# RT² Profiler PCR Array (Rotor-Gene® Format)

# Human Primary Cilia

### Cat. no. 330231 PAHS-127ZR

### For pathway expression analysis

| Format | For use with the following real-time cyclers |
|---|---|
| RT² Profiler PCR Array, Format R | Rotor-Gene Q, other Rotor-Gene cyclers |

## 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 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.

**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

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: 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 | DYNC2LI1 | 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 |
| 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) |

| Position | UniGene | GenBank | Symbol | Description |
|---|---|---|---|---|
| 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 | Smoothened, 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. |
|---|---|---|
| RT² First Strand Kit (12) | Enzymes and reagents for cDNA synthesis | 330401 |
| RT² SYBR Green ROX™ 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.

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.

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 or can be requested from QIAGEN Technical Services or your local distributor.



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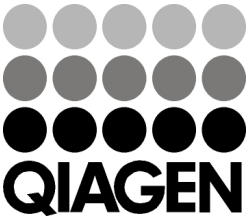


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