

ExProfile™ Human TGF-β Signaling Related Gene qPCR Array

For focused group profiling of human TGF-β signaling related gene expression

Cat. No. QG054-A (1 x 96-well plate, Format A)

Cat. No. QG054-B (1 x 96-well plate, Format B)

Cat. No. QG054-C (1 x 96-well plate, Format C)

Cat. No. QG054-D (1 x 96-well plate, Format D)

Cat. No. QG054-E (1 x 96-well plate, Format E)

Plates available individually or as a set of 6. Each set contains 84 unique gene primer pairs deposited in one 96-well plate.

Introduction

The ExProfile human TGF-β signaling related gene qPCR array profiles the expression of 84 human genes related to TGF-β signal transduction. These genes are carefully chosen for their close pathway correlation based on a thorough literature search of peer-reviewed publications, and include genes that encode TGF-β ligands, receptors, transcriptional modulators (SMADs), inhibitors, targets and many regulatory proteins. This array allows researchers to study pathway-related genes to gain understanding of their roles in the TGF-β signaling pathway.

- QG054 plate 01: 84 unique gene PCR primer pairs

Shipping and storage conditions

Shipped at room temperature

Stable for at least 6 months when stored at -20°C

Array format

GeneCopeia provides five qPCR array formats (A, B, C, D, and E) suitable for use with the following real-time cyclers.

Important note: Upon receipt, please check to make sure that the correct array format was ordered to ensure compatibility with your qPCR instrument.

Plate format	Instrument provider	qPCR instrument model
A (96-well)	Applied Biosystems	5700, 7000, 7300, 7500, 7700, 7900HT (Standard 96-well block), ViiA™7 (Standard 96-well block)
B (96-well)	Applied Biosystems	7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA™7 (Fast block)
C (96-well)	Bio-Rad Laboratories	iCycler iQ®, MyiQ™, iQ™5
D (96-well)	Bio-Rad Laboratories	CFX96™, DNA Engine Opticon™, DNA Engine Opticon 2™, Chromo4™
E (96-well)	Roche Applied Science	LightCycler® 480 (96-well block)

Quality control

1. Each pair of primers in the ExProfile gene qPCR array has been experimentally validated to yield a single dissociation curve peak and to generate a single amplicon of the correct size for the targeted gene.
2. The positive PCR controls (PCR) have been verified to amplify a single amplicon of the correct size with Ct values around **20±2**.
3. The Spike-in reverse transcription controls (RT) have been verified to amplify a single amplicon of the correct size with Ct values around **20±3**.
4. $R^2 > 0.99$ was observed for high inter/ intra-array reproducibility.

Materials required but not provided

All-in-One™ First-Strand cDNA Synthesis Kit

All-in-One™ qPCR Mix

Total RNA extraction kit (RNAzol® RT RNA extraction reagent is recommended)

DNase/RNase free tips, PCR reaction tubes, 1.5 ml microcentrifuge tubes

5 ml and 10 ml graduated pipettes, beakers, flasks, and cylinders

10 µl to 1,000 µl adjustable single channel micropipettes with disposable tips

5 µl to 20 µl adjustable multichannel micropipette, disposable tips, and reservoir

