1
G12	Rn.216426	NM_001110365	Wasl	Wiskott-Aldrich syndrome-like
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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