

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

Rat VEGF Signaling

Cat. no. 330231 PARN-091ZA

For pathway expression analysis

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



Sample & Assay Technologies

Description

The Rat VEGF Signaling RT² Profiler PCR Array profiles the expression of 84 key genes involved in signal transduction and cell signaling downstream of vascular endothelial growth factors and their receptors critical for regulating new blood vessel formation, including angiogenesis, arteriogenesis, or vasculogenesis. Angiogenesis and VEGF Signaling go hand-in-hand with sprouting and splitting (intussusception) angiogenesis, vascularization, neovascularization, revascularization, and vascular remodeling in response to developmental and hypoxia or ischemic signaling pathways. The array analyzes the expression of genes directly mediating VEGF signaling: growth factors and their receptors, small G-protein family members and their interacting proteins, phospholipases, intracellular kinases and phosphatases in cross-talking signal transduction pathways, and transcription factors. Normal development requires carefully regulated angiogenesis and VEGF signaling, while pathological angiogenesis and uncontrolled VEGF signaling plays key roles in disease states like cardiovascular disorders, cancer (or tumor growth more specifically), macular degeneration, and wound healing. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in VEGF 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	Akt2	Akt3	Arnt	Bad	Casp9	Cav1	Cdc42	Figf	Flt1	Flt4	Grb2
B	Hif1a	Hras	Hsp90aa1	Hspb1	Kdr	Kras	Map2k1	Map2k2	Mapk1	Mapk11	Mapk12	Mapk13
C	Mapk14	Mapk3	Mapkapk2	Mapkapk3	Nfat5	Nfatc2	Nfatc3	Nfatc4	Nos3	Nras	Nrp1	Nrp2
D	Pdgfc	Pgf	Pik3ca	Pik3cb	Pik3cd	Pik3cg	Pik3r1	Pik3r2	Pik3r3	Pik3r5	Pla2g10	Pla2g12a
E	Pla2g12b	Pla2g1b	Pla2g2a	Pla2g2d	Pla2g2e	Pla2g2f	Pla2g3	Pla2g4a	Pla2g4b	Pla2g5	Pla2g6	Plcg1
F	Plcg2	Ppp3ca	Ppp3cb	Ppp3cc	Ppp3r1	Ppp3r2	Prkca	Prkcb	Prkcg	Plgs2	Plk2	Pxn
G	Rac1	Rac2	Raf1	RGD1560225	Sh2d2a	Shc2	Sphk1	Sphk2	Src	Vegfa	Vegfb	Vegfc
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

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.87066	NM_017093	Akt2	V-akt murine thymoma viral oncogene homolog 2
A03	Rn.10506	NM_031575	Akt3	V-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)
A04	Rn.10520	NM_012780	Arnt	Aryl hydrocarbon receptor nuclear translocator
A05	Rn.36696	NM_022698	Bad	BCL2-associated agonist of cell death
A06	Rn.32199	NM_031632	Casp9	Caspase 9, apoptosis-related cysteine peptidase
A07	Rn.22518	NM_031556	Cav1	Caveolin 1, caveolae protein
A08	Rn.60067	NM_171994	Cdc42	Cell division cycle 42 (GTP binding protein)
A09	Rn.10796	NM_031761	Figf	C-fos induced growth factor
A10	Rn.10239	NM_019306	Flt1	Fms-related tyrosine kinase 1
A11	Rn.81043	NM_053652	Flt4	Fms-related tyrosine kinase 4
A12	Rn.3360	NM_030846	Grb2	Growth factor receptor bound protein 2
B01	Rn.10852	NM_024359	Hif1a	Hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)
B02	Rn.102180	NM_001098241	Hras	Harvey rat sarcoma virus oncogene
B03	Rn.119867	NM_175761	Hsp90aa1	Heat shock protein 90, alpha (cytosolic), class A member 1
B04	Rn.3841	NM_031970	Hspb1	Heat shock protein 1
B05	Rn.88869	NM_013062	Kdr	Kinase insert domain receptor
B06	Rn.24554	NM_031515	Kras	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
B07	Rn.5850	NM_031643	Map2k1	Mitogen activated protein kinase kinase 1
B08	Rn.82693	NM_133283	Map2k2	Mitogen activated protein kinase kinase 2
B09	Rn.34914	NM_053842	Mapk1	Mitogen activated protein kinase 1
B10	Rn.45869	NM_001109532	Mapk11	Mitogen-activated protein kinase 11
B11	Rn.162968	NM_021746	Mapk12	Mitogen-activated protein kinase 12
B12	Rn.207195	NM_019231	Mapk13	Mitogen activated protein kinase 13
C01	Rn.88085	NM_031020	Mapk14	Mitogen activated protein kinase 14
C02	Rn.2592	NM_017347	Mapk3	Mitogen activated protein kinase 3
C03	Rn.6276	NM_178102	Mapkapk2	Mitogen-activated protein kinase-activated protein kinase 2
C04	Rn.8789	NM_001012127	Mapkapk3	Mitogen-activated protein kinase-activated protein kinase 3
C05	Rn.22934	NM_001107425	Nfat5	Nuclear factor of activated T-cells 5
C06	Rn.214090	NM_001107805	Nfatc2	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 2
C07	Rn.217507	NM_001108447	Nfatc3	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 3
C08	Rn.23727	NM_001107264	Nfatc4	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 4
C09	Rn.44265	NM_021838	Nos3	Nitric oxide synthase 3, endothelial cell
C10	Rn.217722	NM_080766	Nras	Neuroblastoma ras oncogene
C11	Rn.10815	NM_145098	Nrp1	Neuropilin 1
C12	Rn.10816	NM_030869	Nrp2	Neuropilin 2
D01	Rn.211987	NM_031317	Pdgfc	Platelet derived growth factor C
D02	Rn.6960	NM_053595	Pgf	Placental growth factor
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)

