RT² Profiler PCR Array (384-Well Format)

Human Molecular Toxicology PathwayFinder

Cat. no. 330231 PAHS-3401ZE

For pathway expression analysis

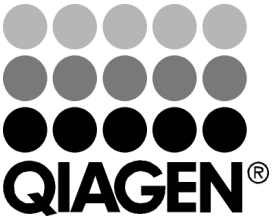
Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format E	Applied Biosystems® models 7900HT (384-well block), ViiA™ 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format G	Roche® LightCycler® 480 (384-well block)

Description

The Human Molecular Toxicology PathwayFinder RT² Profiler™ PCR Array profiles the expression of 370 key genes in at least 13 different biological pathways activated in response to toxic drugs. Profiling the expression of these genes in human cell lines (such as hepatocytes) or organs (especially livers) of mice or rats treated with your candidate drugs can help indicate the toxicological responses that they induce. Understanding these mechanisms can then guide chemical modifications to avoid the observed toxic responses rather than completely dismissing a drug class otherwise effective at preventing or treating the target disease phenotype. All of the toxic response pathways represented by this array can be independent or interrelated. For example, inhibition of β-oxidation leads to steatosis, and uncoupling mitochondrial energy metabolism leads to apoptosis and necrosis. Drugs affecting reactive oxygen species metabolism or cellular redox status cause oxidative stress and induce antioxidant responses. These and other reactive drugs also directly damage DNA or inhibit its repair activating DNA damage signaling and DNA repair pathways or apoptosis and necrosis under more extreme conditions of prolonged exposure or excess DNA, cell or tissue damage. Interference with protein synthesis causes endoplasmic reticulum stress and activates the unfolded protein response up-regulating heat shock protein and chaperone gene expression. Increased expression of the cytochrome P450 and other phase I drug metabolism enzymes occur when drugs inhibit or overwhelm their chemical modification activates. More severe and complex phenomena result when drugs inhibit fatty acid and lipid metabolism (β-oxidation) including the lipid storage disorders of steatosis, cholestasis, and phospholipidosis. Toxic responses to drugs in immune system cells bring about immunotoxicity and immunosuppression. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes to determine which molecular toxicological

response pathways your drug candidates activate with this array. Once you have defined the pathways involved, perform comprehensive surveys of more genes in those pathways using other application-specific or custom PCR Arrays designed for individual pathways.

For further details, consult the *RT² Profiler PCR Array Handbook*.



Shipping and storage

RT² Profiler PCR Arrays in formats E and G 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.

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.156738	NM_005763	AASS	Aminoadipate-semialdehyde synthase
A02	Hs.489033	NM_000927	ABCB1	ATP-binding cassette, sub-family B (MDR/TAP), member 1
