

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

Human Primary Cilia

Cat. no. 330231 PAHS-127ZA

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 Primary Cilia RT² Profiler PCR Array profiles the expression of 84 key genes important for ciliary organization and maintenance. The single primary cilium found on the surface of almost all mammalian cell types is a non-motile sensory organelle with a 9+0 microtubule formation. Mutations in key ciliary proteins have been recently linked to multiple diseases such as polycystic kidney disease (PKD) and Bardet-Biedl Syndrome (BBS), collectively called ciliopathies. The pathological mutations occur in genes necessary for cilia morphogenesis or maintenance via intraflagellar transport (IFT), disrupting primary cilia function. These discoveries provided the necessary biological significance to increase scientific interest and research in primary cilia. Recent studies suggest that primary cilia regulate the cell cycle, giving them a potential role in carcinogenesis. These organelles also coordinate with multiple signaling pathways such as Hedgehog, WNT and mTOR, although extensive research has not yet explained their connection with many disease phenotypes. This array contains genes important for signaling pathways central to ciliary function as well as genes important in cilia morphogenesis and maintenance. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in primary cilia function 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	ADCY3	ADCY7	AHI1	AKT1	ALMS1	ARL13B	ARL6	AVPR2	AXIN2	BBS1	BBS2	BBS4
B	BBS7	BTRC	CC2D2A	CCND1	CDC42	CDK5RAP2	CDKN1A	Cep290	DVL1	DYNC2L1	FAT4	FJX1
C	FOS	FUZ	FZD1	GLI1	GLI2	GLI3	GLIS2	GSK3B	HNF1B	HTR6	IFT172	IFT20
D	IFT74	IFT80	IFT88	IGF1	IHH	INS	INTU	INVS	IQCB1	ITGB1	KIF3A	KIF3B
E	KRAS	LRP2	MAP2K1	MAPK1	MKS5	MKS1	MOS	MTOR	NEK8	NPHP1	NPHP3	OFD1
F	PDGFRA	PIK3CA	PKD1	PKD2	PKHD1	PRKCA	PTCH1	PTPN5	RAB23	RHOA	ROCK2	RPGRIP1L
G	SHH	SMO	SSTR3	SUFU	TMEM67	TP53	TSC1	TSC2	TTC8	VANGL2	WNT9B	WWTR1
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.708074	NM_004036	ADCY3	Adenylate cyclase 3
A02	Hs.513578	NM_001114	ADCY7	Adenylate cyclase 7
A03	Hs.386684	NM_017651	AHI1	Abelson helper integration site 1
A04	Hs.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
A05	Hs.184720	NM_015120	ALMS1	Alstrom syndrome 1
A06	Hs.533086	NM_182896	ARL13B	ADP-ribosylation factor-like 13B
A07	Hs.373801	NM_177976	ARL6	ADP-ribosylation factor-like 6
A08	Hs.567240	NM_000054	AVPR2	Arginine vasopressin receptor 2
A09	Hs.156527	NM_004655	AXIN2	Axin 2
A10	Hs.502915	NM_024649	BBS1	Bardet-Biedl syndrome 1
A11	Hs.333738	NM_031885	BBS2	Bardet-Biedl syndrome 2
A12	Hs.208681	NM_033028	BBS4	Bardet-Biedl syndrome 4
B01	Hs.591694	NM_176824	BBS7	Bardet-Biedl syndrome 7
B02	Hs.643802	NM_033637	BTRC	Beta-transducin repeat containing
B03	Hs.590928	NM_001080522	CC2D2A	Coiled-coil and C2 domain containing 2A
B04	Hs.523852	NM_053056	CCND1	Cyclin D1
B05	Hs.690198	NM_001791	CDC42	Cell division cycle 42 (GTP binding protein, 25kDa)
B06	Hs.269560	NM_018249	CDK5RAP2	CDK5 regulatory subunit associated protein 2
B07	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B08	Hs.150444	NM_025114	Cep290	Centrosomal protein 290kDa
B09	Hs.74375	NM_004421	DVL1	Dishevelled, dsh homolog 1 (Drosophila)
B10	Hs.371597	NM_015522	DYNC2L1	Dynein, cytoplasmic 2, light intermediate chain 1
B11	Hs.702217	NM_024582	FAT4	FAT tumor suppressor homolog 4 (Drosophila)
B12	Hs.39384	NM_014344	FJX1	Four jointed box 1 (Drosophila)
C01	Hs.728789	NM_005252	FOS	FBJ murine osteosarcoma viral oncogene homolog
C02	Hs.288800	NM_025129	FUZ	Fuzzy homolog (Drosophila)
C03	Hs.94234	NM_003505	FZD1	Frizzled family receptor 1
C04	Hs.632702	NM_005269	GLI1	GLI family zinc finger 1
C05	Hs.111867	NM_005270	GLI2	GLI family zinc finger 2
C06	Hs.21509	NM_000168	GLI3	GLI family zinc finger 3
C07	Hs.592087	NM_032575	GLIS2	GLIS family zinc finger 2
C08	Hs.445733	NM_002093	GSK3B	Glycogen synthase kinase 3 beta
C09	Hs.191144	NM_000458	HNF1B	HNF1 homeobox B
C10	Hs.22180	NM_000871	HTR6	5-hydroxytryptamine (serotonin) receptor 6
C11	Hs.127401	NM_015662	IFT172	Intraflagellar transport 172 homolog (Chlamydomonas)
C12	Hs.705431	NM_174887	IFT20	Intraflagellar transport 20 homolog (Chlamydomonas)
D01	Hs.145402	NM_025103	IFT74	Intraflagellar transport 74 homolog (Chlamydomonas)
D02	Hs.478095	NM_020800	IFT80	Intraflagellar transport 80 homolog (Chlamydomonas)
D03	Hs.187376	NM_175605	IFT88	Intraflagellar transport 88 homolog (Chlamydomonas)
D04	Hs.160562	NM_000618	IGF1	Insulin-like growth factor 1 (somatomedin C)
D05	Hs.654504	NM_002181	IHH	Indian hedgehog
D06	Hs.654579	NM_000207	INS	Insulin
D07	Hs.391481	NM_015693	INTU	Inturned planar cell polarity effector homolog (Drosophila)
D08	Hs.558477	NM_183245	INVS	Inversin
D09	Hs.604110	NM_001023570	IQCB1	IQ motif containing B1

