

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

## Human Drug Metabolism: Phase II Enzymes

Cat. no. 330231 PAHS-069ZR

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 Human Drug Metabolism Phase II Enzymes RT<sup>2</sup> Profiler PCR Array contains 84 genes involved in the enzymatic processes of drug biotransformation. Phase II drug metabolism enzymes catalyze the conjugation of lipophilic compounds with hydrophilic functional groups or moieties to form water-soluble conjugates that can be cleared from cells and from the body. This array represents genes encoding the seven major classes of phase II drug metabolism enzymes catalyzing such reactions as glutathione conjugation, glucuronidation, sulfation, methylation, amino acid conjugation, epoxidation, and esterification. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of drug metabolism enzymes 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.

**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.



## 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	Hs.431417	NM_001088	AANAT	Aralkylamine N-acetyltransferase
A02	Hs.406678	NM_001995	ACSL1	Acyl-CoA synthetase long-chain family member 1
A03	Hs.655772	NM_004457	ACSL3	Acyl-CoA synthetase long-chain family member 3
A04	Hs.268785	NM_004458	ACSL4	Acyl-CoA synthetase long-chain family member 4
A05	Hs.306812	NM_052956	ACSM1	Acyl-CoA synthetase medium-chain family member 1
A06	Hs.567879	NM_182617	ACSM2B	Acyl-CoA synthetase medium-chain family member 2B
A07	Hs.706754	NM_005622	ACSM3	Acyl-CoA synthetase medium-chain family member 3
A08	Hs.144567	NM_000030	AGXT	Alanine-glyoxylate aminotransferase
A09	Hs.123461	NM_020682	AS3MT	Arsenic (+3 oxidation state) methyltransferase
A10	Hs.522572	NM_004043	ASMT	Acetylserotonin O-methyltransferase
A11	Hs.284712	NM_001701	BAAT	Bile acid CoA: amino acid N-acyltransferase (glycine N-choloyltransferase)
A12	Hs.495250	NM_004059	CCBL1	Cysteine conjugate-beta lyase, cytoplasmic
B01	Hs.558865	NM_001266	CES1	Carboxylesterase 1
B02	Hs.282975	NM_198061	CES2	Carboxylesterase 2
B03	Hs.268700	NM_024922	CES3	Carboxylesterase 3
B04	Hs.350800	NM_145024	CES5A	Carboxylesterase 5A
B05	Hs.138155	NM_019886	CHST7	Carbohydrate (N-acetylglucosamine 6-O) sulfotransferase 7
B06	Hs.370408	NM_000754	COMT	Catechol-O-methyltransferase
B07	Hs.523145	NM_005216	DDOST	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase
B08	Hs.89649	NM_000120	EPHX1	Epoxide hydrolase 1, microsomal (xenobiotic)
B09	Hs.212088	NM_001979	EPHX2	Epoxide hydrolase 2, cytoplasmic
B10	Hs.514806	NM_020474	GALNT1	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 1 (GalNAc-T1)
B11	Hs.25130	NM_003774	GALNT4	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 4 (GalNAc-T4)
B12	Hs.81131	NM_000156	GAMT	Guanidinoacetate N-methyltransferase
C01	Hs.521568	NM_001490	GCNT1	Glucosaminyl (N-acetyl) transferase 1, core 2
C02	Hs.145384	NM_005838	GLYAT	Glycine-N-acyltransferase
C03	Hs.144914	NM_018960	GNMT	Glycine N-methyltransferase
C04	Hs.446309	NM_145740	GSTA1	Glutathione S-transferase alpha 1
C05	Hs.102484	NM_000847	GSTA3	Glutathione S-transferase alpha 3
C06	Hs.485557	NM_001512	GSTA4	Glutathione S-transferase alpha 4
C07	Hs.646984	NM_153699	GSTA5	Glutathione S-transferase alpha 5
C08	Hs.390667	NM_015917	GSTK1	Glutathione S-transferase kappa 1
C09	Hs.279837	NM_000848	GSTM2	Glutathione S-transferase mu 2 (muscle)
C10	Hs.2006	NM_000849	GSTM3	Glutathione S-transferase mu 3 (brain)
C11	Hs.348387	NM_000850	GSTM4	Glutathione S-transferase mu 4
C12	Hs.75652	NM_000851	GSTM5	Glutathione S-transferase mu 5
D01	Hs.190028	NM_004832	GSTO1	Glutathione S-transferase omega 1
D02	Hs.203634	NM_183239	GSTO2	Glutathione S-transferase omega 2
D03	Hs.523836	NM_000852	GSTP1	Glutathione S-transferase pi 1
D04	Hs.268573	NM_000853	GSTT1	Glutathione S-transferase theta 1
D05	Hs.42151	NM_006895	HNMT	Histamine N-methyltransferase
D06	Hs.632629	NM_006774	INMT	Indolethylamine N-methyltransferase
D07	Hs.519818	NM_002406	MGAT1	Mannosyl (alpha-1,3-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase
D08	Hs.93338	NM_002408	MGAT2	Mannosyl (alpha-1,6-)-glycoprotein beta-1,2-N-acetylglucosaminyltransferase
D09	Hs.389700	NM_020300	MGST1	Microsomal glutathione S-transferase 1
D10	Hs.81874	NM_002413	MGST2	Microsomal glutathione S-transferase 2
D11	Hs.191734	NM_004528	MGST3	Microsomal glutathione S-transferase 3
D12	Hs.368783	NM_016100	NAA20	N(alpha)-acetyltransferase 20, NatB catalytic subunit
E01	Hs.591847	NM_000662	NAT1	N-acetyltransferase 1 (arylamine N-acetyltransferase)
E02	Hs.2	NM_000015	NAT2	N-acetyltransferase 2 (arylamine N-acetyltransferase)
E03	Hs.503911	NM_006169	NNMT	Nicotinamide N-methyltransferase
E04	Hs.406515	NM_000903	NQO1	NAD(P)H dehydrogenase, quinone 1
E05	Hs.533050	NM_000904	NQO2	NAD(P)H dehydrogenase, quinone 2
E06	Hs.1892	NM_002686	PNMT	Phenylethanolamine N-methyltransferase
E07	Hs.525134	NM_017739	POMGNT1	Protein O-linked mannose beta1,2-N-acetylglucosaminyltransferase

