ExProfile™ Human Osteogenesis Related Gene qPCR Array

For focused group profiling of human osteogenesis genes expression

Cat. No. QG046-A (1 x 96-well plate, Format A)
Cat. No. QG046-B (1 x 96-well plate, Format B)
Cat. No. QG046-C (1 x 96-well plate, Format C)
Cat. No. QG046-D (1 x 96-well plate, Format D)
Cat. No. QG046-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 osteogenesis related gene qPCR array profiles the expression of 84 human genes related to osteogenic differentiation. These genes are carefully chosen for their close correlation based on a thorough literature search of peer-reviewed publications, mainly including genes involved in development of the skeletal system as well as bone mineral metabolism. This array allows researchers to study the related genes to gain understanding of their roles in the functioning and characterization of osteogenic differentiation.

- QG046 plate 01: 84 unique gene PCR primer pairs

Shipping and storage condition

Shipped at room temperate
Stable for at least 6 months when stored at -20℃

Array format

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

Important note: Upon receiving, please check to make sure that the correct array format was ordered to ensure the 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	RUNX2	FN1	FGFR1	HPRT1	VEGFA	VDR	VCAM1	TWIST1	TUFT1	TNF	TGFBR1	TGFB3
B	TGFB2	TGFB1	TFIP11	SOX9	SMAD4	SMAD3	SMAD2	SMAD1	SERPINH1	SCARB1	RUNX2	PHEX
C	PDGFA	NFKB1	MMP9	MMP8	MMP10	MINPP1	ITGB1	ITGAM	ITGA2	ITGA1	IGF2	IGF1R
D	IGF1	ICAM1	FN1	FLT1	FGFR2	FGF2	FGF1	EGFR	EGF	DSPP	DMP1	CTSK
E	CSF3	CSF2	COMP	COL5A1	COL3A1	COL2A1	COL1A1	COL15A1	COL14A1	COL12A1	COL11A1	CDH11
F	CD36	CALCR	BMP5	BMP4	BMP3	BMP2	BMP1	BGN	BGLAP	ANXA5	AMBN	ALPL
G	MSX1	COL12A1	TGFBR2	VEGFB	EGFR	COL10A1	COL1A2	COL4A3	ENAM	FGF3	FGFR1	GDF10
H	**HGDC**	**HGDC**	**GAPDH**	**ACTB**	**B2M**	**RPL13A**	**HPRT1**	**RN18S1**	**RT**	**RT**	**PCR**	**PCR**

Figure1. Illustration of QG046 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 reversed 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
QG046-01	A01	HQP016478	NM_001015051	RUNX2
QG046-01	A02	HQP006023	NM_054034	FN1
QG046-01	A03	HQP005430	NM_023107	FGFR1
QG046-01	A04	HQP009026	NM_000194	HPRT1
QG046-01	A05	HQP018481	NM_003376	VEGFA
QG046-01	A06	HQP018474	NM_000376	VDR
QG046-01	A07	HQP053975	NM_001078	VCAM1
QG046-01	A08	HQP018328	NM_000474	TWIST1
QG046-01	A09	HQP018320	NM_020127	TUFT1
QG046-01	A10	HQP018141	NM_000594	TNF
QG046-01	A11	HQP018051	NM_004612	TGFBR1
QG046-01	A12	HQP018048	NM_003239	TGFB3
QG046-01	B01	HQP018047	NM_003238	TGFB2
QG046-01	B02	HQP018044	NM_000660	TGFB1
QG046-01	B03	HQP054013	NM_012143	TFIP11
QG046-01	B04	HQP017635	NM_000346	SOX9
QG046-01	B05	HQP010961	NM_005359	SMAD4
QG046-01	B06	HQP010960	NM_005902	SMAD3
QG046-01	B07	HQP054007	NM_005901	SMAD2
QG046-01	B08	HQP054006	NM_005900	SMAD1
QG046-01	B09	HQP021470	NM_001235	SERPINH1
QG046-01	B10	HQP022833	NM_005505	SCARB1
QG046-01	B11	HQP021334	NM_004348	RUNX2
QG046-01	B12	HQP013108	NM_000444	PHEX
QG046-01	C01	HQP012847	NM_002607	PDGFA
QG046-01	C02	HQP011807	NM_003998	NFKB1
QG046-01	C03	HQP011263	NM_004994	MMP9
QG046-01	C04	HQP011262	NM_002424	MMP8
QG046-01	C05	HQP011264	NM_002425	MMP10
QG046-01	C06	HQP022913	NM_004897	MINPP1
QG046-01	C07	HQP009810	NM_002211	ITGB1
QG046-01	C08	HQP009807	NM_000632	ITGAM
QG046-01	C09	HQP009794	NM_002203	ITGA2
QG046-01	C10	HQP009793	NM_181501	ITGA1
QG046-01	C11	HQP009529	NM_000612	IGF2
QG046-01	C12	HQP009523	NM_000875	IGF1R
QG046-01	D01	HQP009518	NM_000618	IGF1
QG046-01	D02	HQP009184	NM_000201	ICAM1
QG046-01	D03	HQP006022	NM_002026	FN1
QG046-01	D04	HQP005879	NM_002019	FLT1