Position	UniGene	GenBank	Symbol	Description
D10	Hs.643813	NM_002211	ITGB1	Integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)
D11	Hs.43670	NM_007054	KIF3A	Kinesin family member 3A
D12	Hs.369670	NM_004798	KIF3B	Kinesin family member 3B
E01	Hs.505033	NM_004985	KRAS	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
E02	Hs.657729	NM_004525	LRP2	Low density lipoprotein receptor-related protein 2
E03	Hs.145442	NM_002755	MAP2K1	Mitogen-activated protein kinase kinase 1
E04	Hs.431850	NM_002745	MAPK1	Mitogen-activated protein kinase 1
E05	Hs.472119	NM_018848	MKKS	McKusick-Kaufman syndrome
E06	Hs.408843	NM_017777	MKS1	Meckel syndrome, type 1
E07	Hs.533432	NM_005372	MOS	V-mos Moloney murine sarcoma viral oncogene homolog
E08	Hs.338207	NM_004958	MTOR	Mechanistic target of rapamycin (serine/threonine kinase)
E09	Hs.448468	NM_178170	NEK8	NIMA (never in mitosis gene a)- related kinase 8
E10	Hs.280388	NM_000272	NPHP1	Nephronophthisis 1 (juvenile)
E11	Hs.511991	NM_153240	NPHP3	Nephronophthisis 3 (adolescent)
E12	Hs.6483	NM_003611	OFD1	Oral-facial-digital syndrome 1
F01	Hs.74615	NM_006206	PDGFRA	Platelet-derived growth factor receptor, alpha polypeptide
F02	Hs.553498	NM_006218	PIK3CA	Phosphoinositide-3-kinase, catalytic, alpha polypeptide
F03	Hs.75813	NM_000296	PKD1	Polycystic kidney disease 1 (autosomal dominant)
F04	Hs.181272	NM_000297	PKD2	Polycystic kidney disease 2 (autosomal dominant)
F05	Hs.662050	NM_138694	PKHD1	Polycystic kidney and hepatic disease 1 (autosomal recessive)
F06	Hs.531704	NM_002737	PRKCA	Protein kinase C, alpha
F07	Hs.494538	NM_000264	PTCH1	Patched 1
F08	Hs.79092	NM_032781	PTPN5	Protein tyrosine phosphatase, non-receptor type 5 (striatum-enriched)
F09	Hs.555016	NM_183227	RAB23	RAB23, member RAS oncogene family
F10	Hs.247077	NM_001664	RHOA	Ras homolog gene family, member A
F11	Hs.591600	NM_004850	ROCK2	Rho-associated, coiled-coil containing protein kinase 2
F12	Hs.298382	NM_015272	RPGRIP1L	RPGRIP1-like
G01	Hs.164537	NM_000193	SHH	Sonic hedgehog
G02	Hs.437846	NM_005631	SMO	Smoothed, frizzled family receptor
G03	Hs.225995	NM_001051	SSTR3	Somatostatin receptor 3
G04	Hs.404089	NM_016169	SUFU	Suppressor of fused homolog (Drosophila)
G05	Hs.116240	NM_153704	TMEM67	Transmembrane protein 67
G06	Hs.654481	NM_000546	TP53	Tumor protein p53
G07	Hs.370854	NM_000368	TSC1	Tuberous sclerosis 1
G08	Hs.90303	NM_000548	TSC2	Tuberous sclerosis 2
G09	Hs.303055	NM_198309	TTC8	Tetratricopeptide repeat domain 8
G10	Hs.99477	NM_020335	VANGL2	Vang-like 2 (van gogh, Drosophila)
G11	Hs.326420	NM_003396	WNT9B	Wingless-type MMTV integration site family, member 9B
G12	Hs.477921	NM_015472	WWTR1	WW domain containing transcription regulator 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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