

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

Rat Primary Cilia

Cat. no. 330231 PARN-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 Rat 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	Ccnd1	Cdc42	Cdk5rap2	Cdkn1a	Dvl1	Dync2li1	Fjx1	Fos	Fuz	Fzd1
C	Gli1	Gli2	Gli3	Glis2	Gsk3b	Hnf1b	Htr6	Htr7	Ifi172	Ifi20	Ifi57	Ifi74
D	Ifi80	Ifi88	Igf1	Ilhh	Ins2	Invs	Iqcb1	Irs1	Itgb1	Kif3a	Kif3b	Kras
E	Lrp2	Map2k1	Map2k2	Mapk1	Mkks	Mks1	Mos	Mtor	Nek8	Nph1	Ofd1	Pdgfra
F	Plk3ca	Pkd1	Pkd2	Prkca	Ptch1	Ptpn5	Rab23	Rhoa	Rock2	Rpgrip11	Shh	Smo
G	Satr3	Sufu	Tmem67	Tp53	Tsc1	Tsc2	Ttc8	Vangl2	Vegfa	Wnt9b	Wwtr1	Ywhaq
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.87800	NM_130779	Adcy3	Adenylate cyclase 3
A02	Rn.161712	NM_053396	Adcy7	Adenylate cyclase 7
A03	Rn.205875	NM_001002277	Ahi1	Abelson helper integration site 1
A04	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A05	Rn.206881	NM_001106604	Alms1	Alstrom syndrome 1 homolog (human)
A06	Rn.30700	NM_001107101	Arl13b	ADP-ribosylation factor-like 13B
A07	Rn.101944	NM_001108842	Arl6	ADP-ribosylation factor-like 6
A08	Rn.209041	NM_019136	Avpr2	Arginine vasopressin receptor 2
A09	Rn.162212	NM_024355	Axin2	Axin 2
A10	Rn.12497	NM_001107569	Bbs1	Bardet-Biedl syndrome 1
A11	Rn.15987	NM_053618	Bbs2	Bardet-Biedl syndrome 2
A12	Rn.25002	NM_001106826	Bbs4	Bardet-Biedl syndrome 4
B01	Rn.28442	NM_001012180	Bbs7	Bardet-Biedl syndrome 7
B02	Rn.21800	NM_001007148	Btrc	Beta-transducin repeat containing
B03	Rn.22279	NM_171992	Ccnd1	Cyclin D1
B04	Rn.60067	NM_171994	Cdc42	Cell division cycle 42 (GTP binding protein)
B05	Rn.13247	XM_575844	Cdk5rap2	CDK5 regulatory subunit associated protein 2
B06	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B07	Rn.144610	NM_031820	Dvl1	Dishevelled, dsh homolog 1 (Drosophila)
B08	Rn.221917	NM_001013940	Dync2li1	Dynein cytoplasmic 2 light intermediate chain 1
B09	Rn.93503	NM_001108955	Fjx1	Four jointed box 1 (Drosophila)
B10	Rn.103750	NM_022197	Fos	FBJ osteosarcoma oncogene
B11	Rn.136607	NM_001037646	Fuz	Fuzzy homolog (Drosophila)
B12	Rn.6575	NM_021266	Fzd1	Frizzled homolog 1 (Drosophila)
C01	Rn.219157	XM_345832	Gli1	GLI family zinc finger 1
C02	Rn.38778	NM_001107169	Gli2	GLI family zinc finger 2
C03	Rn.199034	NM_080405	Gli3	GLI-Kruppel family member GLI3
C04	Rn.166996	NM_001106978	Glis2	GLIS family zinc finger 2
C05	Rn.10426	NM_032080	Gsk3b	Glycogen synthase kinase 3 beta
C06	Rn.11342	NM_013103	Hnf1b	HNF1 homeobox B
C07	Rn.10552	NM_024365	Htr6	5-hydroxytryptamine (serotonin) receptor 6
C08	Rn.87132	NM_022938	Htr7	5-hydroxytryptamine (serotonin) receptor 7
C09	Rn.171849	NM_053792	Ifi172	Intraflagellar transport 172 homolog (Chlamydomonas)
C10	Rn.8370	NM_001105815	Ifi20	Intraflagellar transport 20 homolog (Chlamydomonas)
C11	Rn.63846	NM_001107093	Ifi57	Intraflagellar transport 57 homolog (Chlamydomonas)
C12	Rn.15267	NM_001007001	Ifi74	Intraflagellar transport 74 homolog (Chlamydomonas)
D01	Rn.6742	NM_001013911	Ifi80	Intraflagellar transport 80 homolog (Chlamydomonas)
D02	Rn.132110	NM_001107266	Ifi88	Intraflagellar transport 88 homolog (Chlamydomonas)
D03	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
D04	Rn.8711	NM_053384	Ilhh	Indian hedgehog
D05	Rn.989	NM_019130	Ins2	Insulin 2
D06	Rn.166430	NM_001107932	Invs	Inversin
D07	Rn.107714	NM_001107092	Iqcb1	IQ motif containing B1
D08	Rn.10476	NM_012969	Irs1	Insulin receptor substrate 1
D09	Rn.25733	NM_017022	Itgb1	Integrin, beta 1

