

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

CHO Dopamine and Serotonin Pathway

Cat. no. 330231 PAJJ-158Z

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™



Sample & Assay Technologies

Description

The Pig Dopamine & Serotonin Pathway RT² Profiler PCR array profiles the expression of 84 genes associated with the dopamine and serotonin systems. Dopamine and serotonin are 2 of the major neurotransmitter systems in the mammalian nervous system. Dopamine affects brain processes that control both motor and emotional behavior and plays a role in the brain's reward mechanism. Serotonin is critical in temperature regulation, sensory perception, locomotion, sleep, and psychosis. Pharmacological agents targeting dopaminergic/serotonergic neurotransmission have been clinically used to manage several neurological and psychiatric disorders including Parkinson's disease, schizophrenia, bipolar disorder, depression, attention deficit and hyperactivity disorder (ADHD), and addiction. Besides significant progress in understanding their structural, genetic and pharmacological properties, recent studies have uncovered the complexity, intricacy, and plasticity of intracellular signaling mechanisms involved in dopamine and serotonin receptor function. These receptors act through diverse G-protein coupled and G-protein independent mechanisms that trigger downstream intracellular signal transduction events involving the cAMP/PKA, PI-3Kinase/AKT, phospholipase A2 (PLA2), and phospholipase C (PLC) pathways. These pathways in turn regulate various functions including synthesis, transport and degradation of dopamine and serotonin as well as the transcriptional regulation key genes linked to multiple neuropathological conditions. Using real time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes associated with and regulated by the dopamine and serotonin systems 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 cycler (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	Adcy1	Adcy2	Adcy3	Adcy5	Adrb2	Adrbk1	Akt1	Akt2	Akt3	Alox12	App	Arrb1
B	Arrb2	Bdnf	Cacna1a	Casp3	Cdk5	Comt	Creb1	Dbh	Ddc	Drd1	Drd2	Drd3
C	Drd4	Drd5	Dusp1	Ephb1	Fos	Gdnf	Gfap	Grk4	Grk5	Grk6	Gsk3a	Gsk3b
D	Htr1a	Htr1b	Htr1d	Htr1f	Htr2a	Htr2b	Htr2c	Htr3a	Htr3b	Htr4	Htr5a	Htr6
E	Htr7	Itpr1	Maao	Maob	Mapk1	Nr4a1	Nr4a3	Pde10a	Pde4a	Pde4b	Pde4c	Pde4d
F	Pdyn	Pik3ca	Pik3cg	Pla2g5	Plcb1	Plcb2	Plcb3	Ppp1r1b	Ppp2r3a	Prkaca	Prkacb	Plgs2
G	Slc18a1	Slc18a2	Slc6a3	Slc6a4	Snca	Sncap	Sncb	Syn2	Tda2	Th	Tph1	Tph2
H	Actb	Actr5	B2m	Gapdh	Hprt1	JGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description	Assay
A01	N/A	XM_003504387	Adcy1	Adenylate cyclase 1	PPJ03206A
A02	N/A	XM_003505781	Adcy2	Adenylate cyclase 2 (brain)	PPJ16633A
A03	N/A	XM_007619784	Adcy3	Adenylate cyclase 3	PPJ04318A
A04	N/A	XM_003495440	Adcy5	Adenylate cyclase 5	PPJ13031A
A05	N/A	XM_007610304	Adrb2	Adrenoceptor beta 2, surface	PPJ09643A
