

ExProfile™ Human Electron Transport Toxicology Related Gene qPCR Array

For focused group profiling of human electron transport toxicology genes expression

Cat. No. QG014-A (1 x 96-well plate, Format A)

Cat. No. QG014-B (1 x 96-well plate, Format B)

Cat. No. QG014-C (1 x 96-well plate, Format C)

Cat. No. QG014-D (1 x 96-well plate, Format D)

Cat. No. QG014-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 electron transport toxicology related gene qPCR array profiles the expression of 84 human genes related to the potential side effects of drugs and other toxins. These genes are carefully chosen for their close correlation based on a thorough literature search of peer-reviewed publications, mainly including genes that encode various enzymes of electron transport, such as dehydrogenases, oxygenases, oxidases, reductases and p450 enzymes. This array allows researchers to study the related genes to gain understanding of their roles in the functioning and characterization of electron transport toxicology.

- QG014 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

GeneCopoela 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	UQCRC2	UQCRC1	TXNRD2	TXNRD1	TXNDC1	TXN2	TXN	SDHC	SDHB	SDHA	PTGIS	PPARGC1A
B	POR	P4HB	NR1H3	NQO2	NQO1	NOS3	NOS2A	NDUFV2	NDUFV1	NDUFS4	NDUFS1	NDUFB8
C	NDUFA6	MAOB	MAOA	IVD	HAO1	GSR	GPD2	FMO4	FMO3	FMO2	FMO1	FDXR
D	CYP8B1	CYP7B1	CYP7A1	CYP51A1	CYP4F3	CYP4F12	CYP4B1	CYP4A11	CYP46A1	CYP3A5	CYP3A43	CYP3A4
E	CYP39A1	CYP281	CYP2R1	CYP2J2	CYP2F1	CYP2E1	CYP2D6	CYP2C9	CYP2C19	CYP2B6	CYP2A6	CYP2A13
F	CYP27B1	CYP27A1	CYP26A1	CYP24A1	CYP21A2	CYP1B1	CYP1A2	CYP1A1	CYP19A1	CYP17A1	CYP11A1	CYB5R3
G	BLVRA	ALOX5	ALOX12	ACOX1	ACADVL	ACADS	ACADL	ABP1	CYC1	CYP11B1	ACADM	ACADSB
H	HGDC	HGDC	GAPDH	ACTB	B2M	RPL13A	HPRT1	RN18S1	RT	RT	PCR	PCR

Figure1. Illustration of QG014 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
QG014-01	A01	HQP018437	NM_003366	UQCRC2
QG014-01	A02	HQP018436	NM_003365	UQCRC1
QG014-01	A03	HQP000708	NM_006440	TXNRD2
QG014-01	A04	HQP018336	NM_003330	TXNRD1
QG014-01	A05	HQP019885	NM_030755	TXNDC1
QG014-01	A06	HQP006764	NM_012473	TXN2
QG014-01	A07	HQP018335	NM_003329	TXN
QG014-01	A08	HQP016694	NM_001035511	SDHC
QG014-01	A09	HQP016689	NM_003000	SDHB
QG014-01	A10	HQP016682	NM_004168	SDHA
QG014-01	A11	HQP015586	NM_000961	PTGIS
QG014-01	A12	HQP001016	NM_013261	PPARGC1A
QG014-01	B01	HQP013504	NM_000941	POR
QG014-01	B02	HQP012109	NM_000918	P4HB
QG014-01	B03	HQP000086	NM_005693	NR1H3
QG014-01	B04	HQP011858	NM_000904	NQO2
QG014-01	B05	HQP004317	NM_000903	NQO1
QG014-01	B06	HQP011868	NM_000603	NOS3
QG014-01	B07	HQP011866	NM_000625	NOS2A
QG014-01	B08	HQP011735	NM_021074	NDUFV2
QG014-01	B09	HQP011730	NM_007103	NDUFV1
QG014-01	B10	HQP011731	NM_002495	NDUFS4
QG014-01	B11	HQP011726	NM_005006	NDUFS1
QG014-01	B12	HQP011721	NM_005004	NDUFB8
QG014-01	C01	HQP011706	NM_002490	NDUFA6
QG014-01	C02	HQP011008	NM_000898	MAOB
QG014-01	C03	HQP011007	NM_000240	MAOA
QG014-01	C04	HQP009845	NM_002225	IVD
QG014-01	C05	HQP013447	NM_017545	HAO1
QG014-01	C06	HQP008473	NM_000637	GSR
QG014-01	C07	HQP007813	NM_000408	GPD2
QG014-01	C08	HQP005968	NM_002022	FMO4
QG014-01	C09	HQP005959	NM_001002294	FMO3
QG014-01	C10	HQP005951	NM_001460	FMO2
QG014-01	C11	HQP005939	NM_002021	FMO1
QG014-01	C12	HQP005387	NM_004110	FDXR
QG014-01	D01	HQP003865	NM_004391	CYP8B1