QG046-01	D05	HQP005437	NM_000141	FGFR2
QG046-01	D06	HQP005403	NM_002006	FGF2
QG046-01	D07	HQP005400	NM_000800	FGF1
QG046-01	D08	HQP004605	NM_005228	EGFR
QG046-01	D09	HQP004599	NM_001963	EGF
QG046-01	D10	HQP004478	NM_014208	DSPP
QG046-01	D11	HQP004375	NM_004407	DMP1
QG046-01	D12	HQP003626	NM_000396	CTSK
QG046-01	E01	HQP003173	NM_000759	CSF3
QG046-01	E02	HQP003159	NM_000758	CSF2
QG046-01	E03	HQP002670	NM_000095	COMP
QG046-01	E04	HQP002541	NM_000093	COL5A1
QG046-01	E05	HQP002478	NM_000090	COL3A1
QG046-01	E06	HQP002473	NM_001844	COL2A1
QG046-01	E07	HQP002462	NM_000088	COL1A1
QG046-01	E08	HQP002644	NM_001855	COL15A1
QG046-01	E09	HQP018426	NM_021110	COL14A1
QG046-01	E10	HQP002612	NM_004370	COL12A1
QG046-01	E11	HQP002602	NM_080629	COL11A1
QG046-01	E12	HQP000131	NM_001797	CDH11
QG046-01	F01	HQP022821	NM_000072	CD36
QG046-01	F02	HQP019452	NM_001742	CALCR
QG046-01	F03	HQP017433	NM_021073	BMP5
QG046-01	F04	HQP053910	NM_130851	BMP4
QG046-01	F05	HQP017357	NM_001201	BMP3
QG046-01	F06	HQP017333	NM_001200	BMP2
QG046-01	F07	HQP017282	NM_006129	BMP1
QG046-01	F08	HQP016610	NM_001711	BGN
QG046-01	F09	HQP016599	NM_199173	BGLAP
QG046-01	F10	HQP008829	NM_001154	ANXA5
QG046-01	F11	HQP006840	NM_016519	AMBN
QG046-01	F12	HQP006440	NM_000478	ALPL
QG046-01	G01	HQP011526	NM_002448	MSX1
QG046-01	G02	HQP002613	NM_080645	COL12A1
QG046-01	G03	HQP018054	NM_003242	TGFBR2
QG046-01	G04	HQP018482	NM_003377	VEGFB
QG046-01	G05	HQP004606	NM_201282	EGFR
QG046-01	G06	HQP002596	NM_000493	COL10A1
QG046-01	G07	HQP002466	NM_000089	COL1A2
QG046-01	G08	HQP002508	NM_000091	COL4A3
QG046-01	G09	HQP000152	NM_031889	ENAM
QG046-01	G10	HQP005404	NM_005247	FGF3
QG046-01	G11	HQP005427	NM_015850	FGFR1
QG046-01	G12	HQP007326	NM_004962	GDF10
QG046-01	H01	HGDC		
QG046-01	H02	HGDC		

QG046-01	H03	HQP006940	NM_002046	GAPDH
QG046-01	H04	HQP016381	NM_001101	ACTB
QG046-01	H05	HQP015171	NM_004048	B2M
QG046-01	H06	HQP006171	NM_012423	RPL13A
QG046-01	H07	HQP009026	NM_000194	HPRT1
QG046-01	H08	HQP054253	NR_003286	RN18S1
QG046-01	H09	RT		
QG046-01	H10	RT		
QG046-01	H11	PCR		
QG046-01	H12	PCR		

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Following terms and conditions apply to use of ExProfile™ Human Osteogenesis Related Gene qPCR Array (the Product). If the terms and conditions are not acceptable, the Product in its entirety must be returned to GeneCopoeia within 5 calendar days. A limited End-User license is granted to the purchaser of the Product. The Product shall be used by the purchaser for internal research purposes only. The Product is expressly not designed, intended, or warranted for use in humans or for therapeutic or diagnostic use. The Product must not be resold, repackaged or modified for resale, or used to manufacture commercial products or deliver information obtained in service without prior written consent from GeneCopoeia. This Product should be used in accordance with the NIH guidelines developed for recombinant DNA and genetic research. Use of any part of the Product constitutes acceptance of the above terms.

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