A03	Hs.654403	NM_000443	ABCB4	ATP-binding cassette, sub-family B (MDR/TAP), member 4
A04	Hs.709181	NM_004996	ABCC1	ATP-binding cassette, sub-family C (CFTR/MRP), member 1
A05	Hs.368243	NM_000392	ABCC2	ATP-binding cassette, sub-family C (CFTR/MRP), member 2
A06	Hs.463421	NM_003786	ABCC3	ATP-binding cassette, sub-family C (CFTR/MRP), member 3
A07	Hs.431048	NM_005157	ABL1	C-abl oncogene 1, non-receptor tyrosine kinase
A08	Hs.706758	NM_001607	ACAA1	Acetyl-CoA acyltransferase 1
A09	Hs.200136	NM_006111	ACAA2	Acetyl-CoA acyltransferase 2
A10	Hs.160556	NM_198834	ACACA	Acetyl-CoA carboxylase alpha
A11	Hs.441378	NM_032169	ACAD11	Acyl-CoA dehydrogenase family, member 11
A12	Hs.567482	NM_014049	ACAD9	Acyl-CoA dehydrogenase family, member 9
A13	Hs.471277	NM_001608	ACADL	Acyl-CoA dehydrogenase, long chain
A14	Hs.445040	NM_000016	ACADM	Acyl-CoA dehydrogenase, C-4 to C-12 straight chain
A15	Hs.507076	NM_000017	ACADS	Acyl-CoA dehydrogenase, C-2 to C-3 short chain
A16	Hs.81934	NM_001609	ACADSB	Acyl-CoA dehydrogenase, short/branched chain
A17	Hs.437178	NM_000018	ACADVL	Acyl-CoA dehydrogenase, very long chain
A18	Hs.232375	NM_000019	ACAT1	Acetyl-CoA acetyltransferase 1
A19	Hs.571037	NM_005891	ACAT2	Acetyl-CoA acetyltransferase 2
A20	Hs.387567	NM_001096	ACLY	ATP citrate lyase
A21	Hs.567229	NM_002197	ACO1	Aconitase 1, soluble
A22	Hs.643610	NM_001098	ACO2	Aconitase 2, mitochondrial
A23	Hs.568046	NM_001037161	ACOT1	Acyl-CoA thioesterase 1
A24	Hs.591756	NM_130767	ACOT12	Acyl-CoA thioesterase 12
B01	Hs.122038	NM_001037162	ACOT6	Acyl-CoA thioesterase 6
B02	Hs.126137	NM_181866	ACOT7	Acyl-CoA thioesterase 7
B03	Hs.444776	NM_005469	ACOT8	Acyl-CoA thioesterase 8
B04	Hs.298885	NM_001033583	ACOT9	Acyl-CoA thioesterase 9
B05	Hs.464137	NM_004035	ACOX1	Acyl-CoA oxidase 1, palmitoyl
B06	Hs.444959	NM_003500	ACOX2	Acyl-CoA oxidase 2, branched chain
B07	Hs.479122	NM_003501	ACOX3	Acyl-CoA oxidase 3, pristanoyl
B08	Hs.654537	NM_000669	ADH1C	Alcohol dehydrogenase 1C (class I), gamma polypeptide
B09	Hs.656586	NM_001123	ADK	Adenosine kinase
B10	Hs.171189	NM_001621	AHR	Aryl hydrocarbon receptor
B11	Hs.324746	NM_001622	AHSG	Alpha-2-HS-glycoprotein
B12	Hs.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
B13	Hs.418167	NM_000477	ALB	Albumin
B14	Hs.76392	NM_000689	ALDH1A1	Aldehyde dehydrogenase 1 family, member A1
B15	Hs.632733	NM_000690	ALDH2	Aldehyde dehydrogenase 2 family (mitochondrial)
B16	Hs.295137	NM_001144	AMFR	Autocrine motility factor receptor
B17	Hs.728891	NM_001160	APAF1	Apoptotic peptidase activating factor 1
B18	Hs.73722	NM_080649	APEX1	APEX nuclease (multifunctional DNA repair enzyme) 1
B19	Hs.283923	NM_052968	APOA5	Apolipoprotein A-V
B20	Hs.654439	NM_000041	APOE	Apolipoprotein E
B21	Hs.534302	NM_001638	APOF	Apolipoprotein F
B22	Hs.315369	NM_001650	AQP4	Aquaporin 4
B23	Hs.527412	NM_004315	ASAH1	N-acylsphingosine amidohydrolase (acid ceramidase) 1
B24	Hs.489207	NM_183356	ASNS	Asparagine synthetase (glutamine-hydrolyzing)
C01	Hs.496487	NM_001675	ATF4	Activating transcription factor 4 (tax-responsive enhancer element B67)
C02	Hs.492740	NM_007348	ATF6	Activating transcription factor 6

