RT² Profiler PCR Array (Rotor-Gene® Format)

Rat mTOR Signaling

Cat. no. 330231 PARN-098ZR

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 Rat mTOR Signaling RT² Profiler PCR Array profiles the expression of 84 key genes involved in the mammalian target of rapamycin (mTOR) signaling pathway. mTOR, a serine/threonine protein kinase, integrates responses from a wide variety of signals (nutrients, hormones, growth factors and cellular stresses) to regulate cell growth, metabolism and survival. The first generation of mTOR inhibitors (e.g. rapamycin) failed to inhibit all mTOR functions, because the kinase forms two distinct protein complexes, mTORC1 and mTORC2. The rapamycin-sensitive mTORC1 complex regulates multiple biosynthetic cellular processes (protein synthesis, cell cycle progression, cell growth and proliferation). Until recently, the lack of mTORC2-specific inhibitors complicated elucidation of this protein complex's molecular functions. One definitive mTORC2 response is AKT activation, important for cell proliferation, migration and survival (apoptosis and autophagy inhibition). This array includes members of the mTORC1 and mTORC2 complexes as well as upstream regulators of many mTOR responses, and downstream genes from the many cellular processes regulated by mTOR complex activation. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in mTOR signaling 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.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A02	Rn.102669	NM_001106259	Akt1s1	AKT1 substrate 1 (proline-rich)
A03	Rn.87066	NM_017093	Akt2	V-akt murine thymoma viral oncogene homolog 2
A04	Rn.10506	NM_031575	Akt3	V-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)
A05	Rn.103055	NM_001106924	Cab39	Calcium binding protein 39
A06	Rn.163279	NM_001011917	Cab39l	Calcium binding protein 39-like
A07	Rn.22455	NM_001108517	Ccdc88b	Coiled-coil domain containing 88B
A08	Rn.60067	NM_171994	Cdc42	Cell division cycle 42 (GTP binding protein)
A09	Rn.23019	NM_001107588	Chuk	Conserved helix-loop-helix ubiquitous kinase
A10	Rn.9775	NM_080906	Ddit4	DNA-damage-inducible transcript 4
A11	Rn.19672	NM_080399	Ddit4l	DNA-damage-inducible transcript 4-like
A12	Rn.95954	NM_001008324	Eif4b	Eukaryotic translation initiation factor 4B
B01	Rn.11275	NM_053974	Eif4e	Eukaryotic translation initiation factor 4E
B02	Rn.11161	NM_053857	Eif4ebp1	Eukaryotic translation initiation factor 4E binding protein 1
B03	Rn.24129	NM_001033069	Eif4ebp2	Eukaryotic translation initiation factor 4E binding protein 2
B04	Rn.80611	NM_013102	Fkbp1a	FK506 binding protein 1a
B05	Rn.99789	NM_001037180	Fkbp8	FK506 binding protein 8
B06	Rn.10426	NM_032080	Gsk3b	Glycogen synthase kinase 3 beta
B07	Rn.10852	NM_024359	Hif1a	Hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)
B08	Rn.102180	NM_001098241	Hras	Harvey rat sarcoma virus oncogene
B09	Rn.163092	NM_153629	Hspa4	Heat shock protein 4
B10	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
B11	Rn.26369	NM_012588	Igfbp3	Insulin-like growth factor binding protein 3
B12	Rn.19222	NM_053355	Ikbkb	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
C01	Rn.95042	NM_133409	Ilk	Integrin-linked kinase
C02	Rn.989	NM_019130	Ins2	Insulin 2
C03	Rn.9876	NM_017071	Insr	Insulin receptor
C04	Rn.10476	NM_012969	Irs1	Insulin receptor substrate 1
C05	Rn.24554	NM_031515	Kras	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
C06	Rn.34914	NM_053842	Mapk1	Mitogen activated protein kinase 1
C07	Rn.2592	NM_017347	Mapk3	Mitogen activated protein kinase 3
C08	Rn.105886	NM_001011964	Mapkap1	Mitogen-activated protein kinase associated protein 1
C09	Rn.9444	NM_022404	Mlst8	MTOR associated protein, LST8 homolog (S. cerevisiae)
C10	Rn.11008	NM_019906	Mtor	Mechanistic target of rapamycin (serine/threonine kinase)
C11	Rn.55135	NM_023092	Myo1c	Myosin IC
C12	Rn.217722	NM_080766	Nras	Neuroblastoma ras oncogene
D01	Rn.10905	NM_031081	Pdpk1	3-phosphoinositide dependent protein kinase-1
D02	Rn.30010	NM_022958	Pik3c3	Phosphoinositide-3-kinase, class 3
D03	Rn.44193	NM_133399	Pik3ca	Phosphoinositide-3-kinase, catalytic, alpha polypeptide
D04	Rn.44268	NM_053481	Pik3cb	Phosphoinositide-3-kinase, catalytic, beta polypeptide
D05	Rn.11530	NM_001108978	Pik3cd	Phosphoinositide-3-kinase, catalytic, delta polypeptide
D06	Rn.152697	NM_001106723	Pik3cg	Phosphoinositide-3-kinase, catalytic, gamma polypeptide
D07	Rn.10599	NM_013005	Pik3r1	Phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
D08	Rn.22497	NM_022185	Pik3r2	Phosphoinositide-3-kinase, regulatory subunit 2 (beta)
D09	Rn.11130	NM_030992	Pld1	Phospholipase D1
D10	Rn.9798	NM_033299	Pld2	Phospholipase D2
D11	Rn.1271	NM_017039	Ppp2ca	Protein phosphatase 2, catalytic subunit, alpha isoform
D12	Rn.44437	NM_022209	Ppp2r2b	Protein phosphatase 2 (formerly 2A), regulatory subunit B, beta isoform
E01	Rn.24600	NM_001108577	Ppp2r4	Protein phosphatase 2A activator, regulatory subunit 4
E02	Rn.87789	NM_019142	Prkaa1	Protein kinase, AMP-activated, alpha 1 catalytic subunit
E03	Rn.64583	NM_023991	Prkaa2	Protein kinase, AMP-activated, alpha 2 catalytic subunit
E04	Rn.3619	NM_031976	Prkab1	Protein kinase, AMP-activated, beta 1 non-catalytic subunit
E05	Rn.207202	NM_022627	Prkab2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
E06	Rn.11089	NM_013010	Prkag1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
E07	Rn.51208	NM_184051	Prkag2	Protein kinase, AMP-activated, gamma 2 non-catalytic subunit
E08	Rn.149163	NM_001106921	Prkag3	Protein kinase, AMP-activated, gamma 3 non-catalytic subunit