qPCR instrument, compatible with gene qPCR arrays ordered

Array layout

	1	2	3	4	5	6	7	8	9	10	11	12
A	ACVR1	ACVR1B	ACVR1C	ACVR2A	ACVR2B	ACVRL1	BMP2	BMP3	BMP4	BMP5	BMP7	BMP8A
B	BMPR1A	BMPR1B	BMPR2	COMP	CREBBP	CTGF	E2F4	ENG	GDF11	GDF15	GDF2	GDF5
C	GDF8	GDF9	ID1	ID2	ID3	IFNG	INHBA	INHBA	INHBB	INHBC	KLF11	LEFTY1
D	LEFTY2	LTBP1	LTBP4	MAP3K7	MAP3K7IP1	MAPK1	MAPK3	MYC	NBL1	NODAL	NOG	NOV
E	PDGFB	RBL1	RHOA	ROCK1	RUNX2	SERPINE1	SMAD1	SMAD2	SMAD3	SMAD4	SMAD5	SMAD6
F	SMAD7	SMURF1	SMURF2	SP1	TFDP1	TGFB1	TGFB2	TGFB3	TGFBR1	TGFBR3	TGIF1	TGIF2
G	THBS1	THBS2	TNF	VWF	AMH	BMP15	CEBPB	FST	GDF1	GDF10	GDF3	PITX2
H	HGDC	HGDC	GAPDH	ACTB	B2M	RPL13A	HPRT1	RN18S1	RT	RT	PCR	PCR

Figure1. Illustration of QG054 plate 01

- **Gene primer pairs:** 84 wells (A row to G row) are designated for a real-time PCR assay for genes (see the primer list).
- **HK1-6:** Six pre-deposited housekeeping gene (HK1-6) primer pairs, which can be used as endogenous positive controls as well as for array normalization.
- **GDC:** Genomic DNA controls, which can be used to specifically detect genomic DNA contamination with a high level of sensitivity.
- **RT:** Spike-in reverse transcription controls, which can be used to monitor the efficiency of the RT reactions. These pre-deposited primer pairs specifically amplify the cDNA template reverse transcribed from the spike-in control RNA in the sample.
- **PCR:** Positive PCR controls, which are used to verify the PCR efficiency by amplifying the pre-deposited DNA template with its specific pre-deposited primer pairs.

Gene primer list

Plate	Position	Catalog No. of Primer	Accession No. of Gene	Symbol
QG054-01	A01	HQP022071	NM_001105	ACVR1
QG054-01	A02	HQP022297	NM_004302	ACVR1B
QG054-01	A03	HQP002611	NM_145259	ACVR1C
QG054-01	A04	HQP022491	NM_001616	ACVR2A
QG054-01	A05	HQP022668	NM_001106	ACVR2B
QG054-01	A06	HQP022834	NM_000020	ACVRL1
QG054-01	A07	HQP017333	NM_001200	BMP2
QG054-01	A08	HQP017357	NM_001201	BMP3
QG054-01	A09	HQP017396	NM_001202	BMP4
QG054-01	A10	HQP017433	NM_021073	BMP5
QG054-01	A11	HQP017467	NM_001719	BMP7
QG054-01	A12	HQP009619	NM_181809	BMP8A
QG054-01	B01	HQP017489	NM_004329	BMPR1A
QG054-01	B02	HQP017500	NM_001203	BMPR1B
QG054-01	B03	HQP017535	NM_001204	BMPR2
QG054-01	B04	HQP002670	NM_000095	COMP
QG054-01	B05	HQP002920	NM_001079846	CREBBP
QG054-01	B06	HQP003488	NM_001901	CTGF
QG054-01	B07	HQP004528	NM_001950	E2F4
QG054-01	B08	HQP004856	NM_000118	ENG
QG054-01	B09	HQP000275	NM_005811	GDF11
QG054-01	B10	HQP022853	NM_004864	GDF15
QG054-01	B11	HQP007316	NM_016204	GDF2
QG054-01	B12	HQP020039	NM_000557	GDF5
QG054-01	C01	HQP007323	NM_005259	GDF8
QG054-01	C02	HQP007325	NM_005260	GDF9
QG054-01	C03	HQP009266	NM_002165	ID1
QG054-01	C04	HQP009273	NM_002166	ID2
QG054-01	C05	HQP009282	NM_002167	ID3
QG054-01	C06	HQP009467	NM_000619	IFNG
QG054-01	C07	HQP009742	NM_002191	INHA
QG054-01	C08	HQP009743	NM_002192	INHBA
QG054-01	C09	HQP009744	NM_002193	INHBB
QG054-01	C10	HQP009745	NM_005538	INHBC
QG054-01	C11	HQP020830	NM_003597	KLF11
QG054-01	C12	HQP000772	NM_020997	LEFTY1
QG054-01	D01	HQP018049	NM_003240	LEFTY2
QG054-01	D02	HQP010911	NM_000627	LTBP1
QG054-01	D03	HQP020596	NM_001042544	LTBP4
QG054-01	D04	HQP017891	NM_003188	MAP3K7
QG054-01	D05	HQP000541	NM_006116	MAP3K7IP1

