

ExProfile™ Human Neuroscience Ion Channels & Transporters Related Gene qPCR Array

For focused group profiling of human neuroscience ion channels and transporters genes expression

Cat. No. QG039-A (1 x 96-well plate, Format A)

Cat. No. QG039-B (1 x 96-well plate, Format B)

Cat. No. QG039-C (1 x 96-well plate, Format C)

Cat. No. QG039-D (1 x 96-well plate, Format D)

Cat. No. QG039-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 neuroscience ion channels and transporters related gene qPCR array profiles the expression of 84 human genes related to neuroscience-related ion channels and transporters. These genes are carefully chosen for their close correlation based on a thorough literature search of peer-reviewed publications, mainly including genes involved in calcium channels, potassium channels, sodium channels, chloride channels, and related transporters. This array allows researchers to study the related genes to gain understanding of their roles in the functioning and characterization of neuronal ion channels and transporters.

- QG039 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	KCNQ2	KCNN3	CLCN6	CACNB1	HPRT1	SLC6A4	SLC6A11	SLC2A11	SLC2A1	SLC1A2	SLC1A1	SLC18A1
B	SCN9A	SCN7A	SCN5A	SCN4A	SCN3A	SCN2B	SCN1B	SCN1A	KCNS3	KCNS2	KCNS1	KCNQ4
C	KCNQ3	KCNQ2	KCNQ1	KCNN4	KCNN3	KCNN2	KCNMB1	KCNJ6	KCNJ5	KCNJ4	KCNJ3	KCNJ11
D	KCNJ1	KCNH2	KCNH1	KCNG1	KCNE1	KCND2	KCND1	KCNC1	KCNB2	KCNB1	KCNA5	KCNA4
E	KCNA3	CLIC2	CLIC1	CLCN7	CLCN6	CLCN5	CLCN4	CLCN2	CLCN1	CFTR	CACNB3	CACNB2
F	CACNB1	CACNA1S	CACNA1C	CACNA1B	ATP4A	ATP1B1	ATP1A1	ACCN1	CACNA1A	CLCA1	SCN2A	KCNN2
G	ACCN2	ATP2A1	SLC1A3	GAD1	CACNG2	CLCN3	KCNA1	KCNA2	GPR83	KCNF1	KCNN1	SLC18A2
H	HGDC	HGDC	GAPDH	ACTB	B2M	RPL13A	HPRT1	RN18S1	RT	RT	PCR	PCR

Figure1. Illustration of QG039 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
QG039-01	A01	HQP010053	NM_172109	KCNQ2
QG039-01	A02	HQP010042	NM_170782	KCNN3
QG039-01	A03	HQP002003	NM_021735	CLCN6
QG039-01	A04	HQP018779	NM_199248	CACNB1
QG039-01	A05	HQP009026	NM_000194	HPRT1
QG039-01	A06	HQP053962	NM_001045	SLC6A4
QG039-01	A07	HQP017431	NM_014229	SLC6A11
QG039-01	A08	HQP017549	NM_030807	SLC2A11
QG039-01	A09	HQP017350	NM_006516	SLC2A1
QG039-01	A10	HQP017318	NM_004171	SLC1A2
QG039-01	A11	HQP017312	NM_004170	SLC1A1
QG039-01	A12	HQP017478	NM_003053	SLC18A1
QG039-01	B01	HQP016605	NM_002977	SCN9A
QG039-01	B02	HQP016603	NM_002976	SCN7A
QG039-01	B03	HQP016601	NM_000335	SCN5A
QG039-01	B04	HQP016598	NM_000334	SCN4A
QG039-01	B05	HQP016597	NM_006922	SCN3A
QG039-01	B06	HQP016594	NM_004588	SCN2B
QG039-01	B07	HQP053902	NM_001037	SCN1B
QG039-01	B08	HQP016589	NM_006920	SCN1A
QG039-01	B09	HQP010069	NM_002252	KCNS3
QG039-01	B10	HQP010063	NM_020697	KCNS2
QG039-01	B11	HQP010058	NM_002251	KCNS1
QG039-01	B12	HQP022139	NM_004700	KCNQ4
QG039-01	C01	HQP010054	NM_004519	KCNQ3
QG039-01	C02	HQP010049	NM_004518	KCNQ2
QG039-01	C03	HQP010046	NM_000218	KCNQ1
QG039-01	C04	HQP010043	NM_002250	KCNN4
QG039-01	C05	HQP010041	NM_002249	KCNN3
QG039-01	C06	HQP010039	NM_021614	KCNN2
QG039-01	C07	HQP010035	NM_004137	KCNMB1
QG039-01	C08	HQP010010	NM_002240	KCNJ6
QG039-01	C09	HQP010009	NM_000890	KCNJ5
QG039-01	C10	HQP010007	NM_004981	KCNJ4
QG039-01	C11	HQP010005	NM_002239	KCNJ3
QG039-01	C12	HQP010015	NM_000525	KCNJ11
QG039-01	D01	HQP010001	NM_000220	KCNJ1
QG039-01	D02	HQP009998	NM_000238	KCNH2
QG039-01	D03	HQP009990	NM_002238	KCNH1
QG039-01	D04	HQP009980	NM_002237	KCNG1
QG039-01	D05	HQP009969	NM_000219	KCNE1
QG039-01	D06	HQP009949	NM_012281	KCND2

