

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

Human Polycystic Kidney Disease

Cat. no. 330231 PAHS-168ZA

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 Human Polycystic Kidney Disease RT² Profiler PCR Array profiles the expression of 84 key genes involved in growth of renal cysts, which often lead to end-stage renal disease. Polycystic kidney diseases (PKDs) represent a large group of progressive renal disorders characterized by cystic expansion of the kidneys resulting in progressive kidney enlargement and renal insufficiency. The most common PKDs are inherited as either autosomal dominant or autosomal recessive traits. Studies of autosomal dominant and recessive PKDs converge on molecular mechanisms of cystogenesis, including ciliary abnormalities and intracellular calcium dysregulation that ultimately lead to increased proliferation, apoptosis, and dedifferentiation. Recent advances in understanding the role of signaling molecules, (such as cyclic AMP, calcium, integrins, and bone morphogenetic proteins), as well as angiogenic, differentiation, and mitogenic factors in renal cystogenesis and dysfunction have led to intriguing possibilities for therapeutic intervention. The genes profiled with this array are associated with angiogenic, mitogenic, and inflammatory responses and factors responsible for calcium signaling, primary cilia function, and transcriptional regulation among others. A set of controls present on each array enables data analysis using the $\Delta\Delta\text{CT}$ method of relative quantification and assessment of reverse transcription performance, genomic DNA contamination, and PCR performance. Using real-time PCR, research studies can easily and reliably analyze the expression of a focused panel of genes involved in polycystic kidney disease 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	ACY1	ADCY2	ADCY3	ADCY7	AGXT2	ALDH8A1	ANGPT2	APOE	APOM	BCL2L1	BMP2	BMP4
B	BMP7	CFD	CLCNKA	CLDN10	CLU	COL12A1	COL3A1	CREBBP	CXCL1	CYP8B1	CYS1	DAPL1
C	DNAH5	DPEP1	EDN1	EGR3	FBLN1	FGF1	FGFR3	FN1	FOSB	GLI2	GREM1	HGD
D	HRG	HSD11B2	IFT88	IGF1R	IL17D	IL6	IL8	ITGA8	JUN	KNG1	LGALS3	MIOX
E	NAPSA	NOG	NRG1	NRP2	NTRK3	OSR2	P2RX7	PCDH7	PCK1	PDGFRA	PIK3CA	PIK3R1
F	PKD1	PKD2	PKHD1	PRKCB	PRLR	PTGER2	PTGER3	PTGS2	PTRZ1	RET	RHOA	SCN5A
G	SLC26A7	SLC2A9	SLC5A10	SPRY1	TGFB3	TMEM27	TPM1	UMOD	VEGFA	VGLL3	WNT11	WT1
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.334707	NM_000666	ACY1	Aminoacylase 1
A02	Hs.481545	NM_020546	ADCY2	Adenylate cyclase 2 (brain)
A03	Hs.708074	NM_004036	ADCY3	Adenylate cyclase 3
A04	Hs.513578	NM_001114	ADCY7	Adenylate cyclase 7
A05	Hs.34494	NM_031900	AGXT2	Alanine--glyoxylate aminotransferase 2
A06	Hs.486520	NM_022568	ALDH8A1	Aldehyde dehydrogenase 8 family, member A1
A07	Hs.583870	NM_001147	ANGPT2	Angiotensinogen 2
A08	Hs.654439	NM_000041	APOE	Apolipoprotein E
A09	Hs.534468	NM_019101	APOM	Apolipoprotein M
A10	Hs.516966	NM_138578	BCL2L1	BCL2-like 1
A11	Hs.73853	NM_001200	BMP2	Bone morphogenetic protein 2
A12	Hs.68879	NM_130851	BMP4	Bone morphogenetic protein 4
B01	Hs.473163	NM_001719	BMP7	Bone morphogenetic protein 7
B02	Hs.155597	NM_001928	CFD	Complement factor D (adipsin)
B03	Hs.591533	NM_004070	CLCNKA	Chloride channel Ka
B04	Hs.534377	NM_182848	CLDN10	Claudin 10
B05	Hs.436657	NM_001831	CLU	Clusterin
B06	Hs.101302	NM_004370	COL12A1	Collagen, type XII, alpha 1
B07	Hs.443625	NM_000090	COL3A1	Collagen, type III, alpha 1
B08	Hs.459759	NM_004380	CREBBP	CREB binding protein
B09	Hs.789	NM_001511	CXCL1	Chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)
B10	Hs.447793	NM_004391	CYP8B1	Cytochrome P450, family 8, subfamily B, polypeptide 1
B11	Hs.27092	NM_001037160	CYS1	Cystin 1
B12	Hs.59761	NM_001017920	DAPL1	Death associated protein-like 1
C01	Hs.212360	NM_001369	DNAH5	Dynein, axonemal, heavy chain 5
C02	Hs.109	NM_004413	DPEP1	Dipeptidase 1 (renal)
C03	Hs.511899	NM_001955	EDN1	Endothelin 1
C04	Hs.534313	NM_004430	EGR3	Early growth response 3
C05	Hs.24601	NM_001996	FBLN1	Fibulin 1
C06	Hs.483635	NM_000800	FGF1	Fibroblast growth factor 1 (acidic)
C07	Hs.1420	NM_000142	FGFR3	Fibroblast growth factor receptor 3
C08	Hs.203717	NM_002026	FN1	Fibronectin 1
C09	Hs.590958	NM_006732	FOSB	FBJ murine osteosarcoma viral oncogene homolog B
C10	Hs.111867	NM_005270	GLI2	GLI family zinc finger 2
C11	Hs.40098	NM_013372	GREM1	Gremlin 1
C12	Hs.616526	NM_000187	HGD	Homogentisate 1,2-dioxygenase
D01	Hs.1498	NM_000412	HRG	Histidine-rich glycoprotein
D02	Hs.1376	NM_000196	HSD11B2	Hydroxysteroid (11-beta) dehydrogenase 2
D03	Hs.187376	NM_175605	IFT88	Intraflagellar transport 88 homolog (Chlamydomonas)
D04	Hs.643120	NM_000875	IGF1R	Insulin-like growth factor 1 receptor
D05	Hs.655142	NM_138284	IL17D	Interleukin 17D
D06	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
D07	Hs.624	NM_000584	IL8	Interleukin 8
D08	Hs.171311	NM_003638	ITGA8	Integrin, alpha 8
D09	Hs.714791	NM_002228	JUN	Jun proto-oncogene

