

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

Mouse Dopamine & Serotonin Pathway

Cat. no. 330231 PAMM-158ZA

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 Mouse 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	Adrb1	Adrb2	Adrbk1	Adrbk2	Akt1	Akt2	Akt3	Alox12
B	App	Arrb1	Arrb2	Bdnf	Cacna1a	Casp3	Cdk5	Comt	Creb1	Cyp2d22	Dbh	Ddc
C	Drd1a	Drd2	Drd3	Drd4	Drd5	Dusp1	Ephb1	Fos	Gdnf	Gfap	Grk4	Grk5
D	Grk6	Gsk3a	Gsk3b	Htr1a	Htr1b	Htr1d	Htr1f	Htr2a	Htr2b	Htr2c	Htr3a	Htr3b
E	Htr4	Htr5a	Htr6	Htr7	Itpr1	Maoa	Maob	Mapk1	Nr4a1	Nr4a3	Pde10a	Pde4a
F	Pde4b	Pde4c	Pde4d	Pdyn	Pik3ca	Pik3cg	Pla2g5	Plcb1	Plcb2	Plcb3	Ppp1r1b	Prkaca
G	Pigs2	Slc18a1	Slc18a2	Slc6a3	Slc6a4	Sncg	Sncgip	Syn2	Tdo2	Th	Tph1	Tph2
H	Actb	B2m	Gapdh	Gusb	Hsp90ab1	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.259733	NM_009622	Adcy1	Adenylate cyclase 1
A02	Mm.390617	NM_153534	Adcy2	Adenylate cyclase 2
A03	Mm.70546	NM_138305	Adcy3	Adenylate cyclase 3
A04	Mm.41137	NM_001012765	Adcy5	Adenylate cyclase 5
A05	Mm.46797	NM_007419	Adrb1	Adrenergic receptor, beta 1
A06	Mm.5598	NM_007420	Adrb2	Adrenergic receptor, beta 2
A07	Mm.254144	NM_130863	Adrbk1	Adrenergic receptor kinase, beta 1
A08	Mm.285619	NM_177078	Adrbk2	Adrenergic receptor kinase, beta 2
A09	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A10	Mm.177194	NM_007434	Akt2	Thymoma viral proto-oncogene 2
A11	Mm.235194	NM_011785	Akt3	Thymoma viral proto-oncogene 3
A12	Mm.12286	NM_007440	Alox12	Arachidonate 12-lipoxygenase
B01	Mm.277585	NM_007471	App	Amyloid beta (A4) precursor protein
B02	Mm.260193	NM_177231	Arrb1	Arrestin, beta 1
B03	Mm.203747	NM_145429	Arrb2	Arrestin, beta 2
B04	Mm.1442	NM_007540	Bdnf	Brain derived neurotrophic factor
B05	Mm.334658	NM_007578	Cacna1a	Calcium channel, voltage-dependent, P/Q type, alpha 1A subunit
B06	Mm.34405	NM_009810	Casp3	Caspase 3
B07	Mm.298798	NM_007668	Cdk5	Cyclin-dependent kinase 5
B08	Mm.100940	NM_007744	Comt	Catechol-O-methyltransferase
B09	Mm.453295	NM_133828	Creb1	CAMP responsive element binding protein 1
B10	Mm.474216	NM_019823	Cyp2d22	Cytochrome P450, family 2, subfamily d, polypeptide 22
B11	Mm.167781	NM_138942	Dbh	Dopamine beta hydroxylase
B12	Mm.12906	NM_016672	Ddc	Dopa decarboxylase
C01	Mm.54161	NM_010076	Drd1a	Dopamine receptor D1A
C02	Mm.41970	NM_010077	Drd2	Dopamine receptor D2
C03	Mm.439735	NM_007877	Drd3	Dopamine receptor D3
C04	Mm.41075	NM_007878	Drd4	Dopamine receptor D4
C05	Mm.167154	NM_013503	Drd5	Dopamine receptor D5
C06	Mm.239041	NM_013642	Dusp1	Dual specificity phosphatase 1
C07	Mm.22897	NM_173447	Ephb1	Eph receptor B1
C08	Mm.246513	NM_010234	Fos	FBJ osteosarcoma oncogene
C09	Mm.4679	NM_010275	Gdnf	Glial cell line derived neurotrophic factor
C10	Mm.1239	NM_010277	Gfap	Glial fibrillary acidic protein
C11	Mm.117076	NM_019497	Grk4	G protein-coupled receptor kinase 4
C12	Mm.279400	NM_018869	Grk5	G protein-coupled receptor kinase 5
D01	Mm.10193	NM_011938	Grk6	G protein-coupled receptor kinase 6
D02	Mm.476745	NM_001031667	Gsk3a	Glycogen synthase kinase 3 alpha
D03	Mm.394930	NM_019827	Gsk3b	Glycogen synthase kinase 3 beta
D04	Mm.4716	NM_008308	Htr1a	5-hydroxytryptamine (serotonin) receptor 1A
D05	Mm.445308	NM_010482	Htr1b	5-hydroxytryptamine (serotonin) receptor 1B
D06	Mm.40573	NM_008309	Htr1d	5-hydroxytryptamine (serotonin) receptor 1D
D07	Mm.5040	NM_008310	Htr1f	5-hydroxytryptamine (serotonin) receptor 1F
D08	Mm.214351	NM_172812	Htr2a	5-hydroxytryptamine (serotonin) receptor 2A
D09	Mm.439747	NM_008311	Htr2b	5-hydroxytryptamine (serotonin) receptor 2B

