

ExProfile™ Human Hematopoietic Stem Cells and Hematopoiesis Related Gene qPCR Array

For focused group profiling of human hematopoietic stem cells and hematopoiesis genes expression

Cat. No. QG025-A (1 x 96-well plate, Format A)

Cat. No. QG025-B (1 x 96-well plate, Format B)

Cat. No. QG025-C (1 x 96-well plate, Format C)

Cat. No. QG025-D (1 x 96-well plate, Format D)

Cat. No. QG025-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 hematopoietic stem cells and hematopoiesis related gene qPCR array profiles the expression of 84 human genes related to the development of blood-cell lineages from HSCs (hematopoietic stem cells) through progenitor stem cells. These genes are carefully chosen for their close correlation based on a thorough literature search of peer-reviewed publications, mainly including genes that encode blood cell lineage-specific molecular markers, and genes involved in stem cell commitment and differentiation. This array allows researchers to study the related genes to gain understanding of their roles in the functioning and characterization of hematopoietic stem cells and hematopoiesis.

- QG025 plate 01: 84 unique gene PCR primer pairs

Shipping and storage condition

Shipped at room temperature

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

Array format

GeneCopia 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	MAL	PTPRC	IL6ST	HDAC9	CSF1	HPRT1	CD44	WNT3A	VEGFA	VAV1	TRIM10	TLR4
B	TLR3	TEK	TAL1	STIM2	STAT3	STAT1	SPP1	SOCS5	SFXN1	RUNX1	RBPJ	PTPRC
C	PECAM1	PAX5	NOTCH2	NOTCH1	NOS2A	MMP9	MAL	LRMP	LEF1	KITLG	KIT	KDR
D	JAG2	JAG1	INHBA	INHA	IL6ST	IL31RA	IL20	IL2	IL1A	IL12B	IL10	HDAC7A
E	HDAC5	HDAC4	GATA2	GATA1	GALNAC4S-EST	FZD1	ETV6	ETS1	DLL1	CSF2	CSF1	CEBPG
F	CD86	CD80	CD44	CD4	CD3G	CD3D	CD27	CD2	CD1D	CD14	CCR1	BLNK
G	ASH2L	APC	CEBPE	LMO2	ANGPT1	CBFB	CD164	CD34	FLT3LG	FUT10	HDAC9	IL11
H	HGDC	HGDC	GAPDH	ACTB	B2M	RPL13A	HPRT1	RN18S1	RT	RT	PCR	PCR

Figure1. Illustration of QG025 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
QG025-01	A01	HQP010996	NM_022438	MAL
QG025-01	A02	HQP015909	NM_080921	PTPRC
QG025-01	A03	HQP009675	NM_175767	IL6ST
QG025-01	A04	HQP023134	NM_014707	HDAC9
QG025-01	A05	HQP003150	NM_172210	CSF1
QG025-01	A06	HQP009026	NM_000194	HPRT1
QG025-01	A07	HQP022974	NM_001001390	CD44
QG025-01	A08	HQP021771	NM_033131	WNT3A
QG025-01	A09	HQP018481	NM_003376	VEGFA
QG025-01	A10	HQP018461	NM_005428	VAV1
QG025-01	A11	HQP000139	NM_006778	TRIM10
QG025-01	A12	HQP018116	NM_138554	TLR4
QG025-01	B01	HQP018115	NM_003265	TLR3
QG025-01	B02	HQP018012	NM_000459	TEK
QG025-01	B03	HQP017895	NM_003189	TAL1
QG025-01	B04	HQP015757	NM_020860	STIM2
QG025-01	B05	HQP017767	NM_003150	STAT3
QG025-01	B06	HQP017764	NM_007315	STAT1
QG025-01	B07	HQP017673	NM_000582	SPP1
QG025-01	B08	HQP054032	NM_144949	SOCS5
QG025-01	B09	HQP022694	NM_022754	SFXN1
QG025-01	B10	HQP021347	NM_001754	RUNX1
QG025-01	B11	HQP009574	NM_005349	RBPJ
QG025-01	B12	HQP015908	NM_002838	PTPRC
QG025-01	C01	HQP013015	NM_000442	PECAM1
QG025-01	C02	HQP012212	NM_016734	PAX5
QG025-01	C03	HQP011875	NM_024408	NOTCH2
QG025-01	C04	HQP011873	NM_017617	NOTCH1
QG025-01	C05	HQP011866	NM_000625	NOS2A
QG025-01	C06	HQP011263	NM_004994	MMP9
QG025-01	C07	HQP010995	NM_002371	MAL
QG025-01	C08	HQP010868	NM_006152	LRMP
QG025-01	C09	HQP012480	NM_016269	LEF1
QG025-01	C10	HQP011205	NM_003994	KITLG
QG025-01	C11	HQP010099	NM_000222	KIT
QG025-01	C12	HQP010070	NM_002253	KDR
QG025-01	D01	HQP009847	NM_002226	JAG2
QG025-01	D02	HQP004470	NM_000214	JAG1
QG025-01	D03	HQP009743	NM_002192	INHBA
QG025-01	D04	HQP009742	NM_002191	INHHA

