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

Pig mTOR Signaling PCR Array

Cat. no. 330231 PASS-098Z

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™

QIAGEN®

Sample & Assay Technologies

Description

The Pig 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. A set of controls present on each array enables data analysis using the ΔΔCT method of relative quantification and assessment of reverse transcription performance, genomic DNA contamination, and PCR performance. Using real-time PCR, researcher 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	AKT1	AKT1S1	AKT2	AKT3	BRAF	CAB39	CAB39L	CDC42	CHUK	DDIT4	DDIT4L	DEPTOR
B	EIF4E	EIF4EBP1	EIF4EBP2	FKBP8	GSK3B	HIF1A	HSPA4	IGF1	IGFBP3	IKBKB	ILK	INS
C	INSR	IRS1	KRAS	LOC100512677	LOC654323	MAPK1	MAPK3	MLST8	MTOR	MYO1C	NRAS	PDPK1
D	PIK3C3	PIK3CA	PIK3CB	PIK3CD	PIK3CG	PIK3R2	PLD1	PLD2	PPP2CA	PPP2R2B	PPP2R4	PRKAA1
E	PRKAA2	PRKAB1	PRKAB2	PRKAG1	PRKAG2	PRKCA	PRKCB	PRKCE	PRKCG	PTEN	RHEB	RHOA
F	RICTOR	RPS6	RPS6KA1	RPS6KA2	RPS6KA4	RPS6KA5	RPS6KB1	RPS6KB2	RRAGA	RRAGC	RRAGD	SGK1
G	STK11	STRADB	TELO2	TP53	TSC1	TSC2	ULK1	ULK2	VEGFA	VEGFB	VEGFC	YWHAQ
H	ACTB	B2M	GAPDH	HPRT1	RPL13A	SGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Ssc.19672	NM_001159776	AKT1	V-akt murine thymoma viral oncogene homolog 1
A02	N/A	XM_003127335	AKT1S1	Proline-rich AKT1 substrate 1-like
A03	Ssc.43170	NM_001256779	AKT2	V-akt murine thymoma viral oncogene homolog 2
A04	Ssc.55979	NM_001256146	AKT3	V-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)
A05	N/A	XM_003134610	BRAF	V-raf murine sarcoma viral oncogene homolog B1
A06	Ssc.24243	XM_003359671	CAB39	Calcium binding protein 39
A07	N/A	XM_003130971	CAB39L	Calcium-binding protein 39-like
A08	Ssc.26948	NM_001078680	CDC42	Cell division cycle 42 (GTP binding protein, 25kDa)
A09	Ssc.21683	NM_001114279	CHUK	Conserved helix-loop-helix ubiquitous kinase
A10	Ssc.96319	NM_001243452	DDIT4	DNA-damage-inducible transcript 4
A11	N/A	XM_003129299	DDIT4L	DNA damage-inducible transcript 4-like protein-like
A12	Ssc.32274	XM_001926085	DEPTOR	DEP domain containing MTOR-interacting protein
B01	Ssc.22107	XM_003129314	EIF4E	Eukaryotic translation initiation factor 4E
B02	Ssc.13262	NM_001244225	EIF4EBP1	Eukaryotic translation initiation factor 4E binding protein 1
B03	N/A	XM_003133058	EIF4EBP2	Eukaryotic translation initiation factor 4E-binding protein 2-like
B04	Ssc.16869	XM_003123516	FKBP8	FK506 binding protein 8, 38kDa
B05	Ssc.83145	NM_001128443	GSK3B	Glycogen synthase kinase 3 beta
B06	Ssc.42713	NM_001123124	HIF1A	Hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)
B07	Ssc.3313	XM_005661654	HSPA4	Heat shock 70kDa protein 4
B08	Ssc.16231	NM_214256	IGF1	Insulin-like growth factor 1 (somatomedin C)
B09	Ssc.42774	NM_001005156	IGFBP3	Insulin-like growth factor binding protein 3
B10	Ssc.31350	NM_001099935	IKBKB	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
B11	N/A	XM_003357131	ILK	Integrin-linked kinase
B12	Ssc.583	NM_001109772	INS	Insulin
C01	Ssc.82460	XM_005654749	INSR	Insulin receptor
C02	Ssc.70308	NM_001244489	IRS1	Insulin receptor substrate 1
C03	N/A	XM_003126427	KRAS	GTPase KRas-like
C04	N/A	XM_005668590	LOC100512677	Regulatory-associated protein of mTOR-like
C05	Ssc.54039	NM_001038000	LOC654323	FKBP1A-like
C06	Ssc.72142	NM_001198922	MAPK1	Extracellular signal-regulated kinase-2
C07	Ssc.96010	XM_003360728	MAPK3	Mitogen-activated protein kinase 3
C08	N/A	XM_003481106	MLST8	MTOR associated protein, LST8 homolog (S. cerevisiae)
C09	Ssc.101527	XM_003127584	MTOR	Mechanistic target of rapamycin (serine/threonine kinase)
C10	N/A	XM_005657016	MYO1C	Myosin IC
C11	Ssc.98866	NM_001044537	NRAS	Neuroblastoma RAS viral (v-ras) oncogene homolog
C12	Ssc.83834	XM_005655187	PDPK1	3-phosphoinositide dependent protein kinase-1
D01	Ssc.13366	NM_001012956	PIK3C3	Phosphoinositide-3-kinase, class 3
D02	N/A	XM_005674652	PIK3CA	Phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit alpha
D03	N/A	XM_005669881	PIK3CB	Phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit beta
D04	Ssc.31341	XM_003127540	PIK3CD	Phosphoinositide-3-kinase, catalytic, delta polypeptide
D05	Ssc.82467	NM_213939	PIK3CG	Phosphoinositide-3-kinase, catalytic, gamma polypeptide

