

RT² Profiler™ PCR Array:

Mouse Drug Metabolism

Catalog Number

PAMM-002A

PAMM-002C

PAMM-002D

PAMM-002E

PAMM-002F

PAMM-002G

For Real-Time Instruments:

ABI Standard Blocks; Bio-Rad iCycler, MyiQ, and (MJ Research) Chromo 4; and Stratagene Mx3005p, Mx3000p

ABI 7500 and 7900HT FAST 96-Well Blocks, ABI StepOnePlus

Bio-Rad (MJ Research) Opticon and Opticon 2, Stratagene Mx4000

ABI 7900HT 384-Well Block

Roche LightCycler 480 96-well Block

Roche LightCycler 480 384-well Block

Description

The Mouse Drug Metabolism RT² Profiler PCR Array contains 84 genes critical in the metabolism of drugs, toxic chemicals, hormones and micronutrients important to pharmacology, endocrinology and food science. Drug metabolism is also often implicated in many disease states including cancer, intoxication, addiction, and metabolic diseases. The genes encoding enzymes that are important for drug transport (such as metallothioneins and P-glycoproteins), phase I metabolism (specifically the P450 family), and phase II metabolism (such as transferases and hydrolases) are represented on the array. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to drug metabolism with this array.

Functional Gene Groupings**Drug Transporters:**Metallothioneins: Mt2, Mt3.P-Glycoprotein Family: Abcb1a, Abcb1b, Abcb4, Abcc1, Gpi1.**Phase I Metabolizing Enzymes:**P450 Family: Cyp11b2, Cyp17a1, Cyp19a1, Cyp1a1, Cyp1a2, Cyp27b1, Cyp2b10, Cyp2C29, Cyp2e1, Cyp4b1.**Phase II Metabolizing Enzymes:**Carboxylesterases: Ces1, Ces2.Decarboxylases: Gad1, Gad2.Dehydrogenases: Adh1, Adh4, Adh5, Alad, Aldh1a1, Hsd17b1, Hsd17b2, Hsd17b3.Glutathione Peroxidases: Gpx1, Gpx2, Gpx3, Gpx5, Gsta1, Gsta3, Gsta4, Gstm1, Gstm2, Gstm3, Gstm4, Gstm5, Gstp1, Gstt1, Gstz1, Lpo, Mpo.Hydrolases: Ephx1, Faah, Fbp1.Kinases: Hk2, Pklr, Pkm2.Lipoxygenases: Alox12, Alox15, Alox5, Apoe.Oxidoreductases: Blvra, Blvrb, Cyb5r3 (Dia1), Gpx1, Gpx2, Gsr, Mthfr, Nos3, Nqo1, Srd5a1, Srd5a2.Paraoxonases: Pon1, Pon2, Pon3.Sulfotransferases: Chst1, Gsta3, Gstm2, Gstm3, Gstm5, Gstp1, Gstt1, Mgst1, Mgst2, Mgst3.Transferases: Nat1, Nat2, Comt, Ggt1.**Other Genes Related to Drug Metabolism:** Abp1, Ahr, Arnt, Asna1, Gckr, Marcks, Smarcal1, Snn.

Product Specification Sheet

Storage Conditions

Please check the kit components immediately after you receive this package. We are only responsible for missing items reported within two (2) business days of receipt.

Storage Conditions: PCR Arrays are shipped at ambient temperature. Keep plates at -20 °C for long-term storage.

NOTE: Be sure that you have the correct PCR Array format for your instrument before starting the experiment.

