

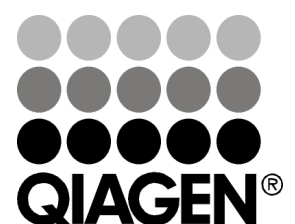
RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Pig Synaptic Plasticity

Cat. no. 330231 PASS-126ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm® BioMark™



Description

The Pig Synaptic Plasticity RT² Profiler™ PCR Array profiles the expression of 84 key genes central to synaptic alterations during learning and memory. The brain recalls immediate events via short-term memories; however, it must consolidate these events into long-term memory for later recall. Memory consolidation requires synaptic plasticity characterized by physical changes to, and gene expression changes in, neuronal synapses. Synaptic plasticity studies have discovered immediate-early genes (IEGs) that alter expression immediately after neuronal events. IEGs mediate long-term potentiation (LTP), a process that enhances synaptic connections and consolidates memories. However, as not all events become long-term memories, the opposite synaptic remodeling response, long-term depression (LTD), also plays a central role in synaptic plasticity. Gene expression changes associated with LTD yield physical changes in the neuronal synapse that recycle receptors and either enhance or inhibit synaptic connections. This array includes IEGs and other genes important for LTP and LTD, as well as key neuronal receptor genes and genes important for synapse remodeling. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in synaptic plasticity, LTP and LTD with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² Profiler PCR Arrays in formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

For long term storage, keep plates at –20°C.

Note: Ensure that you have the correct RT² Profiler PCR Array format for your real-time cyclers (see table above).

Note: Open the package and store the products appropriately immediately on receipt.

Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	ADAM10	ADAM17	ADCY1	ADCY8	AKT1	ARC	BDNF	CAMK2G	CDH2	CEBPB	CEBPD	CNR1
B	CREB1	CREM	DLG4	EGR1	EGR2	EGR3	EGR4	EPHB2	FOS	GABRA1	GABRA5	GNAI1
C	GRIA1	GRIA2	GRIA3	GRIA4	GRIN1	GRIN2B	GRIN2C	GRIN2D	GRIN3B	GRM1	GRM2	GRM3
D	GRM4	GRM5	GRM7	HOMER1	IGF1	INHBA	JUN	JUNB	KLF10	LOC100519209	LOC100524120	CAMK2A
E	LOC100736832	MAPK1	MMP9	NCAM1	NFKB1	NFKB1B	NGF	NGFR	NOS1	NOTCH1	NPTX2	NTF3
F	NTF4	PCDH8	PICK1	PIM1	PLAT	PLCG1	PPPICA	PPP1CC	PPP1R14A	PPP2CA	PPP3CA	PRKCA
G	PRKCG	PRKG1	RAB3A	RELA	RGS2	RHEB	SIRT1	SRF	SYNPO	TIMP1	TNF	YWHAQ
H	ACTB	B2M	GAPDH	HPRT1	RPL13A	SGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Ssc.1114	NM_001130531	ADAM10	ADAM metalloproteinase domain 10
A02	Ssc.19668	NM_001099926	ADAM17	ADAM metalloproteinase domain 17
A03	N/A	XM_013985803	ADCY1	Adenylate cyclase type 1-like
A04	N/A	XM_021088903	ADCY8	Adenylate cyclase 8
A05	Ssc.19672	NM_001159776	AKT1	V-akt murine thymoma viral oncogene homolog 1
A06	N/A	XM_021088786	ARC	Activity regulated cytoskeleton associated protein
A07	Ssc.16243	NM_214259	BDNF	Brain-derived neurotrophic factor
A08	Ssc.49878	NM_214193	CAMK2G	Calcium/calmodulin-dependent protein kinase II gamma
A09	N/A	XR_130700	CDH2	Cadherin 2, type 1, N-cadherin (neuronal)
A10	Ssc.32416	NM_001199889	CEBPB	CCAAT/enhancer binding protein (C/EBP), beta
A11	Ssc.97280	XM_005663091	CEBPD	CCAAT/enhancer binding protein (C/EBP), delta
A12	N/A	XM_005659288	CNR1	Cannabinoid receptor 1 (brain)
B01	Ssc.80814	NM_001099929	CREB1	CAMP responsive element binding protein 1
B02	Ssc.2841	XM_003130810	CREM	CAMP responsive element modulator
B03	N/A	XM_003481294	DLG4	Discs, large homolog 4 (Drosophila)
B04	Ssc.5974	XM_003123974	EGR1	Early growth response 1
B05	Ssc.51140	NM_001097488	EGR2	Early growth response 2
B06	N/A	XM_003359030	EGR3	Early growth response 3
B07	Ssc.10361	NM_001285968	EGR4	Early growth response 4
B08	Ssc.48876	XM_005656047	EPHB2	EPH receptor B2
B09	Ssc.1555	NM_001123113	FOS	FBJ murine osteosarcoma viral oncogene homolog
B10	Ssc.89358	XM_003134089	GABRA1	Gamma-aminobutyric acid type A receptor alpha1 subunit
B11	N/A	XM_003121648	GABRA5	Gamma-aminobutyric acid receptor subunit alpha-5-like
B12	Ssc.4159	NM_001123115	GNAI1	GII1 protein

