

RT² Profiler PCR Array (Rotor-Gene® Format)

Dog mTOR Signaling

Cat. no. 330231 PAFD-098ZR

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 Dog 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 cyclers (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
1	N/A	XM_005623876	AKT1	V-akt murine thymoma viral oncogene homolog 1
2	N/A	XM_005616283	AKT1S1	AKT1 substrate 1 (proline-rich)
3	Cfa.10875	NM_001012340	AKT2	V-akt murine thymoma viral oncogene homolog 2
4	Cfa.4557	XM_005622592	AKT3	V-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)
5	N/A	XM_534599	CAB39	Calcium binding protein 39
6	N/A	XM_005633859	CAB39L	Calcium binding protein 39-like
7	Cfa.39956	NM_001003254	CDC42	Cell division cycle 42 (GTP binding protein, 25kDa)
8	N/A	XM_534990	CHUK	Conserved helix-loop-helix ubiquitous kinase
9	N/A	XM_546156	DDIT4	DNA-damage-inducible transcript 4
10	N/A	XM_544999	DDIT4L	DNA-damage-inducible transcript 4-like
11	N/A	XM_539149	DEPTOR	DEP domain containing MTOR-interacting protein
12	N/A	XM_005636787	EIF4B	Eukaryotic translation initiation factor 4B
13	N/A	XM_005639217	EIF4E	Eukaryotic translation initiation factor 4E
14	N/A	XM_549448	EIF4EBP1	Eukaryotic translation initiation factor 4E binding protein 1
15	N/A	XM_546145	EIF4EBP2	Eukaryotic translation initiation factor 4E binding protein 2
16	Cfa.10988	NM_001252190	FKBP1A	FK506 binding protein 1A, 12kDa
17	N/A	XM_005632687	FKBP8	FK506 binding protein 8, 38kDa
18	N/A	XM_535751	GSK3B	Glycogen synthase kinase 3 beta
19	Cfa.126	NM_001287163	HIF1A	Hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)
20	Cfa.3599	NM_001287069	HRAS	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
21	Cfa.19900	NM_001048016	HSPA4	Heat shock 70kDa protein 4
22	Cfa.3888	NM_001313855	IGF1	Insulin-like growth factor 1 (somatomedin C)
23	N/A	XM_548740	IGFBP3	Insulin-like growth factor binding protein 3
24	N/A	XM_539954	IKBKB	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
25	N/A	XM_534040	ILK	Integrin-linked kinase
26	Cfa.18796	NM_001130093	INS	Insulin
27	N/A	XM_005633222	INSR	Insulin receptor
28	N/A	XM_543274	IRS1	Insulin receptor substrate 1
29	Cfa.2796	NM_001110800	MAPK1	Mitogen-activated protein kinase 1
30	Cfa.33452	NM_001252035	MAPK3	Mitogen-activated protein kinase 3
31	N/A	XM_005625353	MAPKAP1	Mitogen-activated protein kinase associated protein 1
32	N/A	XM_005621690	MLST8	MTOR associated protein, LST8 homolog (<i>S. cerevisiae</i>)
33	N/A	XM_005618003	MTOR	Mechanistic target of rapamycin (serine/threonine kinase)
34	N/A	XM_537765	MYO1C	Myosin IC
35	N/A	XM_005621677	PDPK1	3-phosphoinositide dependent protein kinase-1
36	N/A	NM_001287160	PIK3C3	Phosphoinositide-3-kinase, class 3
37	N/A	XM_545208	PIK3CA	Phosphoinositide-3-kinase, catalytic, alpha polypeptide
38	N/A	XM_534280	PIK3CB	Phosphoinositide-3-kinase, catalytic, beta polypeptide