QG014-01	D02	HQP022723	NM_004820	CYP7B1
QG014-01	D03	HQP003859	NM_000780	CYP7A1
QG014-01	D04	HQP003924	NM_000786	CYP51A1
QG014-01	D05	HQP010910	NM_000896	CYP4F3
QG014-01	D06	HQP017537	NM_023944	CYP4F12
QG014-01	D07	HQP003855	NM_000779	CYP4B1
QG014-01	D08	HQP003847	NM_000778	CYP4A11
QG014-01	D09	HQP000977	NM_006668	CYP46A1
QG014-01	D10	HQP003841	NM_000777	CYP3A5
QG014-01	D11	HQP017181	NM_022820	CYP3A43
QG014-01	D12	HQP003836	NM_017460	CYP3A4
QG014-01	E01	HQP012613	NM_016593	CYP39A1
QG014-01	E02	HQP008529	NM_030622	CYP2S1
QG014-01	E03	HQP002083	NM_024514	CYP2R1
QG014-01	E04	HQP003823	NM_000775	CYP2J2
QG014-01	E05	HQP003818	NM_000774	CYP2F1
QG014-01	E06	HQP003817	NM_000773	CYP2E1
QG014-01	E07	HQP003814	NM_000106	CYP2D6
QG014-01	E08	HQP003811	NM_000771	CYP2C9
QG014-01	E09	HQP003809	NM_000769	CYP2C19
QG014-01	E10	HQP003808	NM_000767	CYP2B6
QG014-01	E11	HQP003787	NM_000762	CYP2A6
QG014-01	E12	HQP003804	NM_000766	CYP2A13
QG014-01	F01	HQP003923	NM_000785	CYP27B1
QG014-01	F02	HQP003922	NM_000784	CYP27A1
QG014-01	F03	HQP003919	NM_000783	CYP26A1
QG014-01	F04	HQP003917	NM_000782	CYP24A1
QG014-01	F05	HQP003908	NM_000500	CYP21A2
QG014-01	F06	HQP003775	NM_000104	CYP1B1
QG014-01	F07	HQP003774	NM_000761	CYP1A2
QG014-01	F08	HQP003772	NM_000499	CYP1A1
QG014-01	F09	HQP003904	NM_000103	CYP19A1
QG014-01	F10	HQP003888	NM_000102	CYP17A1
QG014-01	F11	HQP003871	NM_000781	CYP11A1
QG014-01	F12	HQP004315	NM_000398	CYB5R3
QG014-01	G01	HQP017020	NM_000712	BLVRA
QG014-01	G02	HQP006359	NM_000698	ALOX5
QG014-01	G03	HQP006356	NM_000697	ALOX12
QG014-01	G04	HQP013061	NM_004035	ACOX1
QG014-01	G05	HQP010079	NM_000018	ACADVL
QG014-01	G06	HQP009706	NM_000017	ACADS

QG014-01	G07	HQP009284	NM_001608	ACADL
QG014-01	G08	HQP007422	NM_001091	ABP1
QG014-01	G09	HQP003750	NM_001916	CYC1
QG014-01	G10	HQP003878	NM_000497	CYP11B1
QG014-01	G11	HQP009569	NM_000016	ACADM
QG014-01	G12	HQP009833	NM_001609	ACADSB
QG014-01	H01	HGDC		
QG014-01	H02	HGDC		
QG014-01	H03	HQP006940	NM_002046	GAPDH
QG014-01	H04	HQP016381	NM_001101	ACTB
QG014-01	H05	HQP015171	NM_004048	B2M
QG014-01	H06	HQP006171	NM_012423	RPL13A
QG014-01	H07	HQP009026	NM_000194	HPRT1
QG014-01	H08	HQP054253	NR_003286	RN18S1
QG014-01	H09	RT		
QG014-01	H10	RT		
QG014-01	H11	PCR		
QG014-01	H12	PCR		

Limited Use License

Following terms and conditions apply to use of ExProfile™ Human Electron Transport Toxicology 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.

Limited Warranty

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.

GeneCopoeia's liability does not extend to any damages arising from use or improper use of the Product, or losses associated with the use of additional materials or reagents. This limited warranty is the sole and exclusive warranty. GeneCopoeia does not provide any other warranties of any kind, expressed or implied, including the merchantability or fitness of the Product for a particular purpose.

GeneCopoeia is committed to providing our customers with high-quality products. If you should have any questions or concerns about any GeneCopoeia products, please contact us at 301-762-0888.

© 2016 GeneCopoeia, Inc.

GeneCopoeia, Inc.
9620 Medical Center Drive, Suite 101
Rockville, MD 20850
+1 (301) 762-0888
+1 (866) 360-9531
inquiry@genecopoeia.com