Position	UniGene	GenBank	Symbol	Description
D10	Hs.77741	NM_000893	KNG1	Kininogen 1
D11	Hs.531081	NM_002306	LGALS3	Lectin, galactoside-binding, soluble, 3
D12	Hs.129227	NM_017584	MIOX	Myo-inositol oxygenase
E01	Hs.714418	NM_004851	NAPSA	Napsin A aspartic peptidase
E02	Hs.248201	NM_005450	NOG	Noggin
E03	Hs.453951	NM_013957	NRG1	Neuregulin 1
E04	Hs.471200	NM_003872	NRP2	Neuropilin 2
E05	Hs.410969	NM_002530	NTRK3	Neurotrophic tyrosine kinase, receptor, type 3
E06	Hs.253247	NM_053001	OSR2	Odd-skipped related 2 (Drosophila)
E07	Hs.729169	NM_002562	P2RX7	Purinergic receptor P2X, ligand-gated ion channel, 7
E08	Hs.479439	NM_002589	PCDH7	Protocadherin 7
E09	Hs.1872	NM_002591	PKC1	Phosphoenolpyruvate carboxykinase 1 (soluble)
E10	Hs.74615	NM_006206	PDGFRA	Platelet-derived growth factor receptor, alpha polypeptide
E11	Hs.553498	NM_006218	PIK3CA	Phosphoinositide-3-kinase, catalytic, alpha polypeptide
E12	Hs.132225	NM_181504	PIK3R1	Phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
F01	Hs.75813	NM_000296	PKD1	Polycystic kidney disease 1 (autosomal dominant)
F02	Hs.181272	NM_000297	PKD2	Polycystic kidney disease 2 (autosomal dominant)
F03	Hs.662050	NM_138694	PKHD1	Polycystic kidney and hepatic disease 1 (autosomal recessive)
F04	Hs.460355	NM_002738	PRKCB	Protein kinase C, beta
F05	Hs.368587	NM_000949	PRLR	Prolactin receptor
F06	Hs.2090	NM_000956	PTGER2	Prostaglandin E receptor 2 (subtype EP2), 53kDa
F07	Hs.445000	NM_198715	PTGER3	Prostaglandin E receptor 3 (subtype EP3)
F08	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
F09	Hs.489824	NM_002851	PTPRZ1	Protein tyrosine phosphatase, receptor-type, Z polypeptide 1
F10	Hs.350321	NM_020630	RET	Ret proto-oncogene
F11	Hs.247077	NM_001664	RHOA	Ras homolog gene family, member A
F12	Hs.517898	NM_000335	SCN5A	Sodium channel, voltage-gated, type V, alpha subunit
G01	Hs.354013	NM_052832	SLC26A7	Solute carrier family 26, member 7
G02	Hs.656895	NM_020041	SLC2A9	Solute carrier family 2 (facilitated glucose transporter), member 9
G03	Hs.462418	NM_152351	SLC5A10	Solute carrier family 5 (sodium/glucose cotransporter), member 10
G04	Hs.436944	NM_005841	SPRY1	Sprouty homolog 1, antagonist of FGF signaling (Drosophila)
G05	Hs.592317	NM_003239	TGFB3	Transforming growth factor, beta 3
G06	Hs.129614	NM_020665	TMEM27	Transmembrane protein 27
G07	Hs.133892	NM_000366	TPM1	Tropomyosin 1 (alpha)
G08	Hs.654425	NM_003361	UMOD	Uromodulin
G09	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
G10	Hs.435013	NM_016206	VGLL3	Vestigial like 3 (Drosophila)
G11	Hs.108219	NM_004626	WNT11	Wingless-type MMTV integration site family, member 11
G12	Hs.591980	NM_000378	WT1	Wilms tumor 1
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human 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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