References

1. Leeder JS. (2001) Pharmacogenetics and Pharmacogenomics. *Pediatr Clin North Am.* **48**: 765-81.
2. Gram TE, Okine LK, Gram RA (1986). The Metabolism of Xenobiotics By Certain Extrahepatic Organs And Its Relation To Toxicity. *Annu Rev Pharmacol Toxicol.* **26**:259-91.
3. Anders MW, editor (1985). *Bioactivation Of Foreign Compounds*. New York Academic.
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5. Nelson DR, Koymans L, Kamataki T, et al (1996). P450 Superfamily: Update On New Sequences, Gene Mapping, Accession Numbers And Nomenclature. *Pharmacogenetics* **6**:1-42.
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11. Kaufmann FC, editor (1994). *Conjugation-deconjugation in drug metabolism Sulfotransferase enzymes handbook of experimental pharmacology*, Vol **112**.
12. Falany CN (1997) Enzymology of Human Cytosolic Sulfotransferase *FASEB J* **11**: 206-216.
13. Daujat M, Pichard L, Fabre I, et al (1991) Induction Protocols For Cytochrome P450 IIIA *in vivo* and in Primary Cultures of Animal and Human Hepatocytes. *Methods Enzymol* **206**: 345-353.
14. King CD, Rios GR, Green MD, Tephly TR. (2000) UDP-Glucuronosyltransferases. *Curr Drug Metab.* **1**: 143-61.
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Product Specification Sheet

