

ExProfile™ Human Protein Phosphatases Related Gene qPCR Array

For focused group profiling of human protein phosphatases genes expression

Cat. No. QG094-A (2 x 96-well plate, Format A)

Cat. No. QG094-B (2 x 96-well plate, Format B)

Cat. No. QG094-C (2 x 96-well plate, Format C)

Cat. No. QG094-D (2 x 96-well plate, Format D)

Cat. No. QG094-E (2 x 96-well plate, Format E)

Plates available individually or as a set of 6. Each set contains 168 unique gene primer pairs deposited in one 96-well plate.

Introduction

The ExProfile human protein phosphatases related gene qPCR array profiles the expression of 168 human genes related to protein phosphatases. These genes are carefully chosen for their close correlation based on a thorough literature search of peer-reviewed publications, mainly including genes that encode protein tyrosine phosphatases, protein phosphatases and catalytic subunits, dual specificity phosphatases and other related molecules. This array allows researchers to study the related genes to gain understanding of their roles in the functioning and characterization of phosphatases.

- QG094 plate 01: 84 unique gene PCR primer pairs
- QG094 plate 02: 84 unique gene PCR primer pairs

Shipping and storage condition

Shipped at room temperate

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

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	MTMR8	PPP4R1L	SSH3	DUSP23	MTMR10	MTMR12	SSH1	VPS29	STYXL1	CTD6PL2	ACP6	SSU72
B	PHPT1	PPP2R3B	PIB5PA	DAPP1	PTPN18	PTPN22	PTPN23	TENC1	PHLPP	PHLPL	INPP5F	PPM1E
C	DUSP12	DUSP10	PTP4A3	PTPRT	PTPN21	DUSP14	PPP4R1	DNAJC6	DLG7	PPM1F	MINPP1	PTPLA
D	CTDP1	MTMR4	MTMR7	MTMR6	MTMR2	MTMR3	FBP2	MTMR1	RNGTT	PPAP2B	PPAP2A	CDC14A
E	PPFIA1	PPFIA4	PPM1D	DUSP11	PTP4A2	EPM2A	PTP4A1	TPTE	TNS1	STYX	SBF1	PTPRZ1
F	PTPRS	PTPRR	PTPRO	PTPRN2	PTPRM	PTPRK	PTPRJ	PTPRH	PTPRF	PTPRE	PTPRD	PTPRC
G	PTPRB	PTPN13	PTPN12	PTPN11	PTPN9	PTPN7	PTPN4	PTPN3	PTPN2	PTPN1	PTEN	MAP2K1
H	HGDC	HGDC	GAPDH	ACTB	B2M	RPL13A	HPRT1	RN18S1	RT	RT	PCR	PCR

Figure1. Illustration of QG094 plate 01

	1	2	3	4	5	6	7	8	9	10	11	12
A	PPP6C	PPP5C	PPP3R1	PPP3CC	PPP3CB	PPP4C	PPP3CA	PPP2R5E	PPP2R5D	PPP2R5C	PPP2R5B	PPP2R5A
B	PPP2R3A	PPP2R2C	PPP2R2A	PPP2R1B	PPP2CA	PPP1R3C	PPP1CC	PPP1CB	PPP1CA	PPM1A	PPEF1	PPEF2
C	PPA1	PFKFB4	PFKFB3	OCRL	PPP1R12B	MYL4	MTM1	LCK	ITPA	INPPL1	INPP5A	INPP4A
D	INPP1	IMPA2	IMPA1	FBP1	EYA3	EYA2	EYA1	DUSP8	DUSP7	DUSP6	DUSP5	DUSP4
E	DUSP3	DUSP1	DLG1	CDKN3	CDC25C	CDC25B	CDC25A	ALPPL2	ALPL	ALPI	AIF1	ACYP2
F	ACYP1	ACPP	ACP5	ACP2	PPFIA2	ACP1	CDC14B	CAMK2G	DUSP2	DUSP9	EYA4	PFKFB1
G	PFKFB2	PPM1B	PPM1G	PPP1R3D	PPP2CB	PPP2R2B	PPP2R4	PSPH	PTPN6	PTPN14	PPAP2C	PTPRG
H	HGDC	HGDC	GAPDH	ACTB	B2M	RPL13A	HPRT1	RN18S1	RT	RT	PCR	PCR