Position	UniGene	GenBank	Symbol	Description
39	N/A	XM_546764	PIK3CD	Phosphoinositide-3-kinase, catalytic, delta polypeptide
40	N/A	XM_005630959	PIK3CG	Phosphoinositide-3-kinase, catalytic, gamma polypeptide
41	Cfa.4502	XM_544363	PIK3R1	Phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
42	N/A	XM_014110360	PLD1	Phospholipase D1, phosphatidylcholine-specific
43	N/A	XM_005620316	PLD2	Phospholipase D2
44	Cfa.47717	NM_001003063	PPP2CA	Protein phosphatase 2, catalytic subunit, alpha isozyme
45	N/A	XM_003433780	PPP2R2B	Protein phosphatase 2, regulatory subunit B, beta
46	N/A	XM_005625252	PPP2R4	Protein phosphatase 2A activator, regulatory subunit 4
47	N/A	XM_536491	PRKAA1	Protein kinase, AMP-activated, alpha 1 catalytic subunit
48	N/A	XM_014113763	PRKAA2	Protein kinase, AMP-activated, alpha 2 catalytic subunit
49	N/A	XM_543421	PRKAB1	Protein kinase, AMP-activated, beta 1 non-catalytic subunit
50	N/A	XM_845060	PRKAB2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
51	N/A	XM_005636885	PRKAG1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
52	N/A	XM_014119809	PRKAG2	Similar to 5-AMP-activated protein kinase, gamma-2 subunit (AMPK gamma-2 chain) (AMPK gamma2) (H91620p)
53	N/A	XM_014111094	PRKAG3	Protein kinase, AMP-activated, gamma 3 non-catalytic subunit
54	N/A	XM_005624271	PRKCA	Protein kinase C, alpha
55	N/A	XM_014114422	PRKCB	Protein kinase C, beta
56	N/A	XM_005626079	PRKCE	Protein kinase C, epsilon
57	Cfa.3695	NM_001003192	PTEN	Phosphatase and tensin homolog
58	N/A	XM_532768	RHEB	Ras homolog enriched in brain
59	Cfa.20231	NM_001003273	RHOA	Ras homolog gene family, member A
60	N/A	XM_014113124	RICTOR	RPTOR independent companion of MTOR, complex 2
61	Cfa.10190	NM_001252170	RP56	Ribosomal protein S6
62	N/A	XM_003433854	RPS6KA1	Ribosomal protein S6 kinase, 90kDa, polypeptide 1
63	N/A	XM_003432550	RPS6KA2	Ribosomal protein S6 kinase, 90kDa, polypeptide 2
64	N/A	XM_005623743	RPS6KA5	Ribosomal protein S6 kinase, 90kDa, polypeptide 5
65	N/A	XM_005624752	RPS6KB1	Ribosomal protein S6 kinase, 70kDa, polypeptide 1
66	N/A	XM_014121218	RPS6KB2	Ribosomal protein S6 kinase, 70kDa, polypeptide 2
67	N/A	XM_005624016	RPTOR	Regulatory associated protein of MTOR, complex 1
68	N/A	XM_531945	RRAGA	Ras-related GTP binding A
69	N/A	XM_005641400	RRAGB	Ras-related GTP binding B
70	N/A	XM_003431952	RRAGC	Ras-related GTP binding C
71	N/A	XM_532231	RRAGD	Ras-related GTP binding D
72	Cfa.18962	XM_003432524	SGK1	Serum/glucocorticoid regulated kinase 1
73	N/A	XM_542206	STK11	Serine/threonine kinase 11
74	N/A	XM_005640539	STRADB	STE20-related kinase adaptor beta
75	N/A	XM_547196	TELO2	TEL2, telomere maintenance 2, homolog (<i>S. cerevisiae</i>)
76	Cfa.3658	NM_001003210	TP53	Tumor protein p53
77	N/A	XM_537808	TSC1	Tuberous sclerosis 1
78	N/A	XM_005621715	TSC2	Tuberous sclerosis 2

Position	UniGene	GenBank	Symbol	Description
79	N/A	XM_005636080	ULK1	Unc-51-like kinase 1 (C. elegans)
80	N/A	XM_005620112	ULK2	Unc-51-like kinase 2 (C. elegans)
81	Cfa.3581	NM_001110502	VEGFA	Vascular endothelial growth factor A
82	N/A	XM_003432332	VEGFB	Similar to vascular endothelial growth factor B
83	N/A	XM_540047	VEGFC	Vascular endothelial growth factor C
84	N/A	XM_532871	YWHAQ	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide
85	Cfa.17735	NM_001195845	ACTB	Actin, beta
86	N/A	XM_535458	B2M	Beta-2-microglobulin
87	Cfa.36213	NM_001003142	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
88	Cfa.4551	NM_001003357	HPRT1	Hypoxanthine phosphoribosyltransferase 1
89	N/A	XM_014109387	RPLP1	Ribosomal protein, large, P1
90	N/A	SA_00130	FGDC	Dog Genomic DNA Contamination
91	N/A	SA_00104	RTC	Reverse Transcription Control
92	N/A	SA_00104	RTC	Reverse Transcription Control
93	N/A	SA_00104	RTC	Reverse Transcription Control
94	N/A	SA_00103	PPC	Positive PCR Control
95	N/A	SA_00103	PPC	Positive PCR Control
96	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.

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.

Trademarks: QIAGEN[®], Rotor-Gene[®], Rotor-Disc[™] (QIAGEN Group); ROX[™] (Applied Biosystems Corporation or its subsidiaries); SYBR[®] (Molecular Probes, Inc.).

1067688 03/2011 © 2011 QIAGEN, all rights reserved.

www.qiagen.com

Canada ■ 800-572-9613

Ireland ■ 1800 555 049

Norway ■ 800-18859

China ■ 8621-3865-3865

Italy ■ 800-787980

Singapore ■ 1800-742-4368

Denmark ■ 80-885945

Japan ■ 03-6890-7300

Spain ■ 91-630-7050

Australia ■ 1-800-243-800

Finland ■ 0800-914416

Korea (South) ■ 080-000-7145

Sweden ■ 020-790282

Austria ■ 0800/281010

France ■ 01-60-920-930

Luxembourg ■ 8002 2076

Switzerland ■ 055-254-22-11

Belgium ■ 0800-79612

Germany ■ 02103-29-12000

Mexico ■ 01-800-7742-436

UK ■ 01293-422-911

Brazil ■ 0800-557779

Hong Kong ■ 800 933 965

The Netherlands ■ 0800 0229592

USA ■ 800-426-8157



Sample & Assay Technologies