QG039-01	D07	HQP009947	NM_004979	KCND1
QG039-01	D08	HQP009900	NM_004976	KCNC1
QG039-01	D09	HQP022515	NM_004770	KCNB2
QG039-01	D10	HQP009893	NM_004975	KCNB1
QG039-01	D11	HQP009873	NM_002234	KCNA5
QG039-01	D12	HQP009869	NM_002233	KCNA4
QG039-01	E01	HQP009868	NM_002232	KCNA3
QG039-01	E02	HQP002044	NM_001289	CLIC2
QG039-01	E03	HQP002039	NM_001288	CLIC1
QG039-01	E04	HQP002010	NM_001287	CLCN7
QG039-01	E05	HQP002002	NM_001286	CLCN6
QG039-01	E06	HQP002001	NM_000084	CLCN5
QG039-01	E07	HQP001985	NM_001830	CLCN4
QG039-01	E08	HQP001982	NM_004366	CLCN2
QG039-01	E09	HQP001981	NM_000083	CLCN1
QG039-01	E10	HQP000948	NM_000492	CFTR
QG039-01	E11	HQP018799	NM_000725	CACNB3
QG039-01	E12	HQP018782	NM_000724	CACNB2
QG039-01	F01	HQP018777	NM_000723	CACNB1
QG039-01	F02	HQP018758	NM_000069	CACNA1S
QG039-01	F03	HQP018723	NM_000719	CACNA1C
QG039-01	F04	HQP018714	NM_000718	CACNA1B
QG039-01	F05	HQP012018	NM_000704	ATP4A
QG039-01	F06	HQP011841	NM_001677	ATP1B1
QG039-01	F07	HQP011776	NM_000701	ATP1A1
QG039-01	F08	HQP010975	NM_001094	ACCN1
QG039-01	F09	HQP018704	NM_000068	CACNA1A
QG039-01	F10	HQP001979	NM_001285	CLCA1
QG039-01	F11	HQP054021	NM_021007	SCN2A
QG039-01	F12	HQP010040	NM_170775	KCNN2
QG039-01	G01	HQP011145	NM_020039	ACCN2
QG039-01	G02	HQP011899	NM_173201	ATP2A1
QG039-01	G03	HQP017320	NM_004172	SLC1A3
QG039-01	G04	HQP006684	NM_013445	GAD1
QG039-01	G05	HQP000439	NM_006078	CACNG2
QG039-01	G06	HQP001983	NM_001829	CLCN3
QG039-01	G07	HQP009864	NM_000217	KCNA1
QG039-01	G08	HQP009865	NM_004974	KCNA2
QG039-01	G09	HQP001013	NM_016540	GPR83
QG039-01	G10	HQP009973	NM_002236	KCNF1
QG039-01	G11	HQP010037	NM_002248	KCNN1
QG039-01	G12	HQP017479	NM_003054	SLC18A2
QG039-01	H01	HGDC		
QG039-01	H02	HGDC		
QG039-01	H03	HQP006940	NM_002046	GAPDH
QG039-01	H04	HQP016381	NM_001101	ACTB

QG039-01	H05	HQP015171	NM_004048	B2M
QG039-01	H06	HQP006171	NM_012423	RPL13A
QG039-01	H07	HQP009026	NM_000194	HPRT1
QG039-01	H08	HQP054253	NR_003286	RN18S1
QG039-01	H09	RT		
QG039-01	H10	RT		
QG039-01	H11	PCR		
QG039-01	H12	PCR		

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

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