Position	UniGene	GenBank	Symbol	Description
C03	Hs.367437	NM_000051	ATM	Ataxia telangiectasia mutated
C04	Hs.249227	NM_130463	ATP6V1G2	ATPase, H+ transporting, lysosomal 13kDa, V1 subunit G2
C05	Hs.216623	NM_005603	ATP8B1	ATPase, aminophospholipid transporter, class I, type 8B, member 1
C06	Hs.271791	NM_001184	ATR	Ataxia telangiectasia and Rad3 related
C07	Hs.370254	NM_004322	BAD	BCL2-associated agonist of cell death
C08	Hs.485139	NM_001188	BAK1	BCL2-antagonist/killer 1
C09	Hs.624291	NM_004324	BAX	BCL2-associated X protein
C10	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
C11	Hs.516966	NM_138578	BCL2L1	BCL2-like 1
C12	Hs.469658	NM_006538	BCL2L11	BCL2-like 11 (apoptosis facilitator)
C13	Hs.124696	NM_020139	BDH2	3-hydroxybutyrate dehydrogenase, type 2
C14	Hs.591054	NM_001196	BID	BH3 interacting domain death agonist
C15	Hs.127799	NM_001165	BIRC3	Baculoviral IAP repeat containing 3
C16	Hs.591104	NM_033503	BMF	Bcl2 modifying factor
C17	Hs.194143	NM_007294	BRCA1	Breast cancer 1, early onset
C18	Hs.34012	NM_000059	BRCA2	Breast cancer 2, early onset
C19	Hs.529053	NM_000064	C3	Complement component 3
C20	Hs.654443	NM_001737	C9	Complement component 9
C21	Hs.2490	NM_033292	CASP1	Caspase 1, apoptosis-related cysteine peptidase (interleukin 1, beta, convertase)
C22	Hs.141125	NM_004346	CASP3	Caspase 3, apoptosis-related cysteine peptidase
C23	Hs.9216	NM_001227	CASP7	Caspase 7, apoptosis-related cysteine peptidase
C24	Hs.599762	NM_001228	CASP8	Caspase 8, apoptosis-related cysteine peptidase
D01	Hs.329502	NM_001229	CASP9	Caspase 9, apoptosis-related cysteine peptidase
D02	Hs.502302	NM_001752	CAT	Catalase
D03	Hs.514222	NM_213607	CCDC103	Coiled-coil domain containing 103
D04	Hs.652262	NM_001770	CD19	CD19 molecule
D05	Hs.531099	NM_001115152	CD300LD	CD300 molecule-like family member d
D06	Hs.120949	NM_000072	CD36	CD36 molecule (thrombospondin receptor)
D07	Hs.631659	NM_000616	CD4	CD4 molecule
D08	Hs.472860	NM_001250	CD40	CD40 molecule, TNF receptor superfamily member 5
D09	Hs.592244	NM_000074	CD40LG	CD40 ligand
D10	Hs.502328	NM_000610	CD44	CD44 molecule (Indian blood group)
D11	Hs.838	NM_005191	CD80	CD80 molecule
D12	Hs.171182	NM_006889	CD86	CD86 molecule
D13	Hs.85258	NM_001768	CD8A	CD8a molecule
D14	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
D15	Hs.282975	NM_198061	CES2	Carboxylesterase 2
D16	Hs.390736	NM_003879	CFLAR	CASP8 and FADD-like apoptosis regulator
D17	Hs.24529	NM_001274	CHEK1	CHK1 checkpoint homolog (S. pombe)
D18	Hs.291363	NM_007194	CHEK2	CHK2 checkpoint homolog (S. pombe)
D19	Hs.592064	NM_182619	CLEC18A	C-type lectin domain family 18, member A
D20	Hs.351327	NM_017828	COMMD4	COMM domain containing 4
D21	Hs.370408	NM_000754	COMT	Catechol-O-methyltransferase
D22	Hs.431668	NM_001863	COX6B1	Cytochrome c oxidase subunit Vib polypeptide 1 (ubiquitous)
D23	Hs.433901	NM_004074	COX8A	Cytochrome c oxidase subunit VIIIA (ubiquitous)
D24	Hs.503043	NM_001876	CPT1A	Carnitine palmitoyltransferase 1A (liver)
E01	Hs.439777	NM_004377	CPT1B	Carnitine palmitoyltransferase 1B (muscle)
E02	Hs.705379	NM_000098	CPT2	Carnitine palmitoyltransferase 2
E03	Hs.12068	NM_000755	CRAT	Carnitine O-acetyltransferase
E04	Hs.125039	NM_021151	CROT	Carnitine O-octanoyltransferase
E05	Hs.184085	NM_000394	CRYAA	Crystallin, alpha A
E06	Hs.408767	NM_001885	CRYAB	Crystallin, alpha B
E07	Hs.430606	NM_004077	CS	Citrate synthase
E08	Hs.520898	NM_001908	CTSB	Cathepsin B
E09	Hs.644082	NM_001910	CTSE	Cathepsin E
E10	Hs.289271	NM_001916	CYC1	Cytochrome c-1
E11	Hs.578973	NM_015247	CYLD	Cylindromatosis (turban tumor syndrome)
E12	Hs.72912	NM_000499	CYP1A1	Cytochrome P450, family 1, subfamily A, polypeptide 1
E13	Hs.1361	NM_000761	CYP1A2	Cytochrome P450, family 1, subfamily A, polypeptide 2
E14	Hs.1360	NM_000767	CYP2B6	Cytochrome P450, family 2, subfamily B, polypeptide 6
E15	Hs.282409	NM_000769	CYP2C19	Cytochrome P450, family 2, subfamily C, polypeptide 19
E16	Hs.282624	NM_000771	CYP2C9	Cytochrome P450, family 2, subfamily C, polypeptide 9
E17	Hs.648256	NM_000106	CYP2D6	Cytochrome P450, family 2, subfamily D, polypeptide 6
E18	Hs.12907	NM_000773	CYP2E1	Cytochrome P450, family 2, subfamily E, polypeptide 1
E19	Hs.654391	NM_017460	CYP3A4	Cytochrome P450, family 3, subfamily A, polypeptide 4
E20	Hs.1644	NM_000780	CYP7A1	Cytochrome P450, family 7, subfamily A, polypeptide 1
E21	Hs.667720	NM_004820	CYP7B1	Cytochrome P450, family 7, subfamily B, polypeptide 1
E22	Hs.728989	NM_004083	DDIT3	DNA-damage-inducible transcript 3
E23	Hs.492212	NM_001359	DECR1	2,4-dienoyl CoA reductase 1, mitochondrial
E24	Hs.32949	NM_005218	DEFB1	Defensin, beta 1
F01	Hs.241576	NM_024295	DERL1	Der1-like domain family, member 1

