

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

Human VEGF Signaling

Cat. no. 330231 PAHS-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™



Description

The Human 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	NFATC1	NFATC2	NFATC3	NFATC4	NOS3	NRAS	NRP1
D	NRP2	PDGFC	PGF	PIK3CA	PIK3CB	PIK3CD	PIK3CG	PIK3R1	PIK3R2	PIK3R3	PIK3R5	PLA2G10
E	PLA2G12A	PLA2G12B	PLA2G1B	PLA2G2A	PLA2G2D	PLA2G2E	PLA2G2F	PLA2G3	PLA2G4A	PLA2G4B	PLA2G5	PLA2G6
F	PLCG1	PLCG2	PPP3CA	PPP3CB	PPP3CC	PPP3R1	PPP3R2	PRKCA	PRKCB	PRKCG	PTGS2	PTK2
G	PXN	RAC1	RAC2	RAF1	SH2D2A	SHC2	SPHK1	SPHK2	SRC	VEGFA	VEGFB	VEGFC
H	ACTB	B2M	GAPDH	HRPT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
A02	Hs.631535	NM_001626	AKT2	V-akt murine thymoma viral oncogene homolog 2
A03	Hs.498292	NM_005465	AKT3	V-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma)
A04	Hs.632446	NM_001668	ARNT	Aryl hydrocarbon receptor nuclear translocator
A05	Hs.370254	NM_004322	BAD	BCL2-associated agonist of cell death
A06	Hs.329502	NM_001229	CASP9	Caspase 9, apoptosis-related cysteine peptidase
A07	Hs.74034	NM_001753	CAV1	Caveolin 1, caveolae protein, 22kDa
A08	Hs.690198	NM_001791	CDC42	Cell division cycle 42 (GTP binding protein, 25kDa)
A09	Hs.11392	NM_004469	FIGF	C-fos induced growth factor (vascular endothelial growth factor D)
A10	Hs.654360	NM_002019	FLT1	Fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor)
A11	Hs.646917	NM_002020	FLT4	Fms-related tyrosine kinase 4
A12	Hs.444356	NM_002086	GRB2	Growth factor receptor-bound protein 2
B01	Hs.597216	NM_001530	HIF1A	Hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)
B02	Hs.37003	NM_005343	HRAS	V-Ha-ras Harvey rat sarcoma viral oncogene homolog
B03	Hs.525600	NM_001017963	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
B04	Hs.520973	NM_001540	HSPB1	Heat shock 27kDa protein 1
B05	Hs.479756	NM_002253	KDR	Kinase insert domain receptor (a type III receptor tyrosine kinase)
B06	Hs.505033	NM_004985	KRAS	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
B07	Hs.145442	NM_002755	MAP2K1	Mitogen-activated protein kinase kinase 1
B08	Hs.465627	NM_030662	MAP2K2	Mitogen-activated protein kinase kinase 2
B09	Hs.431850	NM_002745	MAPK1	Mitogen-activated protein kinase 1
B10	Hs.57732	NM_002751	MAPK11	Mitogen-activated protein kinase 11
B11	Hs.432642	NM_002969	MAPK12	Mitogen-activated protein kinase 12
B12	Hs.178695	NM_002754	MAPK13	Mitogen-activated protein kinase 13
C01	Hs.485233	NM_001315	MAPK14	Mitogen-activated protein kinase 14
C02	Hs.861	NM_002746	MAPK3	Mitogen-activated protein kinase 3
C03	Hs.643566	NM_004759	MAPKAPK2	Mitogen-activated protein kinase-activated protein kinase 2
C04	Hs.234521	NM_004635	MAPKAPK3	Mitogen-activated protein kinase-activated protein kinase 3
C05	Hs.371987	NM_006599	NFAT5	Nuclear factor of activated T-cells 5, tonicity-responsive
C06	Hs.534074	NM_172390	NFATC1	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1
C07	Hs.713650	NM_012340	NFATC2	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 2
C08	Hs.632209	NM_004555	NFATC3	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 3
C09	Hs.77810	NM_004554	NFATC4	Nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 4
C10	Hs.707978	NM_000603	NOS3	Nitric oxide synthase 3 (endothelial cell)
C11	Hs.486502	NM_002524	NRAS	Neuroblastoma RAS viral (v-ras) oncogene homolog
C12	Hs.131704	NM_003873	NRP1	Neuropilin 1
D01	Hs.471200	NM_003872	NRP2	Neuropilin 2
D02	Hs.570855	NM_016205	PDGFC	Platelet derived growth factor C
D03	Hs.252820	NM_002632	PGF	Placental growth factor
D04	Hs.553498	NM_006218	PIK3CA	Phosphoinositide-3-kinase, catalytic, alpha polypeptide
D05	Hs.239818	NM_006219	PIK3CB	Phosphoinositide-3-kinase, catalytic, beta polypeptide
D06	Hs.518451	NM_005026	PIK3CD	Phosphoinositide-3-kinase, catalytic, delta polypeptide
D07	Hs.32942	NM_002649	PIK3CG	Phosphoinositide-3-kinase, catalytic, gamma polypeptide