Position	UniGene	GenBank	Symbol	Description
E08	Hs.146688	NM_004878	PTGES	Prostaglandin E synthase
E09	Hs.28491	NM_002970	SAT1	Spermidine/spermine N1-acetyltransferase 1
E10	Hs.567342	NM_001055	SULT1A1	Sulfotransferase family, cytosolic, 1A, phenol-preferring, member 1
E11	Hs.546304	NM_177528	SULT1A2	Sulfotransferase family, cytosolic, 1A, phenol-preferring, member 2
E12	Hs.129742	NM_014465	SULT1B1	Sulfotransferase family, cytosolic, 1B, member 1
F01	Hs.436123	NM_001056	SULT1C2	Sulfotransferase family, cytosolic, 1C, member 2
F02	Hs.535156	NM_001008743	SULT1C3	Sulfotransferase family, cytosolic, 1C, member 3
F03	Hs.312644	NM_006588	SULT1C4	Sulfotransferase family, cytosolic, 1C, member 4
F04	Hs.479898	NM_005420	SULT1E1	Sulfotransferase family 1E, estrogen-preferring, member 1
F05	Hs.515835	NM_003167	SULT2A1	Sulfotransferase family, cytosolic, 2A, dehydroepiandrosterone (DHEA)-preferring, member 1
F06	Hs.369331	NM_004605	SULT2B1	Sulfotransferase family, cytosolic, 2B, member 1
F07	Hs.189810	NM_014351	SULT4A1	Sulfotransferase family 4A, member 1
F08	Hs.631892	NM_001032377	SULT6B1	Sulfotransferase family, cytosolic, 6B, member 1
F09	Hs.444319	NM_000367	TPMT	Thiopurine S-methyltransferase
F10	Hs.474783	NM_003312	TST	Thiosulfate sulfurtransferase (rhodanese)
F11	Hs.304249	NM_003358	UGCG	UDP-glucose ceramide glucosyltransferase
F12	Hs.554822	NM_000463	UGT1A1	UDP glucuronosyltransferase 1 family, polypeptide A1
G01	Hs.554822	NM_007120	UGT1A4	UDP glucuronosyltransferase 1 family, polypeptide A4
G02	Hs.554822	NM_021027	UGT1A9	UDP glucuronosyltransferase 1 family, polypeptide A9
G03	Hs.225950	NM_006798	UGT2A1	UDP glucuronosyltransferase 2 family, polypeptide A1, complex locus
G04	Hs.122583	NM_024743	UGT2A3	UDP glucuronosyltransferase 2 family, polypeptide A3
G05	Hs.201634	NM_001075	UGT2B10	UDP glucuronosyltransferase 2 family, polypeptide B10
G06	Hs.575083	NM_001077	UGT2B17	UDP glucuronosyltransferase 2 family, polypeptide B17
G07	Hs.653154	NM_053039	UGT2B28	UDP glucuronosyltransferase 2 family, polypeptide B28
G08	Hs.285887	NM_021139	UGT2B4	UDP glucuronosyltransferase 2 family, polypeptide B4
G09	Hs.654424	NM_001074	UGT2B7	UDP glucuronosyltransferase 2 family, polypeptide B7
G10	Hs.254699	NM_152404	UGT3A1	UDP glycosyltransferase 3 family, polypeptide A1
G11	Hs.144197	NM_003360	UGT8	UDP glycosyltransferase 8
G12	Hs.250	NM_000379	XDH	Xanthine dehydrogenase
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, 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.

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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