Position	UniGene	GenBank	Symbol	Description
F02	Hs.498727	NM_014762	DHCR24	24-dehydrocholesterol reductase
F03	Hs.335551	NM_001931	DLAT	Dihydrolipoamide S-acetyltransferase
F04	Hs.131711	NM_000108	DLD	Dihydrolipoamide dehydrogenase
F05	Hs.525459	NM_001933	DLST	Dihydrolipoamide S-succinyltransferase (E2 component of 2-oxo-glutarate complex)
F06	Hs.445203	NM_001539	DNAJA1	DnaJ (Hsp40) homolog, subfamily A, member 1
F07	Hs.368078	NM_005880	DNAJA2	DnaJ (Hsp40) homolog, subfamily A, member 2
F08	Hs.459779	NM_005147	DNAJA3	DnaJ (Hsp40) homolog, subfamily A, member 3
F09	Hs.515210	NM_006145	DNAJB1	DnaJ (Hsp40) homolog, subfamily B, member 1
F10	Hs.490745	NM_005494	DNAJB6	DnaJ (Hsp40) homolog, subfamily B, member 6
F11	Hs.59214	NM_006260	DNAJC3	DnaJ (Hsp40) homolog, subfamily C, member 3
F12	Hs.164419	NM_025219	DNAJC5	DnaJ (Hsp40) homolog, subfamily C, member 5
F13	Hs.647643	NM_014787	DNAJC6	DnaJ (Hsp40) homolog, subfamily C, member 6
F14	Hs.522413	NM_004408	DNM1	Dynamin 1
F15	Hs.100058	NM_006426	DPYSL4	Dihydropyrimidinase-like 4
F16	Hs.272813	NM_175940	DUOX1	Dual oxidase 1
F17	Hs.71377	NM_014080	DUOX2	Dual oxidase 2
F18	Hs.76394	NM_004092	ECHS1	Enoyl CoA hydratase, short chain, 1, mitochondrial
F19	Hs.224616	NM_014674	EDEM1	ER degradation enhancer, mannosidase alpha-like 1
F20	Hs.523811	NM_025191	EDEM3	ER degradation enhancer, mannosidase alpha-like 3
F21	Hs.429879	NM_001966	EHHADH	Enoyl-CoA, hydratase/3-hydroxyacyl CoA dehydrogenase
F22	Hs.591589	NM_004836	EIF2AK3	Eukaryotic translation initiation factor 2-alpha kinase 3
F23	Hs.158688	NM_015904	EIF5B	Eukaryotic translation initiation factor 5B
F24	Hs.517145	NM_001428	ENO1	Enolase 1, (alpha)
G01	Hs.517517	NM_001429	EP300	E1A binding protein p300
G02	Hs.89649	NM_000120	EPHX1	Epoxide hydrolase 1, microsomal (xenobiotic)
G03	Hs.279259	NM_000502	EPX	Eosinophil peroxidase
G04	Hs.435981	NM_001983	ERCC1	Excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes overlapping antisense sequence)
G05	Hs.487294	NM_000400	ERCC2	Excision repair cross-complementing rodent repair deficiency, complementation group 2
G06	Hs.469872	NM_000122	ERCC3	Excision repair cross-complementing rodent repair deficiency, complementation group 3 (xeroderma pigmentosum group B complementing)
G07	Hs.258429	NM_000123	ERCC5	Excision repair cross-complementing rodent repair deficiency, complementation group 5
G08	Hs.654449	NM_000124	ERCC6	Excision repair cross-complementing rodent repair deficiency, complementation group 6
G09	Hs.592041	NM_033266	ERN2	Endoplasmic reticulum to nucleus signaling 2
G10	Hs.592304	NM_014584	ERO1L	ERO1-like (S. cerevisiae)
G11	Hs.558519	NM_019891	ERO1LB	ERO1-like beta (S. cerevisiae)
G12	Hs.432491	NM_001984	ESD	Esterase D
G13	Hs.208124	NM_000125	ESR1	Estrogen receptor 1
G14	Hs.655207	NM_000506	F2	Coagulation factor II (thrombin)
G15	Hs.380135	NM_001443	FABP1	Fatty acid binding protein 1, liver
G16	Hs.86131	NM_003824	FADD	Fas (TNFRSF6)-associated via death domain
G17	Hs.244139	NM_000043	FAS	Fas (TNF receptor superfamily, member 6)
G18	Hs.2007	NM_000639	FASLG	Fas ligand (TNF superfamily, member 6)
G19	Hs.83190	NM_004104	FASN	Fatty acid synthase
G20	Hs.464419	NM_018438	FBXO6	F-box protein 6
G21	Hs.592490	NM_000143	FH	Fumarate hydratase
G22	Hs.144912	NM_001460	FMO2	Flavin containing monooxygenase 2 (non-functional)
G23	Hs.445350	NM_006894	FMO3	Flavin containing monooxygenase 3
G24	Hs.386502	NM_002022	FMO4	Flavin containing monooxygenase 4
H01	Hs.642706	NM_001461	FMO5	Flavin containing monooxygenase 5
H02	Hs.87236	NM_012188	FOXI1	Forkhead box I1
H03	Hs.54943	NM_012192	FXC1	Fracture callus 1 homolog (rat)
H04	Hs.80409	NM_001924	GADD45A	Growth arrest and DNA-damage-inducible, alpha
H05	Hs.269027	NM_014568	GALNT5	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 5 (GalNAc-T5)
H06	Hs.532699	NM_000159	GCDH	Glutaryl-CoA dehydrogenase
H07	Hs.524418	NM_005276	GPD1	Glycerol-3-phosphate dehydrogenase 1 (soluble)
H08	Hs.103502	NM_005309	GPT	Glutamic-pyruvate transaminase (alanine aminotransferase)
H09	Hs.76686	NM_000581	GPX1	Glutathione peroxidase 1
H10	Hs.2704	NM_002083	GPX2	Glutathione peroxidase 2 (gastrointestinal)
H11	Hs.386793	NM_002084	GPX3	Glutathione peroxidase 3 (plasma)
H12	Hs.433951	NM_002085	GPX4	Glutathione peroxidase 4 (phospholipid hydroperoxidase)
H13	Hs.248129	NM_001509	GPX5	Glutathione peroxidase 5 (epididymal androgen-related protein)
H14	Hs.448570	NM_182701	GPX6	Glutathione peroxidase 6 (olfactory)
H15	Hs.43728	NM_015696	GPX7	Glutathione peroxidase 7
H16	Hs.444356	NM_002086	GRB2	Growth factor receptor-bound protein 2
H17	Hs.102484	NM_000847	GSTA3	Glutathione S-transferase alpha 3

