

RT² Profiler™ PCR Array: Mouse Cancer PathwayFinder™

Catalog Number**For Real-Time Instruments:**

PAMM-033A	ABI Standard Blocks; Bio-Rad iCycler, MyiQ, and (MJ Research) Chromo 4; and Stratagene Mx3005p, Mx3000p
PAMM-033C	ABI 7500 and 7900HT FAST 96-Well Blocks, ABI StepOnePlus
PAMM-033D	Bio-Rad (MJ Research) Opticon and Opticon 2, Stratagene Mx4000
PAMM-033E	ABI 7900HT 384-Well Block
PAMM-033F	Roche LightCycler 480 96-well Block
PAMM-033G	Roche LightCycler 480 384-well Block

Description

The Mouse Cancer PathwayFinder™ RT² Profiler PCR Array profiles the expression of 84 genes representative of the six biological pathways involved in transformation and tumorigenesis listed below. You can use this array to determine which of the six pathways is involved in your experimental treatment with this array. Then you can then follow up on your Cancer PathwayFinder™ experiment with profiling experiments focusing on the individual pathways involved with one of our other pathway-specific PCR Arrays. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to oncogenesis with this array.

Functional Gene Groupings

Cell Cycle Control and DNA Damage Repair: Atm, Brca1, Ccnd1, Ccne1, Cdc25a, Cdk2, Cdk4, Cdkn1a (p21Waf1), Cdkn2a (p16Ink4), Chek2 (Rad53), E2f1, Mdm2, Pten, Rb1, Trp53.

Apoptosis and Cell Senescence: Apaf1, Bad, Bax, Bcl2, Bcl2l1 (bcl-X), Birc5 (survivin), Casp8, Cflar, Fas (Tnfrsf6), Tert (telomerase), Tnfrsf1a, Tnfrsf10b (DR5).

Signal Transduction Molecules and Transcription Factors: Akt1, Akt2, Ctnnb1 (Catnb), Ets2, Fos, Grb2, Jun, Map2k1 (MEK), Myc, Nfkb1, Nfkbia (IκBα), Pik3r1, Raf1.

Adhesion: Cdh1, Itga2, Itga3, Itga4, Itgav, Itgb1, Itgb3, Mcam, Ncam1.

Angiogenesis: Angpt1, Col18a1 (endostatin), Egfr, Fgf1, Fgfr2, Figf, Hgf, Ifnb1, Igf1, Pdgfa, Pdgfb, Tek, Tgfb1, Tgfb1 (ALK-5), Thbs1, Tnf, Vegfa, Vegfb, Vegfc.

Invasion and Metastasis: Kiss1, Met, Mmp2, Mmp9, Mta1, Mta2, Muc1, Nme4 (Nm23), Plau (uPA), Plaur (uPAR), S100a4, Serpin2, Serpine1 (PAI1), Syk, Timp1, Twist1.

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. Hanahan, D. and Weinberg, R.A. (2000) The Hallmarks Of Cancer. *Cell* **100**: 57-70.
2. Tsatsanis, C. and Spandidos, D.A. (2000) The Role Of Oncogenic Kinases In Human Cancer. *Int J Mol Med* **5**: 583-590.
3. Meyer, T. and Hart, I.R. (1998) Mechanisms Of Tumour Metastasis. *Eur J Cancer* **34**: 214-221.
4. Detmar, M. (2000) Tumor Angiogenesis. *JID Symposium Proceedings* **5**: 20-23.
5. Klingelhutz, A.J. (1999) The Roles Of Telomeres And Telomerase In Cellular Immortalization And The Development Of Cancer. *Anticancer Res* **19**: 4823-4830.
6. Kaufmann, S.H. and Gores, G.J. (2000) Apoptosis In Cancer: Cause And Cure. *BioEssays* **22**: 1007-1017.
7. Lowe, S.W. and Lin, A.W. (2000) Apoptosis In Cancer. *Carcinogenesis* **21**: 485-495.
8. Funk, J.O. (1999) Cancer Cell Cycle Control. *Anticancer Res* **19**: 4772-4780.
9. Molinari, M. (2000) Cell Cycle Checkpoints And Their Inactivation In Human Cancer. *Cell Prolif* **33**: 261-274.
10. Clezardin, P. (1998) Recent Insights Into The Role Of Integrins In Cancer Metastasis. *Cell Mol Life Sci* **54**: 541-548.