A06	N/A	XM_003509943	Adrbk1	Adrenergic receptor kinase, beta 1	PPJ02829A
A07	N/A	XM_003498742	Akt1	V-akt murine thymoma viral oncogene homolog 1	PPJ14680A
A08	N/A	XM_007618035	Akt2	Thymoma viral proto-oncogene 2	PPJ03929A
A09	N/A	XM_003508130	Akt3	V-akt murine thymoma viral oncogene homolog 3	PPJ06379A
A10	N/A	XM_007609325	Alox12	Arachidonate 12-lipoxygenase	PPJ03218A
A11	N/A	XM_007645315	App	Amyloid beta (A4) precursor protein	PPJ00134A
A12	N/A	XM_003514566	Arrb1	Arrestin, beta 1	PPJ07471A
B01	N/A	XM_007609368	Arrb2	Arrestin, beta 2	PPJ17197A
B02	N/A	XM_003512746	Bdnf	Brain-derived neurotrophic factor	PPJ14307A
B03	N/A	XM_007624316	Cacna1a	Calcium channel, voltage-dependent, P/Q type, alpha 1A subunit	PPJ01922A
B04	N/A	NM_001244046	Casp3	Caspase 3	PPJ00059A
B05	N/A	XM_003501299	Cdk5	Cyclin-dependent kinase 5	PPJ11612A
B06	N/A	XM_007618112	Comt	Catechol-O-methyltransferase	PPJ15245A
B07	N/A	XM_003506920	Creb1	CAMP responsive element binding protein 1	PPJ02647A
B08	N/A	XM_007620431	Dbh	Dopamine beta-hydroxylase (dopamine beta-monoxygenase)	PPJ10897A
B09	N/A	XM_007636594	Ddc	Dopa decarboxylase (aromatic L-amino acid decarboxylase)	PPJ11056A
B10	N/A	XM_003498119	Drd1	Dopamine receptor D1	PPJ10675A
B11	N/A	XM_003498542	Drd2	Dopamine receptor D2	PPJ06116A
B12	N/A	XM_003497865	Drd3	Dopamine receptor D3	PPJ04061A
C01	N/A	XM_003509758	Drd4	Dopamine receptor D4	PPJ05661A
C02	N/A	XM_003496643	Drd5	Dopamine receptor D5	PPJ06484A
C03	N/A	XM_003500819	Dusp1	Dual specificity phosphatase 1	PPJ14691A
C04	N/A	XM_003501942	Ephb1	Eph receptor B1	PPJ04169A
C05	N/A	NM_001246683	Fos	FBJ osteosarcoma oncogene	PPJ00277A
C06	N/A	XM_007644530	Gdnf	Glial cell derived neurotrophic factor	PPJ16334A
C07	N/A	XM_003504510	Gfap	Glial fibrillary acidic protein	PPJ02056A
C08	N/A	XM_003508838	Grk4	G protein-coupled receptor kinase 4	PPJ13540A
C09	N/A	XM_007620482	Grk5	G protein-coupled receptor kinase 5	PPJ17207A
C10	N/A	XM_007623236	Grk6	G protein-coupled receptor kinase 6	PPJ17208A
C11	N/A	XM_007616698	Gsk3a	Glycogen synthase kinase 3 alpha	PPJ08744A
C12	N/A	XM_007622006	Gsk3b	Glycogen synthase kinase 3 beta	PPJ10627A
D01	N/A	XM_003509072	Htr1a	5-hydroxytryptamine (serotonin) receptor 1A, G protein-coupled	PPJ07089A
D02	N/A	NM_001246754	Htr1b	5-hydroxytryptamine (serotonin) receptor 1B, G protein-coupled	PPJ00199A
D03	N/A	XM_003503640	Htr1d	5-hydroxytryptamine (serotonin) receptor 1D, G protein-coupled	PPJ13791A
D04	N/A	XM_003497264	Htr1f	5-hydroxytryptamine (serotonin) receptor 1F, G protein-coupled	PPJ13509A
D05	N/A	NM_001246728	Htr2a	5-hydroxytryptamine (serotonin) receptor 2A	PPJ00312A
D06	N/A	XM_007626075	Htr2b	5-hydroxytryptamine (serotonin) receptor 2B, G protein-coupled	PPJ17200A
D07	N/A	XM_003508810	Htr2c	5-hydroxytryptamine (serotonin) receptor 2C, G protein-coupled	PPJ07343A
D08	N/A	XM_003514936	Htr3a	5-hydroxytryptamine (serotonin) receptor 3A	PPJ03087A
D09	N/A	XM_003514938	Htr3b	5-hydroxytryptamine (serotonin) receptor 3B, ionotropic	PPJ12333A