Position	UniGene	GenBank	Symbol	Description
H18	Hs.348387	NM_000850	GSTM4	Glutathione S-transferase mu 4
H19	Hs.368805	NM_012205	HAAO	3-hydroxyanthranilate 3,4-dioxygenase
H20	Hs.516032	NM_000182	HADHA	Hydroxyacyl-CoA dehydrogenase/3-ketoacyl-CoA thiolase/enoyl-CoA hydratase (trifunctional protein), alpha subunit
H21	Hs.515848	NM_000183	HADHB	Hydroxyacyl-CoA dehydrogenase/3-ketoacyl-CoA thiolase/enoyl-CoA hydratase (trifunctional protein), beta subunit
H22	Hs.146393	NM_014685	HERPUD1	Homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1
H23	Hs.701691	NM_002124	HLA-DRB1	Major histocompatibility complex, class II, DR beta 1
H24	Hs.659337	NM_030661	HOXA3	Homeobox A3
I01	Hs.182385	NM_002151	HPN	Hepsin
I02	Hs.426485	NM_000613	HPX	Hemopexin
I03	Hs.1498	NM_000412	HRG	Histidine-rich glycoprotein
I04	Hs.530227	NM_005526	HSF1	Heat shock transcription factor 1
I05	Hs.158195	NM_004506	HSF2	Heat shock transcription factor 2
I06	Hs.525600	NM_001017963	HSP90AA1	Heat shock protein 90kDa alpha (cytosolic), class A member 1
I07	Hs.509736	NM_007355	HSP90AB1	Heat shock protein 90kDa alpha (cytosolic), class B member 1
I08	Hs.192374	NM_003299	HSP90B1	Heat shock protein 90kDa beta (Grp94), member 1
I09	Hs.728810	NM_005345	HSPA1A	Heat shock 70kDa protein 1A
I10	Hs.274402	NM_005346	HSPA1B	Heat shock 70kDa protein 1B
I11	Hs.690634	NM_005527	HSPA1L	Heat shock 70kDa protein 1-like
I12	Hs.728938	NM_021979	HSPA2	Heat shock 70kDa protein 2
I13	Hs.90093	NM_002154	HSPA4	Heat shock 70kDa protein 4
I14	Hs.716396	NM_005347	HSPA5	Heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)
I15	Hs.702021	NM_006597	HSPA8	Heat shock 70kDa protein 8
I16	Hs.184233	NM_004134	HSPA9	Heat shock 70kDa protein 9 (mortalin)
I17	Hs.520973	NM_001540	HSPB1	Heat shock 27kDa protein 1
I18	Hs.709660	NM_001541	HSPB2	Heat shock 27kDa protein 2
I19	Hs.534538	NM_144617	HSPB6	Heat shock protein, alpha-crystallin-related, B6
I20	Hs.400095	NM_014365	HSPB8	Heat shock 22kDa protein 8
I21	Hs.29169	NM_024610	HSPBAP1	HSPB (heat shock 27kDa) associated protein 1
I22	Hs.595053	NM_002156	HSPD1	Heat shock 60kDa protein 1 (chaperonin)
I23	Hs.1197	NM_002157	HSPE1	Heat shock 10kDa protein 1 (chaperonin 10)
I24	Hs.36927	NM_006644	HSPH1	Heat shock 105kDa/110kDa protein 1
J01	Hs.115721	NM_013247	HTRA2	HtrA serine peptidase 2
J02	Hs.661014	NM_153692	HTRA4	HtrA serine peptidase 4
J03	Hs.643447	NM_000201	ICAM1	Intercellular adhesion molecule 1
J04	Hs.593422	NM_005896	IDH1	Isocitrate dehydrogenase 1 (NADP+), soluble
J05	Hs.596461	NM_002168	IDH2	Isocitrate dehydrogenase 2 (NADP+), mitochondrial
J06	Hs.591110	NM_005530	IDH3A	Isocitrate dehydrogenase 3 (NAD+) alpha
J07	Hs.436405	NM_174856	IDH3B	Isocitrate dehydrogenase 3 (NAD+) beta
J08	Hs.410197	NM_174869	IDH3G	Isocitrate dehydrogenase 3 (NAD+) gamma
J09	Hs.37026	NM_024013	IFNA1	Interferon, alpha 1
J10	Hs.856	NM_000619	IFNG	Interferon, gamma
J11	Hs.193717	NM_000572	IL10	Interleukin 10
J12	Hs.845	NM_002188	IL13	Interleukin 13
J13	Hs.1722	NM_000575	IL1A	Interleukin 1, alpha
J14	Hs.126256	NM_000576	IL1B	Interleukin 1, beta
J15	Hs.89679	NM_000586	IL2	Interleukin 2
J16	Hs.73917	NM_000589	IL4	Interleukin 4
J17	Hs.2247	NM_000879	IL5	Interleukin 5 (colony-stimulating factor, eosinophil)
J18	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
J19	Hs.632713	NM_031479	INHBE	inhibin, beta E
J20	Hs.248472	NM_000887	ITGAX	Integrin, alpha X (complement component 3 receptor 4 subunit)
J21	Hs.728907	NM_000214	JAG1	Jagged 1
J22	Hs.592068	NM_020655	JPH3	Junctophilin 3
J23	Hs.484111	NM_014592	KCNIP1	Kv channel interacting protein 1
J24	Hs.567297	NM_000221	KHK	Ketohexokinase (fructokinase)
K01	Hs.37860	NM_006563	KLF1	Kruppel-like factor 1 (erythroid)
K02	Hs.166091	NM_002312	LIG4	Ligase IV, DNA, ATP-dependent
K03	Hs.594444	NM_005572	LMNA	Lamin A/C
K04	Hs.180878	NM_000237	LPL	Lipoprotein lipase
K05	Hs.596543	NM_002340	LSS	Lanosterol synthase (2,3-oxidosqualene-lanosterol cyclase)
K06	Hs.415762	NM_003695	LY6D	Lymphocyte antigen 6 complex, locus D
K07	Hs.524579	NM_000239	LYZ	Lysozyme
K08	Hs.643440	NM_002361	MAG	Myelin associated glycoprotein
K09	Hs.480415	NM_005908	MANBA	Mannosidase, beta A, lysosomal
K10	Hs.183109	NM_000240	MAOA	Monoamine oxidase A
K11	Hs.654473	NM_000898	MAOB	Monoamine oxidase B
K12	Hs.138211	NM_002750	MAPK8	Mitogen-activated protein kinase 8
K13	Hs.75890	NM_003791	MBTPS1	Membrane-bound transcription factor peptidase, site 1

