

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

Rat Hypertension

Cat. no. 330231 PARN-037ZA

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 Rat Hypertension RT² Profiler PCR Array profiles the expression of 84 key genes from biological pathways regulating blood vessel constriction and dilation in response to a variety of signals. Essential hypertension, or chronically high arterial blood pressure, remains one of the major risks factors for a variety of cardiovascular diseases and other pathological effects on many organs. Secondary hypertension also results from diabetes and stress from an overactive sympathetic nervous system. Normally, the renin-angiotensin system regulates blood pressure via liver and kidney hormonal signaling to blood vessels. Vascular endothelial cells respond to hormones and nerve impulses by releasing nitric oxide to the surrounding smooth muscles causing their constriction. Endothelial dysfunction, due to dysregulation of any of these pathways, leads to an imbalance in vasoconstriction and vasodilation causing hypertension. Target organs and tissues for hypertension that may be analyzed with this array include the heart, kidney, liver, lung and even biopsies containing capillaries and smooth muscle. A complete expression profile of these genes should serve as an effective tool to unlock the molecular mechanisms governing the onset and progression of hypertension and the resulting cardiovascular diseases. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in hypertension 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	Ace	Ace2	Acta2	Adm	Adra1b	Adra1d	Adrb1	Agt	Agtr1a	Agtr1b	Agtr2	Alox5
B	Arg2	Atp2c1	Atp6ap2	Avp	Avpr1a	Avpr1b	Bdkrb1	Bdkrb2	Bmpr2	Cacna1c	Calca	Cav1
C	Chrna1	Chrb1	Clic1	Clic4	Clic5	Cnga1	Cnga2	Cnga3	Cnga4	Cngb1	Cps1	Drd3
D	Drd5	Ece1	Edn1	Edn2	Ednra	Ednrb	Ephx2	Gch1	Gchfr	Gucy1a3	Gucy1b3	Hif1a
E	Ilpr1	Ilpr2	Ilpr3	Kcnj8	Kcnma1	Mylk	Mylk2	Mylk3	Nos3	Nosip	Nostrin	Nppb
F	Nppc	Npr1	Npy1r	P2rx4	Pde3a	Pde3b	Pde5a	Plcg1	Plcg2	Prkg1	Prkg2	Ptgir
G	Ptgs1	Ptgs2	Ren	S1pr1	Scnn1a	Scnn1b	Scnn1g	Slc7a1	Sphk1	Sphk2	Uts2	Uts2r
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.10149	NM_012544	Ace	Angiotensin I converting enzyme (peptidyl-dipeptidase A) 1
A02	Rn.129779	NM_001012006	Ace2	Angiotensin I converting enzyme (peptidyl-dipeptidase A) 2
A03	Rn.195319	NM_031004	Acta2	Smooth muscle alpha-actin
A04	Rn.10232	NM_012715	Adm	Adrenomedullin
A05	Rn.10032	NM_016991	Adra1b	Adrenergic, alpha-1B-, receptor
A06	Rn.11314	NM_024483	Adra1d	Adrenergic, alpha-1D-, receptor
A07	Rn.87064	NM_012701	Adrb1	Adrenergic, beta-1-, receptor
A08	Rn.6319	NM_134432	Agt	Angiotensinogen (serpin peptidase inhibitor, clade A, member 8)
A09	Rn.9814	NM_030985	Agtr1a	Angiotensin II receptor, type 1a
A10	Rn.9815	NM_031009	Agtr1b	Angiotensin II receptor, type 1b
A11	Rn.162367	NM_012494	Agtr2	Angiotensin II receptor, type 2
A12	Rn.9662	NM_012822	Alox5	Arachidonate 5-lipoxygenase
B01	Rn.11055	NM_019168	Arg2	Arginase type II
B02	Rn.5805	NM_131907	Atp2c1	ATPase, Ca++ transporting, type 2C, member 1
B03	Rn.12944	XM_217592	Atp6ap2	ATPase, H+ transporting, lysosomal accessory protein 2
B04	Rn.9976	NM_016992	Avp	Arginine vasopressin
B05	Rn.32282	NM_053019	Avpr1a	Arginine vasopressin receptor 1A
B06	Rn.10096	NM_017205	Avpr1b	Arginine vasopressin receptor 1B
B07	Rn.10762	NM_030851	Bdkrb1	Bradykinin receptor B1
B08	Rn.9845	NM_173100	Bdkrb2	Bradykinin receptor B2
B09	Rn.59276	NM_080407	Bmpr2	Bone morphogenetic protein receptor, type II (serine/threonine kinase)
B10	Rn.9827	NM_012517	Cacna1c	Calcium channel, voltage-dependent, L type, alpha 1C subunit
B11	Rn.90085	NM_017338	Calca	Calcitonin-related polypeptide alpha
B12	Rn.22518	NM_031556	Cav1	Caveolin 1, caveolae protein
C01	Rn.44633	NM_024485	Chrna1	Cholinergic receptor, nicotinic, alpha 1 (muscle)
C02	Rn.44611	NM_012528	Chrb1	Cholinergic receptor, nicotinic, beta 1 (muscle)
C03	Rn.203139	NM_001002807	Clic1	Chloride intracellular channel 1
C04	Rn.162115	NM_031818	Clic4	Chloride intracellular channel 4
C05	Rn.1838	NM_053603	Clic5	Chloride intracellular channel 5
C06	Rn.54534	NM_053497	Cnga1	Cyclic nucleotide gated channel alpha 1
C07	Rn.10384	NM_012928	Cnga2	Cyclic nucleotide gated channel alpha 2
C08	Rn.10886	NM_053495	Cnga3	Cyclic nucleotide gated channel alpha 3
C09	Rn.91104	NM_053496	Cnga4	Cyclic nucleotide gated channel alpha 4
C10	Rn.10733	NM_031809	Cngb1	Cyclic nucleotide gated channel beta 1
C11	Rn.53968	NM_017072	Cps1	Carbamoyl-phosphate synthetase 1
C12	Rn.10356	NM_017140	Drd3	Dopamine receptor D3
D01	Rn.138110	NM_012768	Drd5	Dopamine receptor D5
D02	Rn.7000	NM_053596	Ece1	Endothelin converting enzyme 1
D03	Rn.10918	NM_012548	Edn1	Endothelin 1
D04	Rn.10642	NM_012549	Edn2	Endothelin 2
D05	Rn.10915	NM_012550	Ednra	Endothelin receptor type A
D06	Rn.11412	NM_017333	Ednrb	Endothelin receptor type B
D07	Rn.54495	NM_022936	Ephx2	Epoxide hydrolase 2, cytoplasmic
D08	Rn.28195	NM_024356	Gch1	GTP cyclohydrolase 1
D09	Rn.11137	NM_133595	Gchfr	GTP cyclohydrolase I feedback regulator