Product Specification Sheet

Array Layout: Mouse Cancer PathwayFinder™ RT² Profiler™ PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	Akt1	Akt2	Angpt1	Apaf1	Atm	Bad	Bax	Bcl2	Bcl2l1	Birc5	Brca1	Casp8
B	Ccnd1	Ccne1	Cdc25a	Cdh1	Cdk2	Cdk4	Cdkn1a	Cdkn2a	Cflar	Chek2	Col18a1	Ctnnb1
C	E2f1	Egfr	Ets2	Fas	Fgf1	Fgfr2	Figf	Fos	Grb2	Hgf	Ifnb1	Igf1
D	Itga2	Itga3	Itga4	Itgav	Itgb1	Itgb3	Jun	Kiss1	Map2k1	Mcam	Mdm2	Met
E	Mmp2	Mmp9	Mta1	Mta2	Muc1	Myc	Ncam1	Nfkb1	Nfkbia	Nme4	Pdgfa	Pdgfb
F	Pik3r1	Plau	Plaur	Pten	Raf1	Rb1	S100a4	Serpinb2	Serpine1	Syk	Tek	Tert
G	Tgfb1	Tgfb1	Thbs1	Timp1	Tnf	Tnfrsf10b	Tnfrsf1a	Trp53	Twist1	Vegfa	Vegfb	Vegfc
H	Gusb	Hprt1	Hsp90ab1	Gapdh	Actb	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Mm.6645	NM_009652	Akt1	Thymoma viral proto-oncogene 1
A02	Mm.177194	NM_007434	Akt2	Thymoma viral proto-oncogene 2
A03	Mm.309336	NM_009640	Angpt1	Angiotensinogen 1
A04	Mm.220289	NM_009684	Apaf1	Apoptotic peptidase activating factor 1
A05	Mm.5088	NM_007499	Atm	Ataxia telangiectasia mutated homolog (human)
A06	Mm.4387	NM_007522	Bad	Bcl2-associated death promoter
A07	Mm.19904	NM_007527	Bax	Bcl2-associated X protein
A08	Mm.257460	NM_009741	Bcl2	B-cell leukemia/lymphoma 2
A09	Mm.238213	NM_009743	Bcl2l1	Bcl2-like 1
A10	Mm.8552	NM_009689	Birc5	Baculoviral IAP repeat-containing 5
A11	Mm.244975	NM_009764	Brca1	Breast cancer 1
A12	Mm.336851	NM_009812	Casp8	Caspase 8
B01	Mm.273049	NM_007631	Ccnd1	Cyclin D1
B02	Mm.16110	NM_007633	Ccne1	Cyclin E1
B03	Mm.307103	NM_007658	Cdc25a	Cell division cycle 25 homolog A (S. pombe)
B04	Mm.35605	NM_009864	Cdh1	Cadherin 1
B05	Mm.111326	NM_016756	Cdk2	Cyclin-dependent kinase 2
B06	Mm.6839	NM_009870	Cdk4	Cyclin-dependent kinase 4
B07	Mm.195663	NM_007669	Cdkn1a	Cyclin-dependent kinase inhibitor 1A (P21)
B08	Mm.4733	NM_009877	Cdkn2a	Cyclin-dependent kinase inhibitor 2A
B09	Mm.11778	NM_009805	Cflar	CASP8 and FADD-like apoptosis regulator
B10	Mm.279308	NM_016681	Chek2	CHK2 checkpoint homolog (S. pombe)
B11	Mm.4352	NM_009929	Col18a1	Procollagen, type XVIII, alpha 1
B12	Mm.291928	NM_007614	Ctnnb1	Catenin (cadherin associated protein), beta 1
C01	Mm.18036	NM_007891	E2f1	E2F transcription factor 1
C02	Mm.8534	NM_007912	Egfr	Epidermal growth factor receptor
C03	Mm.290207	NM_011809	Ets2	E26 avian leukemia oncogene 2, 3' domain
C04	Mm.1626	NM_007987	Fas	Fas (TNF receptor superfamily member)
C05	Mm.241282	NM_010197	Fgf1	Fibroblast growth factor 1
C06	Mm.16340	NM_010207	Fgfr2	Fibroblast growth factor receptor 2
C07	Mm.297978	NM_010216	Figf	C-fos induced growth factor
C08	Mm.246513	NM_010234	Fos	FBJ osteosarcoma oncogene
C09	Mm.383426	NM_008163	Grb2	Growth factor receptor bound protein 2
C10	Mm.267078	NM_010427	Hgf	Hepatocyte growth factor
C11	Mm.1245	NM_010510	Ifnb1	Interferon beta 1, fibroblast
C12	Mm.268521	NM_010512	Igf1	Insulin-like growth factor 1
D01	Mm.5007	NM_008396	Itga2	Integrin alpha 2
D02	Mm.57035	NM_013565	Itga3	Integrin alpha 3
D03	Mm.33596	NM_010576	Itga4	Integrin alpha 4