Position	UniGene	GenBank	Symbol	Description
K14	Hs.443490	NM_015884	MBTPS2	Membrane-bound transcription factor peptidase, site 2
K15	Hs.632486	NM_021960	MCL1	Myeloid cell leukemia sequence 1 (BCL2-related)
K16	Hs.526521	NM_005917	MDH1	Malate dehydrogenase 1, NAD (soluble)
K17	Hs.147816	NM_001039845	MDH1B	Malate dehydrogenase 1B, NAD (soluble)
K18	Hs.520967	NM_005918	MDH2	Malate dehydrogenase 2, NAD (mitochondrial)
K19	Hs.484551	NM_002392	MDM2	Mdm2 p53 binding protein homolog (mouse)
K20	Hs.444986	NM_006838	METAP2	Methionyl aminopeptidase 2
K21	Hs.501522	NM_002412	MGMT	O-6-methylguanine-DNA methyltransferase
K22	Hs.689823	NM_002417	MKI67	Antigen identified by monoclonal antibody Ki-67
K23	Hs.195364	NM_000249	MLH1	MutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)
K24	Hs.383019	NM_198205	MLX	MAX-like protein X
L01	Hs.458272	NM_000250	MPO	Myeloperoxidase
L02	Hs.655329	NM_014046	MRPS18B	Mitochondrial ribosomal protein S18B
L03	Hs.597656	NM_000251	MSH2	MutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli)
L04	Hs.195799	NM_000253	MTTP	Microsomal triglyceride transfer protein
L05	Hs.654408	NM_003998	NFKB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
L06	Hs.464333	NM_017921	NPLOC4	Nuclear protein localization 4 homolog (S. cerevisiae)
L07	Hs.406515	NM_000903	NQO1	NAD(P)H dehydrogenase, quinone 1
L08	Hs.427055	NM_021969	NR0B2	Nuclear receptor subfamily 0, group B, member 2
L09	Hs.282735	NM_005123	NR1H4	Nuclear receptor subfamily 1, group H, member 4
L10	Hs.33446	NM_003822	NR5A2	Nuclear receptor subfamily 5, group A, member 2
L11	Hs.631602	NM_006184	NUCB1	Nucleobindin 1
L12	Hs.534331	NM_002452	NUDT1	Nudix (nucleoside diphosphate linked moiety X)-type motif 1
L13	Hs.533657	NM_015901	NUDT13	Nudix (nucleoside diphosphate linked moiety X)-type motif 13
L14	Hs.144407	NM_018283	NUDT15	Nudix (nucleoside diphosphate linked moiety X)-type motif 15
L15	Hs.475525	NM_024923	NUP210	Nucleoporin 210kDa
L16	Hs.488181	NM_002541	OGDH	Oxoglutarate (alpha-ketoglutarate) dehydrogenase (lipoamide)
L17	Hs.380271	NM_002542	OGG1	8-oxoguanine DNA glycosylase
L18	Hs.553833	NM_001004467	OR10J3	Olfactory receptor, family 10, subfamily J, member 3
L19	Hs.527861	NM_006812	OS9	Osteosarcoma amplified 9, endoplasmic reticulum lectin
L20	Hs.630585	NM_152672	OSTalpha	Organic solute transporter alpha
L21	Hs.534533	NM_178859	OSTbeta	Organic solute transporter beta
L22	Hs.177766	NM_001618	PARP1	Poly (ADP-ribose) polymerase 1
L23	Hs.409412	NM_005484	PARP2	Poly (ADP-ribose) polymerase 2
L24	Hs.80741	NM_000282	PCCA	Propionyl CoA carboxylase, alpha polypeptide
M01	Hs.728886	NM_182649	PCNA	Proliferating cell nuclear antigen
M02	Hs.22584	NM_024411	PDYN	Prodynorphin
M03	Hs.655327	NM_002624	PFDN5	Prefoldin subunit 5
M04	Hs.654800	NM_025225	PNPLA3	Patatin-like phospholipase domain containing 3
M05	Hs.370995	NM_000446	PON1	Paraoxonase 1
M06	Hs.354056	NM_000941	POR	P450 (cytochrome) oxidoreductase
M07	Hs.673855	NM_006236	POU3F3	POU class 3 homeobox 3
M08	Hs.103110	NM_005036	PPARA	Peroxisome proliferator-activated receptor alpha
M09	Hs.304376	NM_032833	PPP1R15B	Protein phosphatase 1, regulatory (inhibitor) subunit 15B
M10	Hs.180909	NM_002574	PRDX1	Peroxiredoxin 1
M11	Hs.432121	NM_005809	PRDX2	Peroxiredoxin 2
M12	Hs.120	NM_004905	PRDX6	Peroxiredoxin 6
M13	Hs.491682	NM_006904	PRKDC	Protein kinase, DNA-activated, catalytic polypeptide
M14	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
M15	Hs.654514	NM_002838	PTPRC	Protein tyrosine phosphatase, receptor type, C
M16	Hs.171844	NM_006505	PVR	Poliovirus receptor
M17	Hs.632469	NM_020387	RAB25	RAB25, member RAS oncogene family
M18	Hs.631709	NM_002875	RAD51	RAD51 homolog (S. cerevisiae)
M19	Hs.263671	NM_002906	RDX	Radixin
M20	Hs.283091	NM_020415	RETN	Resistin
M21	Hs.442337	NM_176823	S100A7A	S100 calcium binding protein A7A
M22	Hs.416073	NM_002964	S100A8	S100 calcium binding protein A8
M23	Hs.105269	NM_006745	SC4MOL	Sterol-C4-methyl oxidase-like
M24	Hs.558396	NM_005063	SCD	Stearoyl-CoA desaturase (delta-9-desaturase)
N01	Hs.440475	NM_004168	SDHA	Succinate dehydrogenase complex, subunit A, flavoprotein (Fp)
N02	Hs.465924	NM_003000	SDHB	Succinate dehydrogenase complex, subunit B, iron sulfur (Ip)
N03	Hs.444472	NM_003001	SDHC	Succinate dehydrogenase complex, subunit C, integral membrane protein, 15kDa
N04	Hs.356270	NM_003002	SDHD	Succinate dehydrogenase complex, subunit D, integral membrane protein
N05	Hs.622596	NM_003262	SEC62	SEC62 homolog (S. cerevisiae)
N06	Hs.181300	NM_005065	SEL1L	Sel-1 suppressor of lin-12-like (C. elegans)
N07	Hs.32148	NM_203472	SELS	Selenoprotein S
N08	Hs.518326	NM_014445	SERP1	Stress-associated endoplasmic reticulum protein 1
N09	Hs.534293	NM_001085	SERPINA3	Serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 3