Position	UniGene	GenBank	Symbol	Description
D06	N/A	XM_003480753	PIK3R2	Phosphoinositide-3-kinase, regulatory subunit 2 (beta)
D07	Ssc.76278	NM_001244589	PLD1	Phospholipase D1, phosphatidylcholine-specific
D08	Ssc.27951	XM_005669176	PLD2	Phospholipase D2
D09	Ssc.13983	NM_214366	PPP2CA	Protein phosphatase 2, catalytic subunit, alpha isozyme
D10	Ssc.103	NM_214025	PPP2R2B	Protein phosphatase 2, regulatory subunit B, beta
D11	N/A	XM_001926077	PPP2R4	Serine/threonine-protein phosphatase 2A activator-like
D12	Ssc.26892	NM_001167633	PRKAA1	Protein kinase, AMP-activated, alpha 1 catalytic subunit
E01	Ssc.16257	NM_214266	PRKAA2	Protein kinase, AMP-activated, alpha 2 catalytic subunit
E02	Ssc.1694	NM_001243621	PRKAB1	Protein kinase, AMP-activated, beta 1 non-catalytic subunit
E03	Ssc.37137	NM_001243683	PRKAB2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
E04	Ssc.26338	NM_001001642	PRKAG1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
E05	N/A	XM_005654264	PRKAG2	Protein kinase, AMP-activated, gamma 2 non-catalytic subunit
E06	Ssc.15802	XM_005668672	PRKCA	Protein kinase C, alpha
E07	Ssc.349	XM_005662075	PRKCB	Protein kinase C, beta
E08	N/A	XM_005662579	PRKCE	Protein kinase C, epsilon
E09	N/A	XM_003356041	PRKCG	Protein kinase C gamma type-like
E10	Ssc.7652	NM_001143696	PTEN	Phosphatase and tensin homolog
E11	N/A	NM_001287846	RHEB	GTP-binding protein Rheb-like
E12	Ssc.7096	NM_001244437	RHOA	Ras homolog family member A
F01	N/A	XM_003359762	RICTOR	RPTOR independent companion of MTOR, complex 2
F02	Ssc.51792	XM_003121890	RPS6	Ribosomal protein S6
F03	Ssc.2947	NM_001243214	RPS6KA1	Ribosomal protein S6 kinase, 90kDa, polypeptide 1
F04	N/A	XM_003121097	RPS6KA2	Ribosomal protein S6 kinase alpha-2-like
F05	N/A	XM_003353803	RPS6KA4	Ribosomal protein S6 kinase alpha-4-like
F06	N/A	XM_005666394	RPS6KA5	Ribosomal protein S6 kinase, 90kDa, polypeptide 5
F07	Ssc.22127	XM_003131671	RPS6KB1	Ribosomal protein S6 kinase, 70kDa, polypeptide 1
F08	N/A	XM_003122462	RPS6KB2	Ribosomal protein S6 kinase, 70kDa, polypeptide 2
F09	N/A	XM_005660087	RRAGA	Ras-related GTP binding A