Figure2. Illustration of QG094 plate 02

- **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
QG094-01	A01	HQP014510	NM_017677	MTMR8
QG094-01	A02	HQP014378	NM_018498	PPP4R1L
QG094-01	A03	HQP013910	NM_017857	SSH3
QG094-01	A04	HQP013874	NM_017823	DUSP23
QG094-01	A05	HQP013834	NM_017762	MTMR10
QG094-01	A06	HQP013561	NM_001040446	MTMR12
QG094-01	A07	HQP013463	NM_018984	SSH1
QG094-01	A08	HQP012967	NM_016226	VPS29
QG094-01	A09	HQP012940	NM_016086	STYXL1
QG094-01	A10	HQP012781	NM_016396	CTDSPL2
QG094-01	A11	HQP012516	NM_016361	ACP6
QG094-01	A12	HQP008416	NM_014188	SSU72
QG094-01	B01	HQP008395	NM_014172	PHPT1
QG094-01	B02	HQP007815	NM_013239	PPP2R3B
QG094-01	B03	HQP007528	NM_001002837	PIB5PA
QG094-01	B04	HQP007478	NM_014395	DAPP1
QG094-01	B05	HQP007244	NM_014369	PTPN18
QG094-01	B06	HQP007113	NM_012411	PTPN22
QG094-01	B07	HQP006898	NM_015466	PTPN23
QG094-01	B08	HQP006041	NM_015319	TENC1
QG094-01	B09	HQP005901	NM_194449	PHLPP
QG094-01	B10	HQP005691	NM_015020	PHLPL
QG094-01	B11	HQP005535	NM_014937	INPP5F
QG094-01	B12	HQP005496	NM_014906	PPM1E
QG094-01	C01	HQP001479	NM_007240	DUSP12
QG094-01	C02	HQP001419	NM_007207	DUSP10
QG094-01	C03	HQP001332	NM_007079	PTP4A3
QG094-01	C04	HQP001285	NM_007050	PTPRT
QG094-01	C05	HQP001261	NM_007039	PTPN21
QG094-01	C06	HQP001227	NM_007026	DUSP14

QG094-01	C07	HQP023452	NM_001042388	PPP4R1
QG094-01	C08	HQP023249	NM_014787	DNAJC6
QG094-01	C09	HQP023200	NM_014750	DLG7
QG094-01	C10	HQP023028	NM_014634	PPM1F
QG094-01	C11	HQP022913	NM_004897	MINPP1
QG094-01	C12	HQP022301	NM_014241	PTPLA
QG094-01	D01	HQP022191	NM_004715	CTDP1
QG094-01	D02	HQP022092	NM_004687	MTMR4
QG094-01	D03	HQP022089	NM_004686	MTMR7
QG094-01	D04	HQP022088	NM_004685	MTMR6
QG094-01	D05	HQP021686	NM_016156	MTMR2
QG094-01	D06	HQP021683	NM_021090	MTMR3
QG094-01	D07	HQP021548	NM_003837	FBP2
QG094-01	D08	HQP021531	NM_003828	MTMR1
QG094-01	D09	HQP021487	NM_003800	RNGTT
QG094-01	D10	HQP021340	NM_003713	PPAP2B
QG094-01	D11	HQP021335	NM_003711	PPAP2A
QG094-01	D12	HQP021276	NM_003672	CDC14A
QG094-01	E01	HQP021112	NM_003626	PPFIA1
QG094-01	E02	HQP021090	NM_015053	PPFIA4
QG094-01	E03	HQP021053	NM_003620	PPM1D
QG094-01	E04	HQP020754	NM_003584	DUSP11
QG094-01	E05	HQP019733	NM_080391	PTP4A2
QG094-01	E06	HQP019066	NM_001018041	EPM2A
QG094-01	E07	HQP018760	NM_003463	PTP4A1
QG094-01	E08	HQP018223	NM_199259	TPTE
QG094-01	E09	HQP018167	NM_022648	TNS1
QG094-01	E10	HQP017809	NM_145251	STYX
QG094-01	E11	HQP016574	NM_002972	SBF1
QG094-01	E12	HQP015943	NM_002851	PTPRZ1
QG094-01	F01	HQP015939	NM_002850	PTPRS
QG094-01	F02	HQP015937	NM_002849	PTPRR
QG094-01	F03	HQP015933	NM_002848	PTPRO
QG094-01	F04	HQP015929	NM_002847	PTPRN2
QG094-01	F05	HQP015927	NM_002845	PTPRM
QG094-01	F06	HQP015926	NM_002844	PTPRK
QG094-01	F07	HQP015925	NM_002843	PTPRJ
QG094-01	F08	HQP015924	NM_002842	PTPRH
QG094-01	F09	HQP015921	NM_002840	PTPRF
QG094-01	F10	HQP015919	NM_006504	PTPRE
QG094-01	F11	HQP015912	NM_001040712	PTPRD