Position	UniGene	GenBank	Symbol	Description
N10	Hs.952	NM_003049	SLC10A1	Solute carrier family 10 (sodium/bile acid cotransporter family), member 1
N11	Hs.419240	NM_006931	SLC2A3	Solute carrier family 2 (facilitated glucose transporter), member 3
N12	Hs.46440	NM_021094	SLCO1A2	Solute carrier organic anion transporter family, member 1A2
N13	Hs.498173	NM_000543	SMPD1	Sphingomyelin phosphodiesterase 1, acid lysosomal
N14	Hs.443914	NM_000454	SOD1	Superoxide dismutase 1, soluble
N15	Hs.48513	NM_006038	SPATA2	Spermatogenesis associated 2
N16	Hs.592123	NM_004176	SREBF1	Sterol regulatory element binding transcription factor 1
N17	Hs.109590	NM_003943	STBD1	Starch binding domain 1
N18	Hs.546323	NM_003850	SUCLA2	Succinate-CoA ligase, ADP-forming, beta subunit
N19	Hs.270428	NM_003849	SUCLG1	Succinate-CoA ligase, alpha subunit
N20	Hs.655250	NM_003848	SUCLG2	Succinate-CoA ligase, GDP-forming, beta subunit
N21	Hs.202676	NM_014258	SYCP2	Synaptonemal complex protein 2
N22	Hs.310545	NM_005639	SYT1	Synaptotagmin I
N23	Hs.715498	NM_172230	SYVN1	Synovial apoptosis inhibitor 1, synoviolin
N24	Hs.503998	NM_003186	TAGLN	Transgelin
O01	Hs.363137	NM_030752	TCP1	T-complex 1
O02	Hs.82961	NM_003226	TFF3	Trefoil factor 3 (intestinal)
O03	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
O04	Hs.189782	NM_018202	TMEM57	Transmembrane protein 57
O05	Hs.241570	NM_000594	TNF	Tumor necrosis factor
O06	Hs.465643	NM_152362	TNFAIP8L1	Tumor necrosis factor, alpha-induced protein 8-like 1
O07	Hs.591834	NM_003844	TNFRSF10A	Tumor necrosis factor receptor superfamily, member 10a
O08	Hs.521456	NM_003842	TNFRSF10B	Tumor necrosis factor receptor superfamily, member 10b
O09	Hs.279594	NM_001065	TNFRSF1A	Tumor necrosis factor receptor superfamily, member 1A
O10	Hs.478275	NM_003810	TNFSF10	Tumor necrosis factor (ligand) superfamily, member 10
O11	Hs.654481	NM_000546	TP53	Tumor protein p53
O12	Hs.467554	NM_000547	TPO	Thyroid peroxidase
O13	Hs.709483	NM_006778	TRIM10	Tripartite motif containing 10
O14	Hs.533977	NM_006472	TXNIP	Thioredoxin interacting protein
O15	Hs.134406	NM_017853	TXNL4B	Thioredoxin-like 4B
O16	Hs.443430	NM_006440	TXNRD2	Thioredoxin reductase 2
O17	Hs.529420	NM_182688	UBE2G2	Ubiquitin-conjugating enzyme E2G 2
O18	Hs.191987	NM_194458	UBE2J2	Ubiquitin-conjugating enzyme E2, J2
O19	Hs.179309	NM_013444	UBQLN2	Ubiquilin 2
O20	Hs.591242	NM_014607	UBXN4	UBX domain protein 4
O21	Hs.249211	NM_021833	UCP1	Uncoupling protein 1 (mitochondrial, proton carrier)
O22	Hs.80658	NM_003355	UCP2	Uncoupling protein 2 (mitochondrial, proton carrier)
O23	Hs.101337	NM_003356	UCP3	Uncoupling protein 3 (mitochondrial, proton carrier)
O24	Hs.554822	NM_000463	UGT1A1	UDP glucuronosyltransferase 1 family, polypeptide A1