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QG054-01	D06	HQP014848	NM_002745	MAPK1
QG054-01	D07	HQP014854	NM_001040056	MAPK3
QG054-01	D08	HQP011597	NM_002467	MYC
QG054-01	D09	HQP011683	NM_005380	NBL1
QG054-01	D10	HQP011861	NM_018055	NODAL
QG054-01	D11	HQP022387	NM_005450	NOG
QG054-01	D12	HQP011878	NM_002514	NOV
QG054-01	E01	HQP012856	NM_002608	PDGFB
QG054-01	E02	HQP016160	NM_002895	RBL1
QG054-01	E03	HQP010229	NM_001664	RHOA
QG054-01	E04	HQP016371	NM_005406	ROCK1
QG054-01	E05	HQP016478	NM_001015051	RUNX2
QG054-01	E06	HQP012154	NM_000602	SERPINE1
QG054-01	E07	HQP010958	NM_001003688	SMAD1
QG054-01	E08	HQP010959	NM_001003652	SMAD2
QG054-01	E09	HQP010960	NM_005902	SMAD3
QG054-01	E10	HQP010961	NM_005359	SMAD4
QG054-01	E11	HQP010964	NM_001001419	SMAD5
QG054-01	E12	HQP010965	NM_005585	SMAD6
QG054-01	F01	HQP010966	NM_005904	SMAD7
QG054-01	F02	HQP015449	NM_020429	SMURF1
QG054-01	F03	HQP017122	NM_022739	SMURF2
QG054-01	F04	HQP017640	NM_138473	SP1
QG054-01	F05	HQP018032	NM_007111	TFDP1
QG054-01	F06	HQP018044	NM_000660	TGFB1
QG054-01	F07	HQP018047	NM_003238	TGFB2
QG054-01	F08	HQP018048	NM_003239	TGFB3
QG054-01	F09	HQP018051	NM_004612	TGFBR1
QG054-01	F10	HQP018055	NM_003243	TGFBR3
QG054-01	F11	HQP018056	NM_003244	TGIF1
QG054-01	F12	HQP016304	NM_021809	TGIF2
QG054-01	G01	HQP018068	NM_003246	THBS1
QG054-01	G02	HQP018069	NM_003247	THBS2
QG054-01	G03	HQP018141	NM_000594	TNF
QG054-01	G04	HQP018504	NM_000552	VWF
QG054-01	G05	HQP007394	NM_000479	AMH
QG054-01	G06	HQP022320	NM_005448	BMP15
QG054-01	G07	HQP000623	NM_005194	CEBPB
QG054-01	G08	HQP000564	NM_006350	FST
QG054-01	G09	HQP007309	NM_001492	GDF1
QG054-01	G10	HQP007326	NM_004962	GDF10
QG054-01	G11	HQP022926	NM_020634	GDF3
QG054-01	G12	HQP013174	NM_000325	PITX2
QG054-01	H01	HGDC		
QG054-01	H02	HGDC		
QG054-01	H03	HQP006940	NM_002046	GAPDH
QG054-01	H04	HQP016381	NM_001101	ACTB

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QG054-01	H05	HQP015171	NM_004048	B2M
QG054-01	H06	HQP006171	NM_012423	RPL13A
QG054-01	H07	HQP009026	NM_000194	HPRT1
QG054-01	H08	HQP054253	NR_003286	RN18S1
QG054-01	H09	RT		
QG054-01	H10	RT		
QG054-01	H11	PCR		
QG054-01	H12	PCR		

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