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

Human TGFb Signaling Targets

Cat. no. 330231 PAHS-235ZA

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 Human TGFß Signaling Targets RT² Profiler PCR Array profiles the expression of 84 key genes responsive to TGFß signal transduction. The TGFß superfamily comprises 4 signaling pathways: TGFß, Bone Morphogenic Protein (BMP), Activin, and Nodal. These pathways regulate multiple cellular processes, such as development and differentiation, cellular proliferation and migration, apoptosis, and cell cycle regulation. Pathway stimulation by TGFß ligands (TGFßs, BMPs, Growth Differentiation Factors, and others) activate the SMAD transcription factors, which translocate into the nucleus to interact with additional transcription factors and activate specific target genes. Dysregulation of the TGFß signal transduction pathway is associated with diseases such as fibrosis or cancer. Hundreds of TGFß target genes have been identified using experimental techniques such as expression studies and chromatin immunoprecipitation (ChIP) as well as bioinformatic analysis of predicted transcription factor binding sites. This array includes TGFß signaling transcription factors and highly relevant target genes identified by multiple studies. Results obtained with this array can be used to analyze activation or inhibition of TGFß signaling. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in TGFß-related cellular processes 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	ACTA2	ACVR1	ACVRL1	AGT	AIPL1	AR	ATF3	ATF4	BACH1	BCL2L1	BDNF	BHLHE40
B	BRD2	CDC6	CDKN1B	CEBPB	CREB1	CREBBP	CRYAB	CTNNB1	DNAJA1	E2F4	EMP1	ENG
C	EP300	EPHB2	FN1	FOS	FURIN	GADD45B	GLI2	GTF2I	HERPUD1	HES1	HEY1	HMOX1
D	ID1	ID2	ID3	IFRD1	IL10	KLF10	MAP3K7	MAPK14	MAPK8	MBD1	MMP2	MSX2
E	MYC	MYOD1	NFIB	NFKBIA	NOTCH1	PDGFA	PLG	PPARA	PTGS2	PTHLH	PTK2	PTK2B
F	RAD21	RARA	RBL1	RHOA	RHOB	RUNX1	RYBP	S100A8	SERPINE1	SHH	SMAD1	SMAD3
G	SMAD5	SMAD6	SNAI1	SOX4	SP1	SREBF2	TGFB2	TGFBR2	THBS1	TNFSF10	TXNIP	VEGFA
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.500483	NM_001613	ACTA2	Actin, alpha 2, smooth muscle, aorta
A02	Hs.470316	NM_001105	ACVR1	Activin A receptor, type I
A03	Hs.591026	NM_000020	ACVRL1	Activin A receptor type II-like 1
A04	Hs.19383	NM_000029	AGT	Angiotensinogen (serpin peptidase inhibitor, clade A, member 8)
A05	Hs.279887	NM_014336	AIPL1	Aryl hydrocarbon receptor interacting protein-like 1
A06	Hs.496240	NM_000044	AR	Androgen receptor
A07	Hs.460	NM_001674	ATF3	Activating transcription factor 3
A08	Hs.496487	NM_001675	ATF4	Activating transcription factor 4 (tax-responsive enhancer element B67)
A09	Hs.154276	NM_001186	BACH1	BTB and CNC homology 1, basic leucine zipper transcription factor 1
A10	Hs.516966	NM_138578	BCL2L1	BCL2-like 1
A11	Hs.502182	NM_001709	BDNF	Brain-derived neurotrophic factor
A12	Hs.728782	NM_003670	BHLHE40	Basic helix-loop-helix family, member e40
B01	Hs.75243	NM_005104	BRD2	Bromodomain containing 2
B02	Hs.405958	NM_001254	CDC6	Cell division cycle 6 homolog (S. cerevisiae)
B03	Hs.238990	NM_004064	CDKN1B	Cyclin-dependent kinase inhibitor 1B (p27, Kip1)
B04	Hs.517106	NM_005194	CEBPB	CCAAT/enhancer binding protein (C/EBP), beta
B05	Hs.516646	NM_004379	CREB1	CAMP responsive element binding protein 1
B06	Hs.459759	NM_004380	CREBBP	CREB binding protein
B07	Hs.408767	NM_001885	CRYAB	Crystallin, alpha B
B08	Hs.476018	NM_001904	CTNNB1	Catenin (cadherin-associated protein), beta 1, 88kDa
B09	Hs.445203	NM_001539	DNAJA1	DnaJ (Hsp40) homolog, subfamily A, member 1
B10	Hs.108371	NM_001950	E2F4	E2F transcription factor 4, p107/p130-binding
B11	Hs.707901	NM_001423	EMP1	Epithelial membrane protein 1
B12	Hs.76753	NM_000118	ENG	Endoglin
C01	Hs.517517	NM_001429	EP300	E1A binding protein p300
C02	Hs.523329	NM_004442	EPHB2	EPH receptor B2
C03	Hs.203717	NM_002026	FN1	Fibronectin 1
C04	Hs.728789	NM_005252	FOS	FBJ murine osteosarcoma viral oncogene homolog
C05	Hs.513153	NM_002569	FURIN	Furin (paired basic amino acid cleaving enzyme)
C06	Hs.110571	NM_015675	GADD45B	Growth arrest and DNA-damage-inducible, beta
C07	Hs.111867	NM_005270	GLI2	GLI family zinc finger 2
C08	Hs.520459	NM_001518	GTF2I	General transcription factor IIi
C09	Hs.146393	NM_014685	HERPUD1	Homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
C10	Hs.250666	NM_005524	HES1	Hairy and enhancer of split 1, (Drosophila)
C11	Hs.234434	NM_012258	HEY1	Hairy/enhancer-of-split related with YRPW motif 1
C12	Hs.517581	NM_002133	HMOX1	Heme oxygenase (decycling) 1
D01	Hs.504609	NM_002165	ID1	Inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
D02	Hs.180919	NM_002166	ID2	Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein
D03	Hs.76884	NM_002167	ID3	Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein
D04	Hs.7879	NM_001550	IFRD1	Interferon-related developmental regulator 1
D05	Hs.193717	NM_000572	IL10	Interleukin 10
D06	Hs.435001	NM_005655	KLF10	Kruppel-like factor 10
D07	Hs.644143	NM_003188	MAP3K7	Mitogen-activated protein kinase kinase kinase 7
D08	Hs.485233	NM_001315	MAPK14	Mitogen-activated protein kinase 14