F10	Ssc.26059	XM_003127801	RRAGC	Ras-related GTP binding C
F11	Ssc.25575	NM_001243623	RRAGD	Ras-related GTP binding D
F12	Ssc.12284	NM_001244459	SGK1	Serum/glucocorticoid regulated kinase 1
G01	N/A	XM_005661389	STK11	Serine/threonine kinase 11
G02	Ssc.19316	XM_003133587	STRADB	STE20-related kinase adaptor beta
G03	N/A	XM_003124718	TELO2	Telomere length regulation protein TEL2 homolog
G04	Ssc.15917	NM_213824	TP53	Tumor protein p53
G05	Ssc.47066	XM_005660541	TSC1	Tuberous sclerosis 1
G06	Ssc.29112	XM_003354669	TSC2	Tuberous sclerosis 2
G07	N/A	XM_001928551	ULK1	Unc-51-like kinase 1 (C. elegans)
G08	N/A	XM_005669261	ULK2	Unc-51 like autophagy activating kinase 2
G09	Ssc.57541	NM_214084	VEGFA	Vascular endothelial growth factor A
G10	Ssc.2095	XM_003122578	VEGFB	Vascular endothelial growth factor B-like
G11	N/A	XM_003133319	VEGFC	Vascular endothelial growth factor C-like
G12	Ssc.2456	XM_003481290	YWHAQ	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide
H01	Ssc.10316	XM_003357928	ACTB	Actin, beta
H02	Ssc.73773	NM_213978	B2M	Beta-2-microglobulin
H03	Ssc.79971	NM_001206359	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Ssc.4158	NM_001032376	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Ssc.17024	NM_001244068	RPL13A	Ribosomal protein L13a
H06	N/A	SA_00133	SGDC	Pig 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

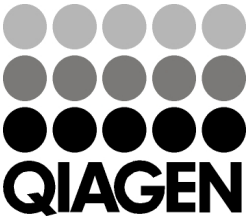
* Larger kit sizes available; please inquire.

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.

www.qiagen.com

Australia ▪ 1-800-243-800
Austria ▪ 0800/281010
Belgium ▪ 0800-79612
Brazil ▪ 0800-557779
Canada ▪ 800-572-9613
China ▪ 8621-3865-3865
Denmark ▪ 80-885945
Finland ▪ 0800-914416
France ▪ 01-60-920-930
Germany ▪ 02103-29-12000
Hong Kong ▪ 800 933 965
Ireland ▪ 1800 555 049
Italy ▪ 800-787980
Japan ▪ 03-6890-7300
Korea (South) ▪ 080-000-7145
Luxembourg ▪ 8002 2076
Mexico ▪ 01-800-7742-436
The Netherlands ▪ 0800 0229592
Norway ▪ 800-18859
Singapore ▪ 1800-742-4368
Spain ▪ 91-630-7050
Sweden ▪ 020-790282
Switzerland ▪ 055-254-22-11
UK ▪ 01293-422-911
USA ▪ 800-426-8157



Sample & Assay Technologies