

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

## Rat Cytoskeleton Regulators

Cat. no. 330231 PARN-088ZA

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 Rat Cytoskeleton Regulators RT<sup>2</sup> 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 *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°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>	Actr2	Actr3	Arap1	Arfp2	Arhgap5	Arhgdib	Arhgef1	Arhgef11	Arpc1b	Arpc2	Arpc3	Arpc4
<b>B</b>	Arpc5	Aurka	Aurkb	Aurkc	Baiap2	Cald1	Calm1	Cask	Ccna1	Ccnb1	Ccnb2	Cdc42
<b>C</b>	Cdc42bpa	Cdc42ep2	Cdc42ep3	Cdk5	Cdk5r1	CF1	Cit	Clasp1	Clasp2	Clip1	Clip2	Crk
<b>D</b>	Cttn	Cyfp1	Cyfp2	Diaph1	Dstn	Ezr	Fnbp1l	Fscn2	Gsn	Igap1	Limk1	Limk2
<b>E</b>	Ulg1	Macf1	Map3k11	Map4	Map6	Mapk13	Mapre1	Mapt	Mark2	Mid1	Msn	Mylk
<b>F</b>	Mylk2	Nck1	Nck2	Pak1	Pak4	Pfn2	Phldb2	Ppp1r12a	Ppp1r12b	Ppp3ca	Ppp3cb	Rac1
<b>G</b>	Racgap1	Rdx	Rhoa	Rock1	Sh3f1	Ssh2	Stmn1	Tiam1	Vasp	Was	Wasf1	Wasl
<b>H</b>	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

## Gene table: RT<sup>2</sup> 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	CF1	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

Position	UniGene	GenBank	Symbol	Description
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	Llg1	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
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	Stmn1	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, 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 <sup>™</sup> 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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