

# RT<sup>2</sup> Profiler PCR Array (Rotor-Gene® Format)

## Mouse Primary Cilia

Cat. no. 330231 PAMM-127ZR

For pathway expression analysis

Format	For use with the following real-time cyclers
RT <sup>2</sup> Profiler PCR Array, Format R	Rotor-Gene Q, other Rotor-Gene cyclers

### Description

The Mouse Primary Cilia RT<sup>2</sup> 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 *RT<sup>2</sup> Profiler PCR Array Handbook*.

### Shipping and storage

RT<sup>2</sup> Profiler PCR Arrays in the Rotor-Gene format are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products.

For long term storage, keep plates at –20°C.

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**Note:** Ensure that you have the correct RT<sup>2</sup> Profiler PCR Array format for your real-time cycler (see table above).

**Note:** Open the package and store the products appropriately immediately on receipt.



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Sample & Assay Technologies

## Array layout

The 96 real-time assays in the Rotor-Gene format are located in wells 1–96 of the Rotor-Disc™ (plate A1–A12=Rotor-Disc 1–12, plate B1–B12=Rotor-Disc 13–24, etc.). To maintain data analysis compatibility, wells 97–100 do not contain real-time assays but will contain master mix to account for weight balance.

## Gene table: RT<sup>2</sup> Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Mm.70546	NM_138305	Adcy3	Adenylate cyclase 3
A02	Mm.288206	NM_007406	Adcy7	Adenylate cyclase 7
A03	Mm.253280	NM_026203	Ahi1	Abelson helper integration site 1
A04	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A05	Mm.246967	NM_145223	Alms1	Alstrom syndrome 1 homolog (human)
A06	Mm.96833	NM_026577	Arl13b	ADP-ribosylation factor-like 13B
A07	Mm.392505	NM_019665	Arl6	ADP-ribosylation factor-like 6
A08	Mm.383171	NM_019404	Avpr2	Arginine vasopressin receptor 2
A09	Mm.71710	NM_015732	Axin2	Axin2
A10	Mm.23636	NM_001033128	Bbs1	Bardet-Biedl syndrome 1 (human)
A11	Mm.292107	NM_026116	Bbs2	Bardet-Biedl syndrome 2 (human)
A12	Mm.200714	NM_175325	Bbs4	Bardet-Biedl syndrome 4 (human)
B01	Mm.286187	NM_027810	Bbs7	Bardet-Biedl syndrome 7 (human)
B02	Mm.119717	NM_009771	Btrc	Beta-transducin repeat containing protein
B03	Mm.44434	NM_172274	Cc2d2a	Coiled-coil and C2 domain containing 2A
B04	Mm.273049	NM_007631	Ccnd1	Cyclin D1
B05	Mm.1022	NM_009861	Cdc42	Cell division cycle 42 homolog (S. cerevisiae)
B06	Mm.379344	NM_145990	Cdk5rap2	CDK5 regulatory subunit associated protein 2
B07	Mm.195663	NM_007669	Cdkn1a	Cyclin-dependent kinase inhibitor 1A (P21)
B08	Mm.229114	NM_146009	Cep290	Centrosomal protein 290
B09	Mm.3400	NM_010091	Dvl1	Dishevelled, dsh homolog 1 (Drosophila)
B10	Mm.246119	NM_172256	Dync2li1	Dynein cytoplasmic 2 light intermediate chain 1
B11	Mm.316210	NM_183221	Fat4	FAT tumor suppressor homolog 4 (Drosophila)
B12	Mm.29730	NM_010218	Fjx1	Four jointed box 1 (Drosophila)
C01	Mm.246513	NM_010234	Fos	FBJ osteosarcoma oncogene
C02	Mm.276298	NM_027376	Fuz	Fuzzy homolog (Drosophila)
C03	Mm.246003	NM_021457	Fzd1	Frizzled homolog 1 (Drosophila)
C04	Mm.391450	NM_010296	Gli1	GLI-Kruppel family member GLI1
C05	Mm.273292	NM_001081125	Gli2	GLI-Kruppel family member GLI2
C06	Mm.5098	NM_008130	Gli3	GLI-Kruppel family member GLI3
C07	Mm.134072	NM_031184	Glis2	GLIS family zinc finger 2
C08	Mm.394930	NM_019827	Gsk3b	Glycogen synthase kinase 3 beta
C09	Mm.7226	NM_009330	Hnf1b	HNF1 homeobox B
C10	Mm.425211	NM_021358	Htr6	5-hydroxytryptamine (serotonin) receptor 6
C11	Mm.293023	NM_026298	Ifi172	Intraflagellar transport 172 homolog (Chlamydomonas)
C12	Mm.358671	NM_018854	Ifi20	Intraflagellar transport 20 homolog (Chlamydomonas)
D01	Mm.240619	NM_026319	Ifi74	Intraflagellar transport 74 homolog (Chlamydomonas)
D02	Mm.389451	NM_026641	Ifi80	Intraflagellar transport 80 homolog (Chlamydomonas)
D03	Mm.4653	NM_009376	Ifi88	Intraflagellar transport 88 homolog (Chlamydomonas)
D04	Mm.268521	NM_010512	Igf1	Insulin-like growth factor 1
D05	Mm.439736	NM_010544	Ilh	Indian hedgehog
D06	Mm.4946	NM_008387	Ins2	Insulin II
D07	Mm.105309	NM_175515	Intu	Inturned planar cell polarity effector homolog (Drosophila)
D08	Mm.317706	NM_010569	Invs	Inversin
D09	Mm.222934	NM_177128	Iqcb1	IQ calmodulin-binding motif containing 1
D10	Mm.263396	NM_010578	Itgb1	Integrin beta 1 (fibronectin receptor beta)
D11	Mm.88694	NM_008443	Kif3a	Kinesin family member 3A
D12	Mm.315560	NM_008444	Kif3b	Kinesin family member 3B
E01	Mm.383182	NM_021284	Kras	V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog
E02	Mm.23847	NM_001081088	Lrp2	Low density lipoprotein receptor-related protein 2
E03	Mm.248907	NM_008927	Map2k1	Mitogen-activated protein kinase kinase 1
E04	Mm.196581	NM_011949	Mapk1	Mitogen-activated protein kinase 1
E05	Mm.272570	NM_021527	Mkks	McKusick-Kaufman syndrome protein
E06	Mm.24404	NM_001039684	Mks1	Meckel syndrome, type 1
E07	Mm.459300	NM_020021	Mos	Moloney sarcoma oncogene
E08	Mm.21158	NM_020009	Mtor	Mechanistic target of rapamycin (serine/threonine kinase)
E09	Mm.23788	NM_080849	Nek8	NIMA (never in mitosis gene a)-related expressed kinase 8