Position	UniGene	GenBank	Symbol	Description
D08	Hs.132225	NM_181504	PIK3R1	Phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
D09	Hs.371344	NM_005027	PIK3R2	Phosphoinositide-3-kinase, regulatory subunit 2 (beta)
D10	Hs.655387	NM_003629	PIK3R3	Phosphoinositide-3-kinase, regulatory subunit 3 (gamma)
D11	Hs.278901	NM_014308	PIK3R5	Phosphoinositide-3-kinase, regulatory subunit 5
D12	Hs.567366	NM_003561	PLA2G10	Phospholipase A2, group X
E01	Hs.389452	NM_030821	PLA2G12A	Phospholipase A2, group XIIA
E02	Hs.333175	NM_032562	PLA2G12B	Phospholipase A2, group XIIB
E03	Hs.992	NM_000928	PLA2G1B	Phospholipase A2, group IB (pancreas)
E04	Hs.466804	NM_000300	PLA2G2A	Phospholipase A2, group IIA (platelets, synovial fluid)
E05	Hs.189507	NM_012400	PLA2G2D	Phospholipase A2, group IID
E06	Hs.272372	NM_014589	PLA2G2E	Phospholipase A2, group IIE
E07	Hs.302034	NM_022819	PLA2G2F	Phospholipase A2, group IIF
E08	Hs.149623	NM_015715	PLA2G3	Phospholipase A2, group III
E09	Hs.497200	NM_024420	PLA2G4A	Phospholipase A2, group IVA (cytosolic, calcium-dependent)
E10	Hs.198161	NM_001114633	PLA2G4B	Phospholipase A2, group IVB (cytosolic)
E11	Hs.319438	NM_000929	PLA2G5	Phospholipase A2, group V
E12	Hs.170479	NM_003560	PLA2G6	Phospholipase A2, group VI (cytosolic, calcium-independent)
F01	Hs.268177	NM_002660	PLCG1	Phospholipase C, gamma 1
F02	Hs.413111	NM_002661	PLCG2	Phospholipase C, gamma 2 (phosphatidylinositol-specific)
F03	Hs.435512	NM_000944	PPP3CA	Protein phosphatase 3, catalytic subunit, alpha isozyme
F04	Hs.500067	NM_021132	PPP3CB	Protein phosphatase 3, catalytic subunit, beta isozyme
F05	Hs.728861	NM_005605	PPP3CC	Protein phosphatase 3, catalytic subunit, gamma isozyme
F06	Hs.280604	NM_000945	PPP3R1	Protein phosphatase 3, regulatory subunit B, alpha
F07	Hs.151167	NM_147180	PPP3R2	Protein phosphatase 3, regulatory subunit B, beta
F08	Hs.531704	NM_002737	PRKCA	Protein kinase C, alpha
F09	Hs.460355	NM_002738	PRKCB	Protein kinase C, beta
F10	Hs.631564	NM_002739	PRKCG	Protein kinase C, gamma
F11	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
F12	Hs.395482	NM_005607	PTK2	PTK2 protein tyrosine kinase 2
G01	Hs.446336	NM_002859	PXN	Paxillin
G02	Hs.413812	NM_006908	RAC1	Ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1)
G03	Hs.517601	NM_002872	RAC2	Ras-related C3 botulinum toxin substrate 2 (rho family, small GTP binding protein Rac2)
G04	Hs.159130	NM_002880	RAF1	V-raf-1 murine leukemia viral oncogene homolog 1
G05	Hs.103527	NM_003975	SH2D2A	SH2 domain containing 2A
G06	Hs.30965	NM_012435	SHC2	SHC (Src homology 2 domain containing) transforming protein 2
G07	Hs.68061	NM_021972	SPHK1	Sphingosine kinase 1
G08	Hs.528006	NM_020126	SPHK2	Sphingosine kinase 2
G09	Hs.195659	NM_005417	SRC	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G10	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
G11	Hs.78781	NM_003377	VEGFB	Vascular endothelial growth factor B
G12	Hs.435215	NM_005429	VEGFC	Vascular endothelial growth factor C
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human 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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