P01	Hs.225950	NM_006798	UGT2A1	UDP glucuronosyltransferase 2 family, polypeptide A1, complex locus
P02	Hs.285887	NM_021139	UGT2B4	UDP glucuronosyltransferase 2 family, polypeptide B4
P03	Hs.529782	NM_007126	VCP	Valosin containing protein
P04	Hs.463964	NM_017983	WIPI1	WD repeat domain, phosphoinositide interacting 1
P05	Hs.437638	NM_005080	XBP1	X-box binding protein 1
P06	Hs.356076	NM_001167	XIAP	X-linked inhibitor of apoptosis
P07	Hs.654364	NM_000380	XPA	Xeroderma pigmentosum, complementation group A
P08	Hs.475538	NM_004628	XPC	Xeroderma pigmentosum, complementation group C
P09	Hs.98493	NM_006297	XRCC1	X-ray repair complementing defective repair in Chinese hamster cells 1
P10	Hs.388739	NM_021141	XRCC5	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining)
P11	Hs.520640	NM_001101	ACTB	Actin, beta
P12	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
P13	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
P14	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
P15	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
P16	N/A	SA_00105	HGDC	Human Genomic DNA Contamination
P17	N/A	SA_00105	HGDC	Human Genomic DNA Contamination
P18	N/A	SA_00105	HGDC	Human Genomic DNA Contamination
P19	N/A	SA_00104	RTC	Reverse Transcription Control
P20	N/A	SA_00104	RTC	Reverse Transcription Control
P21	N/A	SA_00104	RTC	Reverse Transcription Control
P22	N/A	SA_00103	PPC	Positive PCR Control
P23	N/A	SA_00103	PPC	Positive PCR Control
P24	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 qPCR Mastermix (8)*	For 4 x 384 assays in 384-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad model CFX384; Roche LightCycler 480 (384-well); all other cyclers	330501
RT² SYBR Green ROX™ qPCR Mastermix (8)*	For 4 x 384 assays in 384-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 7900HT, ViiA 7 (384-well blocks)	330521
RT² SYBR Green Fluor qPCR Mastermix (8)*	For 4 x 384 assays in 384-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler®, iQ™5, MyiQ™, MyiQ2	330511

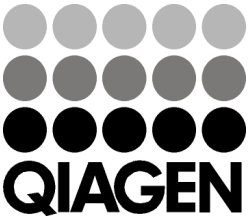
* Larger kit sizes available; please inquire.

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.

www.qiagen.com

Australia ▪ 1-800-243-800
Austria ▪ 0800/281010
Belgium ▪ 0800-79612
Brazil ▪ 0800-557779
Canada ▪ 800-572-9613
China ▪ 8621-3865-3865
Denmark ▪ 80-885945
Finland ▪ 0800-914416
France ▪ 01-60-920-930
Germany ▪ 02103-29-12000
Hong Kong ▪ 800 933 965
Ireland ▪ 1800 555 049
Italy ▪ 800-787980
Japan ▪ 03-6890-7300
Korea (South) ▪ 080-000-7145
Luxembourg ▪ 8002 2076
Mexico ▪ 01-800-7742-436
The Netherlands ▪ 0800 0229592
Norway ▪ 800-18859
Singapore ▪ 1800-742-4368
Spain ▪ 91-630-7050
Sweden ▪ 020-790282
Switzerland ▪ 055-254-22-11
UK ▪ 01293-422-911
USA ▪ 800-426-8157



Sample & Assay Technologies