Position	UniGene	GenBank	Symbol	Description
D09	Rn.44448	NM_022213	Pik3r3	Phosphoinositide-3-kinase, regulatory subunit 3 (gamma)
D10	Rn.214730	XM_001078987	Pik3r5	Phosphoinositide-3-kinase, regulatory subunit 5
D11	Rn.6828	NM_017176	Pla2g10	Phospholipase A2, group X
D12	Rn.137418	NM_001108565	Pla2g12a	Phospholipase A2, group XIIA
E01	Rn.48359	XM_346131	Pla2g12b	Phospholipase A2, group XIIB
E02	Rn.4283	NM_031585	Pla2g1b	Phospholipase A2, group IB, pancreas
E03	Rn.11346	NM_031598	Pla2g2a	Phospholipase A2, group IIA (platelets, synovial fluid)
E04	Rn.109549	NM_001013428	Pla2g2d	Phospholipase A2, group IID
E05	Rn.86225	NM_001106696	Pla2g2e	Phospholipase A2, group IIE
E06	Rn.144878	NM_001109587	Pla2g2f	Phospholipase A2, group IIF
E07	Rn.148320	NM_001106015	Pla2g3	Phospholipase A2, group III
E08	Rn.10162	NM_133551	Pla2g4a	Phospholipase A2, group IVA (cytosolic, calcium-dependent)
E09	Rn.21662	NM_001107764	Pla2g4b	Phospholipase A2, group IVB (cytosolic)
E10	Rn.20244	NM_017174	Pla2g5	Phospholipase A2, group V
E11	Rn.44692	NM_001005560	Pla2g6	Phospholipase A2, group VI (cytosolic, calcium-independent)
E12	Rn.11243	NM_013187	Plcg1	Phospholipase C, gamma 1
F01	Rn.9751	NM_017168	Plcg2	Phospholipase C, gamma 2
F02	Rn.6866	NM_017041	Ppp3ca	Protein phosphatase 3, catalytic subunit, alpha isoform
F03	Rn.11063	NM_017042	Ppp3cb	Protein phosphatase 3, catalytic subunit, beta isoform
F04	Rn.22079	NM_134367	Ppp3cc	Protein phosphatase 3, catalytic subunit, gamma isoform
F05	Rn.42903	NM_017309	Ppp3r1	Protein phosphatase 3, regulatory subunit B, alpha isoform
F06	Rn.42928	NM_021701	Ppp3r2	Protein phosphatase 3, regulatory subunit B, beta isoform
F07	Rn.207908	NM_001105713	Prkca	Protein kinase C, alpha
F08	Rn.91118	NM_012713	Prkcb	Protein kinase C, beta
F09	Rn.9747	NM_012628	Prkcg	Protein kinase C, gamma
F10	Rn.44369	NM_017232	Plgs2	Prostaglandin-endoperoxide synthase 2
F11	Rn.2809	NM_013081	Plk2	PTK2 protein tyrosine kinase 2
F12	Rn.75	NM_001012147	Pxn	Paxillin
G01	Rn.29157	NM_134366	Rac1	Ras-related C3 botulinum toxin substrate 1
G02	Rn.2863	NM_001008384	Rac2	Ras-related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2)
G03	Rn.33262	NM_012639	Raf1	V-raf-leukemia viral oncogene 1
G04	N/A	XM_001058445	RGD156022 5	Similar to nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1
G05	Rn.9034	NM_207605	Sh2d2a	SH2 domain protein 2A
G06	Rn.120041	NM_001108065	Shc2	SHC (Src homology 2 domain containing) transforming protein 2
G07	Rn.18522	NM_133386	Sphk1	Sphingosine kinase 1
G08	Rn.41053	NM_001012066	Sphk2	Sphingosine kinase 2
G09	Rn.112600	NM_031977	Src	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G10	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G11	Rn.198550	NM_053549	Vegfb	Vascular endothelial growth factor B
G12	Rn.6913	NM_053653	Vegfc	Vascular endothelial growth factor C
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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² 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 ² 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
RT ² 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.

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