Position	UniGene	GenBank	Symbol	Description
C01	N/A	XM_003359841	GRIA1	Glutamate receptor, ionotropic, AMPA 1
C02	N/A	XM_005656504	GRIA2	Glutamate receptor, ionotropic, AMPA 2
C03	N/A	XM_003135380	GRIA3	Glutamate receptor, ionotropic, AMPA 3
C04	N/A	XM_003129821	GRIA4	Glutamate receptor, ionotropic, AMPA 4
C05	N/A	XM_013992346	GRIN1	Glutamate receptor, ionotropic, N-methyl D-aspartate 1
C06	N/A	XM_003355567	GRIN2B	Glutamate receptor, ionotropic, N-methyl D-aspartate 2B
C07	N/A	XM_013980765	GRIN2C	Glutamate receptor, ionotropic, N-methyl D-aspartate 2C
C08	N/A	XM_003127274	GRIN2D	Glutamate receptor, ionotropic, N-methyl D-aspartate 2D
C09	N/A	XM_003353966	GRIN3B	Glutamate receptor, ionotropic, N-methyl-D-aspartate 3B
C10	N/A	XM_005659163	GRM1	Glutamate receptor, metabotropic 1
C11	N/A	XM_013981686	GRM2	Glutamate receptor, metabotropic 2
C12	Ssc.67141	XM_013989603	GRM3	Glutamate receptor, metabotropic 3
D01	N/A	XM_001928369	GRM4	Glutamate receptor, metabotropic 4
D02	N/A	XM_021102327	GRM5	Glutamate metabotropic receptor 5
D03	N/A	XM_013990104	GRM7	Glutamate receptor, metabotropic 7
D04	Ssc.76338	NM_001243811	HOMER1	Homer homolog 1 (Drosophila)
D05	Ssc.16231	NM_214256	IGF1	Insulin-like growth factor 1 (somatomedin C)
D06	Ssc.52080	NM_214028	INHBA	Inhibin, beta A
D07	Ssc.94492	NM_213880	JUN	C-JUN protein
D08	Ssc.101817	XM_005674483	JUNB	Jun B proto-oncogene
D09	Ssc.17289	NM_001134344	KLF10	Kruppel-like factor 10
D10	Ssc.54461	XM_013980142	LOC100519209	Neurotrophic tyrosine kinase, receptor, type 2
D11	N/A	XM_005673194	LOC100524120	Glutamate receptor, metabotropic 8
D12	N/A	XM_003354356	CAMK2A	Calcium/calmodulin dependent protein kinase II alpha
E01	N/A	XM_003481048	LOC100736832	Glutamate receptor ionotropic, NMDA 2A-like
E02	Ssc.72142	NM_001198922	MAPK1	Extracellular signal-regulated kinase-2
E03	Ssc.4086	NM_001038004	MMP9	Matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
E04	Ssc.3051	XM_005667343	NCAM1	Neural cell adhesion molecule 1
E05	Ssc.17816	NM_001048232	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
E06	Ssc.23982	XM_003355897	NFKBIB	NF-kappa-B inhibitor beta-like
E07	Ssc.19976	XM_021089996	NGF	Nerve growth factor
E08	N/A	XM_003131565	NGFR	Nerve growth factor receptor
E09	N/A	XM_013990334	NOS1	Nitric oxide synthase 1 (neuronal)
E10	Ssc.58523	XM_021081037	NOTCH1	Notch 1
E11	N/A	XM_005661854	NPTX2	Neuronal pentraxin II
E12	Ssc.1916	NM_001123152	NTF3	Neurotrophin 3
F01	Ssc.67990	NM_001243713	NTF4	Neurotrophin 4
F02	N/A	XM_003131007	PCDH8	Protocadherin 8
F03	Ssc.2388	XM_003355339	PICK1	Protein interacting with PRKCA 1
F04	Ssc.41548	XM_005665927	PIM1	Pim-1 oncogene