Array Layout: Mouse Drug Metabolism PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	Abcb1a	Abcb1b	Abcb4	Abcc1	Abp1	Adh1	Adh4	Adh5	Ahr	Alad	Aldh1a1	Alox12
B	Alox15	Alox5	ApoE	Arnt	Asna1	Blvra	Blvrb	Ces1	Ces2	Chst1	Comt	Cyp11b2
C	Cyp17a1	Cyp19a1	Cyp1a1	Cyp1a2	Cyp27b1	Cyp2b10	Cyp2c29	Cyp2e1	Cyp4b1	Cyb5r3	Ephx1	Faah
D	Fbp1	Gad1	Gad2	Gckr	Ggt1	Gpi1	Gpx1	Gpx2	Gpx3	Gpx5	Gsr	Gsta1
E	Gsta3	Gsta4	Gstm1	Gstm2	Gstm3	Gstm4	Gstm5	Gstp1	Gstt1	Gstz1	Hk2	Hsd17b1
F	Hsd17b2	Hsd17b3	Lpo	Marcks	Mgst1	Mgst2	Mgst3	Mpo	Mt2	Mt3	Mthfr	Nat1
G	Nat2	Nos3	Nqo1	Pklr	Pkm2	Pon1	Pon2	Pon3	Smarcal1	Snn	Srd5a1	Srd5a2
H	Gusb	Hprt1	Hsp90ab1	Gapdh	Actb	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Mm.207354	NM_011076	Abcb1a	ATP-binding cassette, sub-family B (MDR/TAP), member 1A
A02	Mm.146649	NM_011075	Abcb1b	ATP-binding cassette, sub-family B (MDR/TAP), member 1B
A03	Mm.297825	NM_008830	Abcb4	ATP-binding cassette, sub-family B (MDR/TAP), member 4
A04	Mm.196634	NM_008576	Abcc1	ATP-binding cassette, sub-family C (CFTR/MRP), member 1
A05	Mm.213898	NM_029638	Abp1	Amiloride binding protein 1 (amine oxidase, copper-containing)
A06	Mm.2409	NM_007409	Adh1	Alcohol dehydrogenase 1 (class I)
A07	Mm.158750	NM_011996	Adh4	Alcohol dehydrogenase 4 (class II), pi polypeptide
A08	Mm.3874	NM_007410	Adh5	Alcohol dehydrogenase 5 (class III), chi polypeptide
A09	Mm.341377	NM_013464	Ahr	Aryl-hydrocarbon receptor
A10	Mm.6988	NM_008525	Alad	Aminolevulinatase, delta-, dehydratase
A11	Mm.250866	NM_013467	Aldh1a1	Aldehyde dehydrogenase family 1, subfamily A1
A12	Mm.12286	NM_007440	Alox12	Arachidonate 12-lipoxygenase
B01	Mm.4584	NM_009660	Alox15	Arachidonate 15-lipoxygenase
B02	Mm.41072	NM_009662	Alox5	Arachidonate 5-lipoxygenase
B03	Mm.305152	NM_009696	ApoE	Apolipoprotein E
B04	Mm.250265	NM_009709	Arnt	Aryl hydrocarbon receptor nuclear translocator
B05	Mm.41475	NM_019652	Asna1	ArsA (bacterial) arsenite transporter, ATP-binding, homolog 1
B06	Mm.22028	NM_026678	Blvra	Biliverdin reductase A
B07	Mm.24021	NM_144923	Blvrb	Biliverdin reductase B (flavin reductase (NADPH))
B08	Mm.22720	NM_021456	Ces1	Carboxylesterase 1
B09	Mm.28191	NM_145603	Ces2	Carboxylesterase 2
B10	Mm.38021	NM_023850	Chst1	Carbohydrate (keratan sulfate Gal-6) sulfotransferase 1
B11	Mm.100940	NM_007744	Comt	Catechol-O-methyltransferase
B12	Mm.377079	NM_009991	Cyp11b2	Cytochrome P450, family 11, subfamily b, polypeptide 2
C01	Mm.1262	NM_007809	Cyp17a1	Cytochrome P450, family 17, subfamily a, polypeptide 1
C02	Mm.5199	NM_007810	Cyp19a1	Cytochrome P450, family 19, subfamily a, polypeptide 1
C03	Mm.14089	NM_009992	Cyp1a1	Cytochrome P450, family 1, subfamily a, polypeptide 1
C04	Mm.15537	NM_009993	Cyp1a2	Cytochrome P450, family 1, subfamily a, polypeptide 2
C05	Mm.6216	NM_010009	Cyp27b1	Cytochrome P450, family 27, subfamily b, polypeptide 1
C06	Mm.218749	NM_009998	Cyp2b10	Cytochrome P450, family 2, subfamily b, polypeptide 10
C07	Mm.20764	NM_007815	Cyp2c29	Cytochrome P450, family 2, subfamily c, polypeptide 29
C08	Mm.21758	NM_021282	Cyp2e1	Cytochrome P450, family 2, subfamily e, polypeptide 1
C09	Mm.1840	NM_007823	Cyp4b1	Cytochrome P450, family 4, subfamily b, polypeptide 1
C10	Mm.22560	NM_029787	Cyb5r3	Cytochrome b5 reductase 3
C11	Mm.9075	NM_010145	Ephx1	Epoxide hydrolase 1, microsomal
C12	Mm.256025	NM_010173	Faah	Fatty acid amide hydrolase
D01	Mm.423078	NM_019395	Fbp1	Fructose biphosphatase 1
D02	Mm.272120	NM_008077	Gad1	Glutamic acid decarboxylase 1
D03	Mm.4784	NM_008078	Gad2	Glutamic acid decarboxylase 2
D04	Mm.100043	NM_144909	Gckr	Glucokinase regulatory protein
D05	Mm.4559	NM_008116	Ggt1	Gamma-glutamyltransferase 1
D06	Mm.589	NM_008155	Gpi1	Glucose phosphate isomerase 1