Position	UniGene	GenBank	Symbol	Description
D10	Mm.439670	NM_008312	Htr2c	5-hydroxytryptamine (serotonin) receptor 2C
D11	Mm.4831	NM_013561	Htr3a	5-hydroxytryptamine (serotonin) receptor 3A
D12	Mm.117131	NM_020274	Htr3b	5-hydroxytryptamine (serotonin) receptor 3B
E01	Mm.20440	NM_008313	Htr4	5 hydroxytryptamine (serotonin) receptor 4
E02	Mm.4835	NM_008314	Htr5a	5-hydroxytryptamine (serotonin) receptor 5A
E03	Mm.425211	NM_021358	Htr6	5-hydroxytryptamine (serotonin) receptor 6
E04	Mm.254266	NM_008315	Htr7	5-hydroxytryptamine (serotonin) receptor 7
E05	Mm.227912	NM_010585	Itpr1	Inositol 1,4,5-trisphosphate receptor 1
E06	Mm.21108	NM_173740	Maoa	Monoamine oxidase A
E07	Mm.241656	NM_172778	Maob	Monoamine oxidase B
E08	Mm.196581	NM_011949	Mapk1	Mitogen-activated protein kinase 1
E09	Mm.119	NM_010444	Nr4a1	Nuclear receptor subfamily 4, group A, member 1
E10	Mm.247261	NM_015743	Nr4a3	Nuclear receptor subfamily 4, group A, member 3
E11	Mm.87161	NM_011866	Pde10a	Phosphodiesterase 10A
E12	Mm.191749	NM_183408	Pde4a	Phosphodiesterase 4A, cAMP specific
F01	Mm.20181	NM_019840	Pde4b	Phosphodiesterase 4B, cAMP specific
F02	Mm.255180	NM_201607	Pde4c	Phosphodiesterase 4C, cAMP specific
F03	Mm.434429	NM_011056	Pde4d	Phosphodiesterase 4D, cAMP specific
F04	Mm.6239	NM_018863	Pdyn	Prodynorphin
F05	Mm.260521	NM_008839	Pik3ca	Phosphatidylinositol 3-kinase, catalytic, alpha polypeptide
F06	Mm.101369	NM_020272	Pik3cg	Phosphoinositide-3-kinase, catalytic, gamma polypeptide
F07	Mm.23347	NM_011110	Pla2g5	Phospholipase A2, group V
F08	Mm.330607	NM_019677	Plcb1	Phospholipase C, beta 1
F09	Mm.215156	NM_177568	Plcb2	Phospholipase C, beta 2
F10	Mm.273204	NM_008874	Plcb3	Phospholipase C, beta 3
F11	Mm.45372	NM_144828	Ppp1r1b	Protein phosphatase 1, regulatory (inhibitor) subunit 1B
F12	Mm.19111	NM_008854	Prkaca	Protein kinase, cAMP dependent, catalytic, alpha
G01	Mm.292547	NM_011198	Ptgs2	Prostaglandin-endoperoxide synthase 2
G02	Mm.19301	NM_153054	Slc18a1	Solute carrier family 18 (vesicular monoamine), member 1
G03	Mm.353923	NM_172523	Slc18a2	Solute carrier family 18 (vesicular monoamine), member 2
G04	Mm.41993	NM_010020	Slc6a3	Solute carrier family 6 (neurotransmitter transporter, dopamine), member 3
G05	Mm.300318	NM_010484	Slc6a4	Solute carrier family 6 (neurotransmitter transporter, serotonin), member 4
G06	Mm.17484	NM_009221	Snca	Synuclein, alpha
G07	Mm.292168	NM_026408	Sncaip	Synuclein, alpha interacting protein (synphilin)
G08	Mm.441431	NM_013681	Syn2	Synapsin II
G09	Mm.258622	NM_019911	Tdo2	Tryptophan 2,3-dioxygenase
G10	Mm.1292	NM_009377	Th	Tyrosine hydroxylase
G11	Mm.248684	NM_009414	Tph1	Tryptophan hydroxylase 1
G12	Mm.31597	NM_173391	Tph2	Tryptophan hydroxylase 2
H01	Mm.328431	NM_007393	Actb	Actin, beta
H02	Mm.163	NM_009735	B2m	Beta-2 microglobulin
H03	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H04	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H05	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90 alpha (cytosolic), class B member 1
H06	N/A	SA_00106	MGDC	Mouse 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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