Position	UniGene	GenBank	Symbol	Description
D10	Rn.1974	NM_017090	Gucy1a3	Guanylate cyclase 1, soluble, alpha 3
D11	Rn.87228	NM_012769	Gucy1b3	Guanylate cyclase 1, soluble, beta 3
D12	Rn.10852	NM_024359	Hif1a	Hypoxia-inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor)
E01	Rn.2135	NM_001007235	Itpr1	Inositol 1,4,5-triphosphate receptor, type 1
E02	Rn.89152	NM_031046	Itpr2	Inositol 1,4,5-triphosphate receptor, type 2
E03	Rn.11242	NM_013138	Itpr3	Inositol 1,4,5-triphosphate receptor, type 3
E04	Rn.118306	NM_017099	Kcnj8	Potassium inwardly-rectifying channel, subfamily J, member 8
E05	Rn.30616	NM_031838	Kcna1	Potassium large conductance calcium-activated channel, subfamily M, alpha member 1
E06	Rn.203004	NM_001105874	Mylk	Myosin light chain kinase
E07	Rn.81191	NM_057209	Mylk2	Myosin light chain kinase 2
E08	Rn.204358	NM_001110810	Mylk3	Myosin light chain kinase 3
E09	Rn.44265	NM_021838	Nos3	Nitric oxide synthase 3, endothelial cell
E10	Rn.146210	NM_001106260	Nosip	Nitric oxide synthase interacting protein
E11	Rn.39383	NM_001024260	Nostrin	Nitric oxide synthase trafficker
E12	Rn.3835	NM_031545	Nppb	Natriuretic peptide precursor B
F01	Rn.10637	NM_053750	Nppc	Natriuretic peptide precursor C
F02	Rn.10463	NM_012613	Npr1	Natriuretic peptide receptor A/guanylate cyclase A (atrionatriuretic peptide receptor A)
F03	Rn.11642	NM_001113357	Npy1r	Neuropeptide Y receptor Y1
F04	Rn.7176	NM_031594	P2rx4	Purinergic receptor P2X, ligand-gated ion channel 4
F05	Rn.44403	NM_017337	Pde3a	Phosphodiesterase 3A, cGMP inhibited
F06	Rn.10322	NM_017229	Pde3b	Phosphodiesterase 3B, cGMP-inhibited
F07	Rn.10861	NM_133584	Pde5a	Phosphodiesterase 5A, cGMP-specific
F08	Rn.11243	NM_013187	Plcg1	Phospholipase C, gamma 1
F09	Rn.9751	NM_017168	Plcg2	Phospholipase C, gamma 2
F10	Rn.204724	NM_001105731	Prkg1	Protein kinase, cGMP-dependent, type 1
F11	Rn.87721	NM_013012	Prkg2	Protein kinase, cGMP-dependent, type II
F12	Rn.100903	NM_001077644	Ptgir	Prostaglandin I2 (prostacyclin) receptor (IP)
G01	Rn.44404	NM_017043	Ptgs1	Prostaglandin-endoperoxide synthase 1
G02	Rn.44369	NM_017232	Ptgs2	Prostaglandin-endoperoxide synthase 2
G03	Rn.9831	NM_012642	Ren	Renin
G04	Rn.109455	NM_017301	S1pr1	Sphingosine-1-phosphate receptor 1
G05	Rn.9808	NM_031548	Scnn1a	Sodium channel, nonvoltage-gated 1 alpha
G06	Rn.9807	NM_012648	Scnn1b	Sodium channel, nonvoltage-gated 1, beta
G07	Rn.10360	NM_017046	Scnn1g	Sodium channel, nonvoltage-gated 1, gamma
G08	Rn.9439	NM_013111	Slc7a1	Solute carrier family 7 (cationic amino acid transporter, y+ system), member 1
G09	Rn.18522	NM_133386	Sphk1	Sphingosine kinase 1
G10	Rn.41053	NM_001012066	Sphk2	Sphingosine kinase 2
G11	Rn.48886	NM_019160	Uts2	Urotensin 2
G12	Rn.44230	NM_020537	Uts2r	Urotensin 2 receptor
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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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