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Position	UniGene	GenBank	Symbol	Description
D07	Mm.1090	NM_008160	Gpx1	Glutathione peroxidase 1
D08	Mm.371561	NM_030677	Gpx2	Glutathione peroxidase 2
D09	Mm.200916	NM_008161	Gpx3	Glutathione peroxidase 3
D10	Mm.1332	NM_010343	Gpx5	Glutathione peroxidase 5
D11	Mm.283573	NM_010344	Gsr	Glutathione reductase 1
D12	Mm.197422	NM_008181	Gsta1	Glutathione S-transferase, alpha 1 (Ya)
E01	Mm.394593	NM_010356	Gsta3	Glutathione S-transferase, alpha 3
E02	Mm.2662	NM_010357	Gsta4	Glutathione S-transferase, alpha 4
E03	Mm.37199	NM_010358	Gstm1	Glutathione S-transferase, mu 1
E04	Mm.272792	NM_008183	Gstm2	Glutathione S-transferase, mu 2
E05	Mm.347436	NM_010359	Gstm3	Glutathione S-transferase, mu 3
E06	Mm.31203	NM_026764	Gstm4	Glutathione S-transferase, mu 4
E07	Mm.282351	NM_010360	Gstm5	Glutathione S-transferase, mu 5
E08	Mm.378930	NM_013541	Gstp1	Glutathione S-transferase, pi 1
E09	Mm.2746	NM_008185	Gstt1	Glutathione S-transferase, theta 1
E10	Mm.358602	NM_010363	Gstz1	Glutathione transferase zeta 1 (maleylacetoacetate isomerase)
E11	Mm.255848	NM_013820	HK2	Hexokinase 2
E12	Mm.188939	NM_010475	Hsd17b1	Hydroxysteroid (17-beta) dehydrogenase 1
F01	Mm.276466	NM_008290	Hsd17b2	Hydroxysteroid (17-beta) dehydrogenase 2
F02	Mm.5109	NM_008291	Hsd17b3	Hydroxysteroid (17-beta) dehydrogenase 3
F03	Mm.41236	NM_080420	Lpo	Lactoperoxidase
F04	Mm.30059	NM_008538	Marcks	Myristoylated alanine rich protein kinase C substrate
F05	Mm.14796	NM_019946	Mgst1	Microsomal glutathione S-transferase 1
F06	Mm.24679	NM_174995	Mgst2	Microsomal glutathione S-transferase 2
F07	Mm.218286	NM_025569	Mgst3	Microsomal glutathione S-transferase 3
F08	Mm.4668	NM_010824	Mpo	Myeloperoxidase
F09	Mm.147226	NM_008630	Mt2	Metallothionein 2
F10	Mm.2064	NM_013603	Mt3	Metallothionein 3
F11	Mm.89959	NM_010840	Mthfr	5,10-methylenetetrahydrofolate reductase
F12	Mm.14125	NM_008673	Nat1	N-acetyltransferase 1 (arylamine N-acetyltransferase)
G01	Mm.4695	NM_010874	Nat2	N-acetyltransferase 2 (arylamine N-acetyltransferase)
G02	Mm.258415	NM_008713	Nos3	Nitric oxide synthase 3, endothelial cell
G03	Mm.252	NM_008706	Nqo1	NAD(P)H dehydrogenase, quinone 1
G04	Mm.8359	NM_013631	Pklr	Pyruvate kinase liver and red blood cell
G05	Mm.216135	NM_011099	Pkm2	Pyruvate kinase, muscle
G06	Mm.237657	NM_011134	Pon1	Paraoxonase 1
G07	Mm.126984	NM_183308	Pon2	Paraoxonase 2
G08	Mm.9122	NM_173006	Pon3	Paraoxonase 3
G09	Mm.274232	NM_018817	Smarcal1	Swi/SNF related matrix associated, actin dependent regulator of chromatin, subfamily a-like 1
G10	Mm.325800	NM_009223	Snn	Stannin
G11	Mm.315983	NM_175283	Srd5a1	Steroid 5 alpha-reductase 1
G12	Mm.38933	NM_053188	Srd5a2	Steroid 5 alpha-reductase 2
H01	Mm.3317	NM_010368	Gusb	Glucuronidase, beta
H02	Mm.299381	NM_013556	Hprt1	Hypoxanthine guanine phosphoribosyl transferase 1
H03	Mm.2180	NM_008302	Hsp90ab1	Heat shock protein 90kDa alpha (cytosolic), class B member 1
H04	Mm.343110	NM_008084	Gapdh	Glyceraldehyde-3-phosphate dehydrogenase
H05	Mm.328431	NM_007393	Actb	Actin, beta, cytoplasmic
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