Position	UniGene	GenBank	Symbol	Description
E09	Rn.207908	NM_001105713	Prkca	Protein kinase C, alpha
E10	Rn.91118	NM_012713	Prkcb	Protein kinase C, beta
E11	Rn.216481	NM_017171	Prkce	Protein kinase C, epsilon
E12	Rn.9747	NM_012628	Prkcg	Protein kinase C, gamma
F01	Rn.22158	NM_031606	Pten	Phosphatase and tensin homolog
F02	Rn.859	NM_013216	Rheb	Ras homolog enriched in brain
F03	Rn.107401	NM_057132	Rhoa	Ras homolog gene family, member A
F04	Rn.34341	NM_017160	Rps6	Ribosomal protein S6
F05	Rn.34915	NM_031107	Rps6ka1	Ribosomal protein S6 kinase polypeptide 1
F06	Rn.213814	NM_057128	Rps6ka2	Ribosomal protein S6 kinase polypeptide 2
F07	Rn.8940	NM_001108048	Rps6ka5	Ribosomal protein S6 kinase, polypeptide 5
F08	Rn.4042	NM_031985	Rps6kb1	Ribosomal protein S6 kinase, polypeptide 1
F09	Rn.162512	NM_001010962	Rps6kb2	Ribosomal protein S6 kinase, polypeptide 2
F10	Rn.98539	NM_001134499	Rptor	Regulatory associated protein of MTOR, complex 1
F11	Rn.2816	NM_053973	Rraga	Ras-related GTP binding A
F12	Rn.203382	NM_053972	Rragb	Ras-related GTP binding B
G01	Rn.6455	NM_001048184	Rragc	Ras-related GTP binding C
G02	Rn.23439	NM_001106641	Rragd	Ras-related GTP binding D
G03	Rn.4636	NM_019232	Sgk1	Serum/glucocorticoid regulated kinase 1
G04	Rn.12052	NM_001108069	Stk11	Serine/threonine kinase 11
G05	Rn.54443	NM_030989	Tp53	Tumor protein p53
G06	Rn.205837	NM_021854	Tsc1	Tuberous sclerosis 1
G07	Rn.5875	NM_012680	Tsc2	Tuberous sclerosis 2
G08	Rn.24509	NM_001108341	Ulk1	Unc-51 like kinase 1 (C. elegans)
G09	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G10	Rn.198550	NM_053549	Vegfb	Vascular endothelial growth factor B
G11	Rn.6913	NM_053653	Vegfc	Vascular endothelial growth factor C
G12	Rn.2502	NM_013053	Ywhaq	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide
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.
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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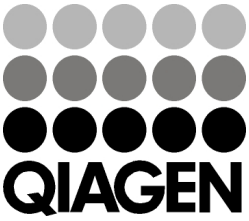

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