QG094-01	F12	HQP015908	NM_002838	PTPRC
QG094-01	G01	HQP015907	NM_002837	PTPRB
QG094-01	G02	HQP015897	NM_006264	PTPN13
QG094-01	G03	HQP015890	NM_002835	PTPN12
QG094-01	G04	HQP015878	NM_002834	PTPN11
QG094-01	G05	HQP015873	NM_002833	PTPN9
QG094-01	G06	HQP015863	NM_002832	PTPN7
QG094-01	G07	HQP015856	NM_002830	PTPN4
QG094-01	G08	HQP015854	NM_002829	PTPN3
QG094-01	G09	HQP015839	NM_002828	PTPN2
QG094-01	G10	HQP015828	NM_002827	PTPN1
QG094-01	G11	HQP015535	NM_000314	PTEN
QG094-01	G12	HQP014907	NM_002755	MAP2K1
QG094-01	H01	HGDC		
QG094-01	H02	HGDC		
QG094-01	H03	HQP006940	NM_002046	GAPDH
QG094-01	H04	HQP016381	NM_001101	ACTB
QG094-01	H05	HQP015171	NM_004048	B2M
QG094-01	H06	HQP006171	NM_012423	RPL13A
QG094-01	H07	HQP009026	NM_000194	HPRT1
QG094-01	H08	HQP054253	NR_003286	RN18S1
QG094-01	H09	RT		
QG094-01	H10	RT		
QG094-01	H11	PCR		
QG094-01	H12	PCR		
QG094-02	A01	HQP014381	NM_002721	PPP6C
QG094-02	A02	HQP014377	NM_006247	PPP5C
QG094-02	A03	HQP014356	NM_000945	PPP3R1
QG094-02	A04	HQP014346	NM_005605	PPP3CC
QG094-02	A05	HQP014334	NM_021132	PPP3CB
QG094-02	A06	HQP014321	NM_002720	PPP4C
QG094-02	A07	HQP014309	NM_000944	PPP3CA
QG094-02	A08	HQP014301	NM_006246	PPP2R5E
QG094-02	A09	HQP014282	NM_006245	PPP2R5D
QG094-02	A10	HQP014262	NM_002719	PPP2R5C
QG094-02	A11	HQP014251	NM_006244	PPP2R5B
QG094-02	A12	HQP014244	NM_006243	PPP2R5A
QG094-02	B01	HQP014212	NM_002718	PPP2R3A
QG094-02	B02	HQP014202	NM_020416	PPP2R2C
QG094-02	B03	HQP014174	NM_002717	PPP2R2A
QG094-02	B04	HQP014161	NM_002716	PPP2R1B