Position	UniGene	GenBank	Symbol	Description
D09	Hs.138211	NM_002750	MAPK8	Mitogen-activated protein kinase 8
D10	Hs.405610	NM_015844	MBD1	Methyl-CpG binding domain protein 1
D11	Hs.513617	NM_004530	MMP2	Matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
D12	Hs.89404	NM_002449	MSX2	Msh homeobox 2
E01	Hs.202453	NM_002467	MYC	V-myc myelocytomatosis viral oncogene homolog (avian)
E02	Hs.181768	NM_002478	MYOD1	Myogenic differentiation 1
E03	Hs.644095	NM_005596	NFIB	Nuclear factor I/B
E04	Hs.81328	NM_020529	NFKBIA	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
E05	Hs.495473	NM_017617	NOTCH1	Notch 1
E06	Hs.535898	NM_002607	PDGFA	Platelet-derived growth factor alpha polypeptide
E07	Hs.143436	NM_000301	PLG	Plasminogen
E08	Hs.103110	NM_005036	PPARA	Peroxisome proliferator-activated receptor alpha
E09	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
E10	Hs.591159	NM_002820	PTHLH	Parathyroid hormone-like hormone
E11	Hs.395482	NM_005607	PTK2	PTK2 protein tyrosine kinase 2
E12	Hs.491322	NM_004103	PTK2B	PTK2B protein tyrosine kinase 2 beta
F01	Hs.81848	NM_006265	RAD21	RAD21 homolog (S. pombe)
F02	Hs.654583	NM_000964	RARA	Retinoic acid receptor, alpha
F03	Hs.207745	NM_002895	RBL1	Retinoblastoma-like 1 (p107)
F04	Hs.247077	NM_001664	RHOA	Ras homolog gene family, member A
F05	Hs.502876	NM_004040	RHOB	Ras homolog gene family, member B
F06	Hs.149261	NM_001754	RUNX1	Runt-related transcription factor 1
F07	Hs.694786	NM_012234	RYBP	RING1 and YY1 binding protein
F08	Hs.416073	NM_002964	S100A8	S100 calcium binding protein A8
F09	Hs.414795	NM_000602	SERPINE1	Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
F10	Hs.164537	NM_000193	SHH	Sonic hedgehog
F11	Hs.604588	NM_005900	SMAD1	SMAD family member 1
F12	Hs.714621	NM_005902	SMAD3	SMAD family member 3
G01	Hs.167700	NM_005903	SMAD5	SMAD family member 5
G02	Hs.153863	NM_005585	SMAD6	SMAD family member 6
G03	Hs.48029	NM_005985	SNAI1	Snail homolog 1 (Drosophila)
G04	Hs.643910	NM_003107	SOX4	SRY (sex determining region Y)-box 4
G05	Hs.620754	NM_138473	SP1	Sp1 transcription factor
G06	Hs.443258	NM_004599	SREBF2	Sterol regulatory element binding transcription factor 2
G07	Hs.133379	NM_003238	TGFB2	Transforming growth factor, beta 2
G08	Hs.604277	NM_003242	TGFBR2	Transforming growth factor, beta receptor II (70/80kDa)
G09	Hs.164226	NM_003246	THBS1	Thrombospondin 1
G10	Hs.478275	NM_003810	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10
G11	Hs.533977	NM_006472	TXNIP	Thioredoxin interacting protein
G12	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
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.
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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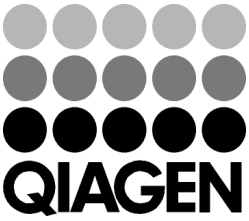

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