Position	UniGene	GenBank	Symbol	Description
D10	Rn.47400	NM_053377	Kif3a	Kinesin family member 3a
D11	Rn.41581	NM_001106529	Kif3b	Kinesin family member 3B
D12	Rn.24554	NM_031515	Kras	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
E01	Rn.26430	NM_030827	Lrp2	Low density lipoprotein-related protein 2
E02	Rn.5850	NM_031643	Map2k1	Mitogen activated protein kinase kinase 1
E03	Rn.82693	NM_133283	Map2k2	Mitogen activated protein kinase kinase 2
E04	Rn.34914	NM_053842	Mapk1	Mitogen activated protein kinase 1
E05	Rn.8839	NM_001008353	Mkks	McKusick-Kaufman syndrome
E06	Rn.198890	NM_001034917	Mks1	Meckel syndrome, type 1
E07	Rn.10341	NM_020102	Mos	Moloney sarcoma oncogene
E08	Rn.11008	NM_019906	Mtor	Mechanistic target of rapamycin (serine/threonine kinase)
E09	Rn.144705	NM_001105804	Nek8	NIMA (never in mitosis gene a)- related kinase 8
E10	Rn.162718	NM_001106506	Nphp1	Nephronophthisis 1 (juvenile) homolog (human)
E11	Rn.39019	NM_001106961	Ofd1	Oral-facial-digital syndrome 1 gene homolog (human)
E12	Rn.55127	NM_012802	Pdgfra	Platelet derived growth factor receptor, alpha polypeptide
F01	Rn.44193	NM_133399	Pik3ca	Phosphoinositide-3-kinase, catalytic, alpha polypeptide
F02	Rn.127770	XM_002724589	Pkd1	Polycystic kidney disease 1 homolog (human)
F03	Rn.198353	XM_573552	Pkd2	Polycystic kidney disease 2
F04	Rn.207908	NM_001105713	Prkca	Protein kinase C, alpha
F05	Rn.105585	NM_053566	Ptch1	Patched homolog 1 (Drosophila)
F06	Rn.10618	NM_019253	Ptpn5	Protein tyrosine phosphatase, non-receptor type 5
F07	Rn.24441	NM_001109005	Rab23	RAB23, member RAS oncogene family
F08	Rn.107401	NM_057132	Rhoa	Ras homolog gene family, member A
F09	Rn.88642	NM_013022	Rock2	Rho-associated coiled-coil containing protein kinase 2
F10	Rn.55934	NM_001107414	Rpgrip1l	Rpgrip1-like
F11	Rn.10432	NM_017221	Shh	Sonic hedgehog
F12	Rn.44429	NM_012807	Smo	Smoothed homolog (Drosophila)
G01	Rn.10458	NM_133522	Sstr3	Somatostatin receptor 3
G02	Rn.211670	NM_001024899	Sufu	Suppressor of fused homolog (Drosophila)
G03	Rn.72665	NM_001107916	Tmem67	Transmembrane protein 67
G04	Rn.54443	NM_030989	Tp53	Tumor protein p53
G05	Rn.205837	NM_021854	Tsc1	Tuberous sclerosis 1
G06	Rn.5875	NM_012680	Tsc2	Tuberous sclerosis 2
G07	Rn.14768	NM_001106752	Ttc8	Tetratricopeptide repeat domain 8
G08	Rn.198958	NM_001105969	Vangl2	Vang-like 2 (van gogh, Drosophila)
G09	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G10	Rn.16625	NM_001107055	Wnt9b	Wingless-type MMTV integration site family, member 9B
G11	Rn.9622	NM_001024869	Wwtr1	WW domain containing transcription regulator 1
G12	Rn.2502	NM_013053	Ywhaq	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide
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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