QG025-01	D05	HQP009674	NM_002184	IL6ST
QG025-01	D06	HQP002747	NM_139017	IL31RA
QG025-01	D07	HQP012157	NM_018724	IL20
QG025-01	D08	HQP009649	NM_000586	IL2
QG025-01	D09	HQP009640	NM_000575	IL1A
QG025-01	D10	HQP009693	NM_002187	IL12B
QG025-01	D11	HQP009685	NM_000572	IL10
QG025-01	D12	HQP012862	NM_016596	HDAC7A
QG025-01	E01	HQP000024	NM_005474	HDAC5
QG025-01	E02	HQP023167	NM_006037	HDAC4
QG025-01	E03	HQP007152	NM_032638	GATA2
QG025-01	E04	HQP007146	NM_002049	GATA1
QG025-01	E05	HQP012676	NM_015892	GALNAC4S-6ST
QG025-01	E06	HQP020133	NM_003505	FZD1
QG025-01	E07	HQP005022	NM_001987	ETV6
QG025-01	E08	HQP005014	NM_005238	ETS1
QG025-01	E09	HQP008111	NM_005618	DLL1
QG025-01	E10	HQP003159	NM_000758	CSF2
QG025-01	E11	HQP003149	NM_000757	CSF1
QG025-01	E12	HQP000656	NM_001806	CEBPG
QG025-01	F01	HQP022746	NM_006889	CD86
QG025-01	F02	HQP022722	NM_005191	CD80
QG025-01	F03	HQP022972	NM_000610	CD44
QG025-01	F04	HQP022316	NM_000616	CD4
QG025-01	F05	HQP022256	NM_000073	CD3G
QG025-01	F06	HQP022212	NM_000732	CD3D
QG025-01	F07	HQP022667	NM_001242	CD27
QG025-01	F08	HQP022190	NM_001767	CD2
QG025-01	F09	HQP022129	NM_001766	CD1D
QG025-01	F10	HQP022490	NM_000591	CD14
QG025-01	F11	HQP002198	NM_001295	CCR1
QG025-01	F12	HQP008515	NM_013314	BLNK
QG025-01	G01	HQP022017	NM_004674	ASH2L
QG025-01	G02	HQP009024	NM_000038	APC
QG025-01	G03	HQP000648	NM_001805	CEBPE
QG025-01	G04	HQP010701	NM_005574	LMO2
QG025-01	G05	HQP008097	NM_001146	ANGPT1
QG025-01	G06	HQP021407	NM_001755	CBFB
QG025-01	G07	HQP021521	NM_006016	CD164
QG025-01	G08	HQP022813	NM_001773	CD34
QG025-01	G09	HQP005902	NM_001459	FLT3LG
QG025-01	G10	HQP020928	NM_032664	FUT10
QG025-01	G11	HQP023138	NM_178425	HDAC9
QG025-01	G12	HQP009688	NM_000641	IL11
QG025-01	H01	HGDC		

QG025-01	H02	HGDC		
QG025-01	H03	HQP006940	NM_002046	GAPDH
QG025-01	H04	HQP016381	NM_001101	ACTB
QG025-01	H05	HQP015171	NM_004048	B2M
QG025-01	H06	HQP006171	NM_012423	RPL13A
QG025-01	H07	HQP009026	NM_000194	HPRT1
QG025-01	H08	HQP054253	NR_003286	RN18S1
QG025-01	H09	RT		
QG025-01	H10	RT		
QG025-01	H11	PCR		
QG025-01	H12	PCR		

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