QG094-02	B05	HQP014115	NM_002715	PPP2CA
QG094-02	B06	HQP014033	NM_005398	PPP1R3C
QG094-02	B07	HQP013980	NM_002710	PPP1CC
QG094-02	B08	HQP013970	NM_002709	PPP1CB
QG094-02	B09	HQP013953	NM_001008709	PPP1CA
QG094-02	B10	HQP013893	NM_021003	PPM1A
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QG094-02	B12	HQP013643	NM_006239	PPEF2
QG094-02	C01	HQP013613	NM_021129	PPA1
QG094-02	C02	HQP013073	NM_004567	PFKFB4
QG094-02	C03	HQP013072	NM_004566	PFKFB3
QG094-02	C04	HQP012011	NM_000276	OCRL
QG094-02	C05	HQP011657	NM_002481	PPP1R12B
QG094-02	C06	HQP011625	NM_001002841	MYL4
QG094-02	C07	HQP011549	NM_000252	MTM1
QG094-02	C08	HQP010565	NM_001042771	LCK
QG094-02	C09	HQP009837	NM_033453	ITPA
QG094-02	C10	HQP009756	NM_001567	INPPL1
QG094-02	C11	HQP009752	NM_005539	INPP5A
QG094-02	C12	HQP009750	NM_001566	INPP4A
QG094-02	D01	HQP009747	NM_002194	INPP1
QG094-02	D02	HQP009727	NM_014214	IMPA2
QG094-02	D03	HQP009726	NM_005536	IMPA1
QG094-02	D04	HQP005224	NM_000507	FBP1
QG094-02	D05	HQP005048	NM_001990	EYA3
QG094-02	D06	HQP005044	NM_005244	EYA2
QG094-02	D07	HQP005041	NM_000503	EYA1
QG094-02	D08	HQP004507	NM_004420	DUSP8
QG094-02	D09	HQP004506	NM_001947	DUSP7
QG094-02	D10	HQP004504	NM_001946	DUSP6
QG094-02	D11	HQP004503	NM_004419	DUSP5
QG094-02	D12	HQP004501	NM_001394	DUSP4
QG094-02	E01	HQP004500	NM_004090	DUSP3
QG094-02	E02	HQP004498	NM_004417	DUSP1
QG094-02	E03	HQP004337	NM_004087	DLG1
QG094-02	E04	HQP000418	NM_005192	CDKN3
QG094-02	E05	HQP023409	NM_001790	CDC25C
QG094-02	E06	HQP023399	NM_004358	CDC25B
QG094-02	E07	HQP023385	NM_001789	CDC25A
QG094-02	E08	HQP006448	NM_031313	ALPPL2
QG094-02	E09	HQP006440	NM_000478	ALPL

QG094-02	E10	HQP006433	NM_001631	ALPI
QG094-02	E11	HQP004724	NM_001623	AIF1
QG094-02	E12	HQP023341	NM_138448	ACYP2
QG094-02	F01	HQP023213	NM_001107	ACYP1
QG094-02	F02	HQP014890	NM_001099	ACPP
QG094-02	F03	HQP013957	NM_001611	ACP5
QG094-02	F04	HQP013357	NM_001610	ACP2
QG094-02	F05	HQP021106	NM_003625	PPFIA2
QG094-02	F06	HQP013165	NM_001040649	ACP1
QG094-02	F07	HQP021272	NM_001077181	CDC14B
QG094-02	F08	HQP020019	NM_001222	CAMK2G
QG094-02	F09	HQP004499	NM_004418	DUSP2
QG094-02	F10	HQP004508	NM_001395	DUSP9
QG094-02	F11	HQP004980	NM_004100	EYA4
QG094-02	F12	HQP013069	NM_002625	PFKFB1
QG094-02	G01	HQP013070	NM_001018053	PFKFB2
QG094-02	G02	HQP013904	NM_001033556	PPM1B
QG094-02	G03	HQP013921	NM_002707	PPM1G
QG094-02	G04	HQP014048	NM_006242	PPP1R3D
QG094-02	G05	HQP014125	NM_001009552	PPP2CB
QG094-02	G06	HQP014187	NM_004576	PPP2R2B
QG094-02	G07	HQP014229	NM_021131	PPP2R4
QG094-02	G08	HQP015523	NM_004577	PSPH
QG094-02	G09	HQP015859	NM_002831	PTPN6
QG094-02	G10	HQP015901	NM_005401	PTPN14
QG094-02	G11	HQP021337	NM_003712	PPAP2C
QG094-02	G12	HQP015923	NM_002841	PTPRG
QG094-02	H01	HGDC		
QG094-02	H02	HGDC		
QG094-02	H03	HQP006940	NM_002046	GAPDH
QG094-02	H04	HQP016381	NM_001101	ACTB
QG094-02	H05	HQP015171	NM_004048	B2M
QG094-02	H06	HQP006171	NM_012423	RPL13A
QG094-02	H07	HQP009026	NM_000194	HPRT1
QG094-02	H08	HQP054253	NR_003286	RN18S1
QG094-02	H09	RT		
QG094-02	H10	RT		
QG094-02	H11	PCR		
QG094-02	H12	PCR		

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GeneCopoeia warrants that the Product meets the specifications described in the accompanying Product Datasheet. If it is proven to the satisfaction of GeneCopoeia that the Product fails to meet these specifications, GeneCopoeia will replace the Product. In the event a replacement cannot be provided, GeneCopoeia will provide the purchaser with a refund. This limited warranty shall not extend to anyone other than the original purchaser of the Product. Notice of nonconforming products must be made to GeneCopoeia within 30 days of receipt of the Product. GeneCopoeia's liability is expressly limited to replacement of Product or a refund limited to the actual purchase price.

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