Position	UniGene	GenBank	Symbol	Description	Assay
D10	N/A	XM_003499454	Htr4	5-hydroxytryptamine (serotonin) receptor 4, G protein-coupled	PPJ12053A
D11	N/A	XM_003500040	Htr5a	5-hydroxytryptamine (serotonin) receptor 5A	PPJ04743A
D12	N/A	XM_003506892	Htr6	5-hydroxytryptamine (serotonin) receptor 6	PPJ00872A
E01	N/A	XM_003498959	Htr7	5-hydroxytryptamine (serotonin) receptor 7, adenylate cyclase-coupled	PPJ12382A
E02	N/A	XM_007609839	Itpr1	Inositol 1,4,5-trisphosphate receptor 1	PPJ03186A
E03	N/A	XM_003510299	Maoa	Monoamine oxidase A	PPJ02483A
E04	N/A	XM_007628696	MaoB	Monoamine oxidase B	PPJ02247A
E05	N/A	XM_007624835	Mapk1	Mitogen-activated protein kinase 1	PPJ09944A
E06	N/A	XM_007616291	Nr4a1	Nuclear receptor subfamily 4, group A, member 1	PPJ03138A
E07	N/A	XM_007619499	Nr4a3	Nuclear receptor subfamily 4, group A, member 3	PPJ17205A
E08	N/A	XM_007623738	Pde10a	Phosphodiesterase 10A	PPJ05907A
E09	N/A	XM_003499735	Pde4a	Phosphodiesterase 4A, cAMP-specific	PPJ10038A
E10	N/A	XM_007631494	Pde4b	Phosphodiesterase 4B, cAMP-specific	PPJ17111A
E11	N/A	XM_007612919	Pde4c	Phosphodiesterase 4C, cAMP-specific	PPJ17206A
E12	N/A	XM_007609664	Pde4d	Phosphodiesterase 4D, cAMP-specific	PPJ07362A
F01	N/A	XM_003509065	Pdyn	Prodynorphin	PPJ05551A
F02	N/A	XM_003509075	Pik3ca	Phosphatidylinositol 3-kinase, catalytic, alpha polypeptide	PPJ00151A
F03	N/A	XM_007627546	Pik3cg	Phosphoinositide-3-kinase, catalytic, gamma polypeptide	PPJ03460A
F04	N/A	XM_003506897	Pla2g5	Phospholipase A2, group V	PPJ07397A
F05	N/A	XM_007628568	Plcb1	Phospholipase C, beta 1 (phosphoinositide-specific)	PPJ06139A
F06	N/A	XM_003512599	Plcb2	Phospholipase C, beta 2	PPJ02464A
F07	N/A	XM_003511280	Plcb3	Phospholipase C, beta 3 (phosphatidylinositol-specific)	PPJ10261A
F08	N/A	XM_003499583	Ppp1r1b	Protein phosphatase 1, regulatory (inhibitor) subunit 1B	PPJ09570A
F09	N/A	XM_003509090	Ppp2r3a	Protein phosphatase 2, regulatory subunit B*, alpha	PPJ10449A
F10	N/A	XM_007614625	Prkac	Protein kinase, cAMP-dependent, catalytic, alpha	PPJ14469A
F11	N/A	XM_007632108	Prkacb	Protein kinase, cAMP-dependent, catalytic, beta	PPJ13574A
F12	N/A	XM_003496774	Ptgs2	Prostaglandin-endoperoxide synthase 2	PPJ00507A
G01	N/A	XM_003499929	Slc18a1	Solute carrier family 18 (vesicular monoamine), member 1	PPJ01454A
G02	N/A	XM_003500174	Slc18a2	Solute carrier family 18 (vesicular monoamine transporter), member 2	PPJ17095A
G03	N/A	XM_003515681	Slc6a3	Solute carrier family 6 (neurotransmitter transporter, dopamine), member 3	PPJ03409A
G04	N/A	XM_003506082	Slc6a4	Solute carrier family 6 (neurotransmitter transporter), member 4	PPJ07539A
G05	N/A	XM_003503728	SncA	Synuclein, alpha (non A4 component of amyloid precursor)	PPJ17046A
G06	N/A	XM_003511980	SncAip	Synuclein, alpha interacting protein	PPJ12267A
G07	N/A	XM_003498163	Sncb	Synuclein, beta	PPJ16987A
G08	N/A	XM_003507305	Syn2	Synapsin II	PPJ01138A
G09	N/A	XM_003499464	Tdo2	Tryptophan 2,3-dioxygenase	PPJ14055A
G10	N/A	XM_003508079	Th	Tyrosine hydroxylase	PPJ10257A
G11	N/A	XM_003515126	Tph1	Tryptophan hydroxylase 1	PPJ13955A
G12	N/A	XM_003499235	Tph2	Tryptophan hydroxylase 2	PPJ12092A
H01	N/A	NM_001244575	Actb	Actin, beta	PPJ00318A
H02	N/A	XM_007607973	Actr5	ARP5 actin-related protein 5 homolog (yeast)	PPJ03378A
H03	N/A	NM_001246674	B2m	Beta-2 microglobulin	PPJ00271A
H04	N/A	NM_001244854	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase	PPJ00327A
H05	N/A	XM_007623161	Hprt1	Hypoxanthine-guanine phosphoribosyltransferase-like	PPJ14829A
H06	N/A	SA_00519	JGDC	Hamster Genomic DNA Contamination	PPJ00001A
H07	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H08	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H09	N/A	SA_00104	RTC	Reverse Transcription Control	PPX63340A
H10	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A
H11	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A
H12	N/A	SA_00103	PPC	Positive PCR Control	PPX63339A

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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