RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Chinese hamster ovary (CHO) cell mTOR Signaling

Cat. no. 330231 PAJJ-098ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² 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
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Chinese Hamster Ovary (CHO) Cell mTOR Signaling RT² Profiler PCR Array profiles the expression of 84 key genes in Chinese hamster ovary (CHO) cell lines 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, research studies 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 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. RT² 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 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 (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	Akt2	Braf	Cab39l	Chuk	Figf	Fkbp8	Ikbke	Ilk	LOC1007506 96	LOC1007507 73	LOC1007512 24	LOC1007512 93
B	LOC1007513 90	LOC1007515 39	LOC1007516 42	LOC1007516 94	LOC1007517 17	LOC1007524 54	LOC1007525 82	LOC1007531 49	LOC1007534 19	LOC1007552 26	LOC1007570 42	LOC1007571 60
C	LOC1007575 13	LOC1007576 14	LOC1007588 88	LOC1007589 11	LOC1007590 64	LOC1007595 14	LOC1007595 45	LOC1007597 45	LOC1007607 16	LOC1007608 65	LOC1007609 22	LOC1007617 04
D	LOC1007629 50	LOC1007641 80	LOC1007646 28	LOC1007648 58	LOC1007654 33	LOC1007660 06	LOC1007660 84	LOC1007668 18	LOC1007670 97	LOC1007679 09	LOC1007682 33	LOC1007686 13
E	LOC1007689 97	LOC1007694 60	LOC1007695 74	LOC1007696 54	LOC1007708 49	LOC1007721 19	LOC1007723 59	LOC1007724 77	LOC1007737 37	Mapkap1	Mlst8	Mtor
F	P53	Pik3c3	Pik3ca	Pik3cb	Pik3cd	Pik3cg	Pld1	Ppp2r2b	Prkag1	Prkag3	Prkce	Pten
G	Rps6ka2	Rps6kb2	Rptor	Rragd	Sgk2	Sgk3	Stk11	Stradb	Telo2	Tsc1	Ulk1	Ulk2
H	Actb	Actr5	B2m	Gapdh	LOC1007697 68	JGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	N/A	XM_003505253	Akt2	Thymoma viral proto-oncogene 2
A02	N/A	XM_003503022	Braf	Braf transforming gene
A03	N/A	XM_003500507	Cab39l	Calcium binding protein 39-like
A04	N/A	XM_003508455	Chuk	Conserved helix-loop-helix ubiquitous kinase
A05	N/A	XM_003503237	Figf	C-fos induced growth factor
A06	N/A	XM_003499158	Fkbp8	FK506 binding protein 8
A07	N/A	XM_003501226	Ikbke	Inhibitor of kappaB kinase epsilon
A08	N/A	NM_001246814	Ilk	Integrin linked kinase
A09	N/A	XM_003505062	LOC100750 696	Ras-related GTP-binding protein C-like
A10	N/A	XM_003503099	LOC100750 773	Rapamycin-insensitive companion of mTOR-like
A11	N/A	XM_003497219	LOC100751 224	Phosphoinositide 3-kinase regulatory subunit 5-like
A12	N/A	XM_003508377	LOC100751 293	Hypoxia-inducible factor 1-alpha-like
B01	N/A	XM_003510628	LOC100751 390	Insulin receptor substrate 1
B02	N/A	XM_003516201	LOC100751 539	GTPase KRas-like
B03	N/A	XM_003499708	LOC100751 642	Insulin-like growth factor I-like
B04	N/A	XM_003513349	LOC100751 694	14-3-3 protein theta-like
B05	N/A	XM_003515800	LOC100751 717	DNA damage-inducible transcript 4-like protein-like
B06	N/A	XM_003508130	LOC100752 454	RAC-gamma serine/threonine-protein kinase-like
B07	N/A	XM_003497152	LOC100752 582	Phospholipase D2-like
B08	N/A	XM_003510126	LOC100753 149	Mitogen-activated protein kinase 3-like
B09	N/A	XM_003503039	LOC100753 419	Vascular endothelial growth factor C-like
			LOC100755	