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Position	UniGene	GenBank	Symbol	Description
D04	Mm.227	NM_008402	Itgav	Integrin alpha V
D05	Mm.263396	NM_010578	Itgb1	Integrin beta 1 (fibronectin receptor beta)
D06	Mm.87150	NM_016780	Itgb3	Integrin beta 3
D07	Mm.275071	NM_010591	Jun	Jun oncogene
D08	Mm.432459	NM_178260	Kiss1	KiSS-1 metastasis-suppressor
D09	Mm.248907	NM_008927	Map2k1	Mitogen activated protein kinase kinase 1
D10	Mm.275003	NM_023061	Mcam	Melanoma cell adhesion molecule
D11	Mm.22670	NM_010786	Mdm2	Transformed mouse 3T3 cell double minute 2
D12	Mm.86844	NM_008591	Met	Met proto-oncogene
E01	Mm.29564	NM_008610	Mmp2	Matrix metalloproteinase 2
E02	Mm.4406	NM_013599	Mmp9	Matrix metalloproteinase 9
E03	Mm.212577	NM_054081	Mta1	Metastasis associated 1
E04	Mm.25339	NM_011842	Mta2	Metastasis-associated gene family, member 2
E05	Mm.16193	NM_013605	Muc1	Mucin 1, transmembrane
E06	Mm.2444	NM_010849	Myc	Myelocytomatosis oncogene
E07	Mm.4974	NM_010875	Ncam1	Neural cell adhesion molecule 1
E08	Mm.256765	NM_008689	Nfkb1	Nuclear factor of kappa light chain gene enhancer in B-cells 1, p105
E09	Mm.170515	NM_010907	Nfkbia	Nuclear factor of kappa light chain gene enhancer in B-cells inhibitor, alpha
E10	Mm.41787	NM_019731	Nme4	Expressed in non-metastatic cells 4, protein
E11	Mm.2675	NM_008808	Pdgfa	Platelet derived growth factor, alpha
E12	Mm.144089	NM_011057	Pdgfb	Platelet derived growth factor, B polypeptide
F01	Mm.259333	NM_001024955	Pik3r1	Phosphatidylinositol 3-kinase, regulatory subunit, polypeptide 1 (p85 alpha)
F02	Mm.4183	NM_008873	Plau	Plasminogen activator, urokinase
F03	Mm.1359	NM_011113	Plaur	Plasminogen activator, urokinase receptor
F04	Mm.245395	NM_008960	Pten	Phosphatase and tensin homolog
F05	Mm.184163	NM_029780	Raf1	V-raf-leukemia viral oncogene 1
F06	Mm.273862	NM_009029	Rb1	Retinoblastoma 1
F07	Mm.3925	NM_011311	S100a4	S100 calcium binding protein A4
F08	Mm.271870	NM_011111	Serpib2	Serine (or cysteine) peptidase inhibitor, clade B, member 2
F09	Mm.250422	NM_008871	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
F10	Mm.375031	NM_011518	Syk	Spleen tyrosine kinase
F11	Mm.14313	NM_013690	Tek	Endothelial-specific receptor tyrosine kinase
F12	Mm.10109	NM_009354	Tert	Telomerase reverse transcriptase
G01	Mm.248380	NM_011577	Tgfb1	Transforming growth factor, beta 1
G02	Mm.197552	NM_009370	Tgfr1	Transforming growth factor, beta receptor I
G03	Mm.4159	NM_011580	Thbs1	Thrombospondin 1
G04	Mm.8245	NM_011593	Timp1	Tissue inhibitor of metalloproteinase 1
G05	Mm.1293	NM_013693	Tnf	Tumor necrosis factor
G06	Mm.193430	NM_020275	Tnfrsf10b	Tumor necrosis factor receptor superfamily, member 10b
G07	Mm.1258	NM_011609	Tnfrsf1a	Tumor necrosis factor receptor superfamily, member 1a
G08	Mm.222	NM_011640	Trp53	Transformation related protein 53
G09	Mm.3280	NM_011658	Twist1	Twist gene homolog 1 (Drosophila)
G10	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
G11	Mm.15607	NM_011697	Vegfb	Vascular endothelial growth factor B
G12	Mm.1402	NM_009506	Vegfc	Vascular endothelial growth factor C
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