Position	UniGene	GenBank	Symbol	Description
E10	Mm.210766	NM_016902	Nphp1	Nephronophthisis 1 (juvenile) homolog (human)
E11	Mm.479273	NM_028721	Nphp3	Nephronophthisis 3 (adolescent)
E12	Mm.247480	NM_177429	Ofd1	Oral-facial-digital syndrome 1 gene homolog (human)
F01	Mm.221403	NM_011058	Pdgfra	Platelet derived growth factor receptor, alpha polypeptide
F02	Mm.260521	NM_008839	Pik3ca	Phosphatidylinositol 3-kinase, catalytic, alpha polypeptide
F03	Mm.290442	NM_013630	Pkd1	Polycystic kidney disease 1 homolog
F04	Mm.6442	NM_008861	Pkd2	Polycystic kidney disease 2
F05	Mm.249253	NM_153179	Pkhd1	Polycystic kidney and hepatic disease 1
F06	Mm.222178	NM_011101	Prkca	Protein kinase C, alpha
F07	Mm.228798	NM_008957	Ptch1	Patched homolog 1
F08	Mm.4654	NM_013643	Ptpn5	Protein tyrosine phosphatase, non-receptor type 5
F09	Mm.86744	NM_008999	Rab23	RAB23, member RAS oncogene family
F10	Mm.757	NM_016802	Rhoa	Ras homolog gene family, member A
F11	Mm.276024	NM_009072	Rock2	Rho-associated coiled-coil containing protein kinase 2
F12	Mm.324592	NM_173431	Rpgrip1l	Rpgrip1-like
G01	Mm.57202	NM_009170	Shh	Sonic hedgehog
G02	Mm.29279	NM_176996	Smo	Smoothened homolog (Drosophila)
G03	Mm.211411	NM_009218	Sstr3	Somatostatin receptor 3
G04	Mm.41210	NM_015752	Sufu	Suppressor of fused homolog (Drosophila)
G05	Mm.475125	NM_177861	Tmem67	Transmembrane protein 67
G06	Mm.222	NM_011640	Trp53	Transformation related protein 53
G07	Mm.224354	NM_022887	Tsc1	Tuberous sclerosis 1
G08	Mm.30435	NM_011647	Tsc2	Tuberous sclerosis 2
G09	Mm.282660	NM_029553	Ttc8	Tetratricopeptide repeat domain 8
G10	Mm.36148	NM_033509	Vangl2	Vang-like 2 (van gogh, Drosophila)
G11	Mm.215161	NM_011719	Wnt9b	Wingless-type MMTV integration site 9B
G12	Mm.405029	NM_133784	Wwtr1	WW domain containing transcription regulator 1
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, RT<sup>2</sup> Profiler PCR Arrays should be used together with the RT<sup>2</sup> First Strand Kit for cDNA synthesis and RT<sup>2</sup> SYBR<sup>®</sup> Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT <sup>2</sup> First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT <sup>2</sup> SYBR Green ROX <sup>™</sup> FAST Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the Rotor-Gene Q and other Rotor-Gene cyclers	330620

\* Larger kit sizes available; please inquire.

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RT<sup>2</sup> Profiler PCR Array products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at [www.qiagen.com](http://www.qiagen.com) or can be requested from QIAGEN Technical Services or your local distributor.

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