Position	UniGene	GenBank	Symbol	Description
F05	Ssc.196	NM_214054	PLAT	Plasminogen activator, tissue
F06	Ssc.11206	XM_005672938	PLCG1	Phospholipase C, gamma 1
F07	Ssc.21716	NM_001044559	PPPICA	Protein phosphatase 1 catalytic subunit alpha isoform
F08	Ssc.11661	NM_001044560	PPPICC	Protein phosphatase 1 catalytic subunit gamma isoform
F09	Ssc.13002	NM_214337	PPP1R14A	Protein phosphatase 1, regulatory (inhibitor) subunit 14A
F10	Ssc.13983	NM_214366	PPP2CA	Protein phosphatase 2, catalytic subunit, alpha isozyme
F11	Ssc.94720	NM_214128	PPP3CA	Protein phosphatase 3, catalytic subunit, alpha isozyme
F12	Ssc.15802	XM_005668672	PRKCA	Protein kinase C, alpha
G01	Ssc.78276	XM_003356041	PRKCG	Protein kinase C gamma type-like
G02	Ssc.87636	NM_001044574	PRKG1	Protein kinase, cGMP-dependent, type I
G03	Ssc.5969	NM_001123179	RAB3A	RAB3A, member RAS oncogene family
G04	Ssc.23557	NM_001114281	RELA	V-rel reticuloendotheliosis viral oncogene homolog A (avian)
G05	Ssc.49517	NM_001044600	RGS2	Regulator of G-protein signaling 2, 24kDa
G06	Ssc.5964	NM_001287846	RHEB	GTP-binding protein Rheb-like
G07	Ssc.89851	NM_001145750	SIRT1	Sirtuin 1
G08	N/A	XM_005666020	SRF	Serum response factor (c-fos serum response element-binding transcription factor)
G09	N/A	XM_013992085	SYNPO	Synaptopodin
G10	Ssc.11784	NM_213857	TIMPI	TIMP metalloproteinase inhibitor 1
G11	Ssc.100	NM_214022	TNF	Tumor necrosis factor
G12	Ssc.2456	XM_003481290	YWHAQ	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide
H01	Ssc.10316	XM_003124280	ACTB	Actin, beta
H02	Ssc.73773	NM_213978	B2M	Beta-2-microglobulin
H03	Ssc.16135	NM_001206359	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Ssc.4158	NM_001032376	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Ssc.27927	NM_001244068	RPL13A	Ribosomal protein L13a
H06	N/A	SA_00133	SGDC	Pig Genomic DNA Contamination
H07	N/A	SA_00104	RTC	Reverse Transcription Control
H08	N/A	SA_00104	RTC	Reverse Transcription Control
H09	N/A	SA_00104	RTC	Reverse Transcription Control
H10	N/A	SA_00103	PPC	Positive PCR Control
H11	N/A	SA_00103	PPC	Positive PCR Control
H12	N/A	SA_00103	PPC	Positive PCR Control

Related products

For optimal performance, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT² SYBR[®] Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² SYBR Green qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT ² SYBR Green ROX [™] qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT ² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* Larger kit sizes available; please inquire.

RT² Profiler PCR Array products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

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