Position	UniGene	GenBank	Symbol	Description
B10	N/A	XM_003495911	226	5'-AMP-activated protein kinase subunit beta-1-like
B11	N/A	XM_003506632	LOC100757042	Transforming protein RhoA-like
B12	N/A	XM_003511269	LOC100757160	Peptidyl-prolyl cis-trans isomerase FKBP2-like
C01	N/A	XM_003503811	LOC100757513	Ribosomal protein S6 kinase beta-1-like
C02	N/A	XM_003505807	LOC100757614	GTPase NRas-like
C03	N/A	XM_003510715	LOC100758888	Serine/threonine-protein phosphatase 2A 56 kDa regulatory subunit beta isoform-like
C04	N/A	XM_003514058	LOC100758911	Eukaryotic translation initiation factor 4B-like
C05	N/A	XM_003506710	LOC100759064	Myosin-Ic-like
C06	N/A	XM_003502846	LOC100759514	Mitogen-activated protein kinase 1-like
C07	N/A	XM_003511278	LOC100759545	Vascular endothelial growth factor B-like
C08	N/A	XM_003509294	LOC100759745	DNA damage-inducible transcript 4 protein-like
C09	N/A	XM_003508080	LOC100760716	Insulin-like
C10	N/A	XM_003501080	LOC100760865	Glycogen synthase kinase-3 beta-like
C11	N/A	XM_003511571	LOC100760922	Protein kinase C beta type-like
C12	N/A	XM_003514134	LOC100761704	Ras-related GTP-binding protein A-like
D01	N/A	XM_003509649	LOC100762950	Protein kinase C gamma type-like
D02	N/A	XM_003507735	LOC100764180	Ras-related GTP-binding protein B-like
D03	N/A	XM_003498506	LOC100764628	Heat shock 70 kDa protein 4-like
D04	N/A	XM_003504388	LOC100764858	Insulin-like growth factor-binding protein 3-like
D05	N/A	XM_003503632	LOC100765433	Cell division control protein 42 homolog
D06	N/A	XM_003501851	LOC100766006	Protein kinase C alpha type-like
D07	N/A	XM_003498510	LOC100766084	Serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform-like
D08	N/A	XM_003507741	LOC100766818	Insulin receptor-like
D09	N/A	XM_003504840	LOC100767097	CAMP-dependent protein kinase catalytic subunit beta-like
D10	N/A	XM_003495735	LOC100767909	5'-AMP-activated protein kinase catalytic subunit alpha-2-like
D11	N/A	XM_003501316	LOC100768233	GTP-binding protein Rheb-like
D12	N/A	XM_003499902	LOC100768613	Eukaryotic translation initiation factor 4E-binding protein 2-like
E01	N/A	XM_003501939	LOC100768997	CAMP-dependent protein kinase catalytic subunit alpha-like
E02	N/A	XM_003498742	LOC100769460	RAC-alpha serine/threonine-protein kinase-like
E03	N/A	XM_003503295	LOC100769574	5'-AMP-activated protein kinase catalytic subunit alpha-1-like
E04	N/A	XM_003498215	LOC100769654	Eukaryotic translation initiation factor 4E-binding protein 1-like
E05	N/A	XM_003508302	LOC100770849	Ribosomal protein S6 kinase alpha-1-like
E06	N/A	XM_003514280	LOC100772119	Calcium-binding protein 39-like
E07	N/A	XM_003505386	LOC100772359	5'-AMP-activated protein kinase subunit beta-2-like
E08	N/A	XM_003509536	LOC100772477	3-phosphoinositide-dependent protein kinase 1-like
E09	N/A	XM_003509750	LOC100773737	GTPase HRas-like

Position	UniGene	GenBank	Symbol	Description
E10	N/A	XM_003511430	Mapkap1	Mitogen-activated protein kinase associated protein 1
E11	N/A	XM_003501509	Mlst8	MTOR associated protein, LST8 homolog (S. cerevisiae)
E12	N/A	XM_003513174	Mtor	Mechanistic target of rapamycin (serine/threonine kinase)
F01	N/A	NM_001243976	P53	P53 tumor suppressor
F02	N/A	XM_003507810	Pik3c3	Phosphoinositide-3-kinase, class 3
F03	N/A	XM_003509075	Pik3ca	Phosphatidylinositol 3-kinase, catalytic, alpha polypeptide
F04	N/A	XM_003502501	Pik3cb	Phosphatidylinositol 3-kinase, catalytic, beta polypeptide
F05	N/A	XM_003511019	Pik3cd	Phosphatidylinositol 3-kinase catalytic delta polypeptide
F06	N/A	XM_003511586	Pik3cg	Phosphoinositide-3-kinase, catalytic, gamma polypeptide
F07	N/A	NM_001246828	Pld1	Phospholipase D1
F08	N/A	XM_003503279	Ppp2r2b	Protein phosphatase 2 (formerly 2A), regulatory subunit B (PR 52), beta isoform
F09	N/A	XM_003510735	Prkag1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
F10	N/A	XM_003507602	Prkag3	Protein kinase, AMP-activated, gamma 3 non-catatlytic subunit
F11	N/A	XM_003496228	Prkce	Protein kinase C, epsilon
F12	N/A	XM_003510310	Pten	Phosphatase and tensin homolog
G01	N/A	XM_003504057	Rps6ka2	Rps6ka2 ribosomal protein S6 kinase, polypeptide 2
G02	N/A	XM_003509935	Rps6kb2	Rps6kb2 ribosomal protein S6 kinase, polypeptide 2
G03	N/A	XM_003496873	Rptor	Regulatory associated protein of MTOR, complex 1
G04	N/A	XM_003495456	Rragd	Ras-related GTP binding D
G05	N/A	XM_003502021	Sgk2	Serum/glucocorticoid regulated kinase 2
G06	N/A	XM_003512545	Sgk3	Serum/glucocorticoid regulated kinase 3
G07	N/A	XM_003502565	Stk11	Serine/threonine kinase 11
G08	N/A	XM_003507025	Stradb	STE20-related kinase adaptor beta
G09	N/A	XM_003501482	Telo2	TEL2, telomere maintenance 2, homolog (S. cerevisiae)
G10	N/A	XM_003513265	Tsc1	Tuberous sclerosis 1
G11	N/A	XM_003501723	Ulk1	Unc-51 like kinase 1 (C. elegans)
G12	N/A	XM_003496361	Ulk2	Unc-51 like kinase 2 (C. elegans)
H01	N/A	NM_001244575	Actb	Actin, beta
H02	N/A	XM_003497123	Actr5	ARP5 actin-related protein 5 homolog (yeast)
H03	N/A	NM_001246674	B2m	Beta-2 microglobulin
H04	N/A	NM_001244854	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H05	N/A	XM_003503017	LOC100769768	Hypoxanthine-guanine phosphoribosyltransferase-like
H06	N/A	SA_00519	JGDC	Hamster 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 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
RT² SYBR Green ROX™ 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
RT² 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.

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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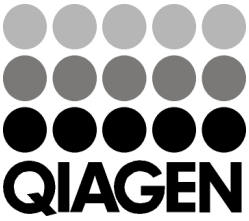

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