

RT² Profiler™ PCR Array:

Mouse Breast Cancer and Estrogen Receptor Signaling

Catalog Number

PAMM-005A

PAMM-005C

PAMM-005D

PAMM-005E

PAMM-005F

PAMM-005G

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 Breast Cancer and Estrogen Receptor Signaling RT² Profiler PCR Array profiles the expression of 84 genes related to breast cancer regulation and estrogen receptor-dependent signal transduction. Genes directly associated with breast cancer are included as well as related genes involved in estrogen-dependent signaling. Genes known to be preferentially expressed in breast cancer cells are represented for use as biomarkers of the disease. Also included are genes associated with cancer cells' response to chemotherapy. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to breast cancer and estrogen receptor signaling with this array.

Functional Gene Groupings

Genes Directly Associated with Breast Cancer: Cdkn1a (p21^{Wap1/Cip1}), Cldn7 (claudin-7), Clu (clusterin), Erbb2 (Her-2), Fgf1, Flrt1 (fibronectin), Gabrp, Gnas, Id2 (Idb2), Itga6 (α6 integrin), Itgb4 (β4 integrin), Klf5 (GC Box BP), Krt19, Lcn2 (NGAL/lipocalin 2), Mt3 (metallothionein-III), Muc1 (mucin), Ptgs2 (COX-2), Rac2 (p21Rac2), Sprr1b (Spr1), Thbs1, Thbs2, Tnfaip2 (B94), Tob2.

Genes Associated with the Estrogen Receptor Signaling Pathway: Ar, C3 (Complement component 3), Ccnd1, Ctsd (cathepsin D), Esr1, Esr2, Gata3, Hspb1 (Hsp25), Krt18, Krt1-19, Pgr, Slc7a5, Stc2, Tff1 (pS2).

Genes Associated with Breast Cancer Prognosis: Bad, Bag1, Bcl2, Ccna1, Ccna2, Ccnd1, Ccne2, Cdh1 (E-cadherin), Cdkn1b (p27Kip1), Cdkn2a (p16INK4a), Col6a1, Ctnnb1 (b-catenin), Ctsb (cathepsin B), Egfr, Erbb2 (Her-2), Esr1, Esr2, Fas (Tnfrsf6), FasL (Tnfsf6), Fosl1 (FRA-1), Gata3, Gsn (Gelsolin), Igfbp2, Il2ra, Il6, Il6ra, Il6st (glycoprotein 130), Itga6, Jun, Klf5, Krt19, Map2k7, Mki67 (Ki-67), Klk1b4 (Ngfa), Ngfb, Ngfr, Nme1 (NM23A), Pgr, Plau (uPA), Pten, Serpinb5 (maspin), Serpine1 (PAI-1), Tgfa, Thbs1 (thrombospondin-1), Tie1 (Tie-1), Tob2, Top2a (topoisomerase lia), Trp53, Vegfa.

Genes Associated with the Response to Chemotherapy: Bcl2, Bcl2l2, Cd44, Cyp19a1, Dlc1, Esr1, Esr2, Hmgb1, Kit, Nfyb, Pappa, Pgr, Rpl27, Vegfa.

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.

Product Specification Sheet

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

References

1. Jiang Y, et al. Discovery of differentially expressed genes in human breast cancer using subtracted cDNA libraries and cDNA microarrays. *Oncogene* 2002 Mar 28; **21** (14): 2270-82
2. Sotiriou C, et al. Gene expression profiles derived from fine needle aspiration correlate with response to systemic chemotherapy in breast cancer. *Breast Cancer Res.* 2002; **4** (3): R3.
3. Ahr A, et al. Molecular classification of breast cancer patients by gene expression profiling. *J Pathol.* 2001 Oct; **195** (3): 312-20.
4. Gruvberger S. Estrogen receptor status in breast cancer is associated with remarkably distinct gene expression patterns. *Cancer Res.* 2001 Aug 15; **61** (16): 5979-84.
5. Zajchowski DA, et al. Identification of gene expression profiles that predict the aggressive behavior of breast cancer cells. *Cancer Res.* 2001 Jul 1; **61** (13): 5168-78
6. Kim H, et al. Human kallikrein gene 5 (KLK5) expression is an indicator of poor prognosis in ovarian cancer. *Br J Cancer.* 2001 Mar 2; **84** (5): 643-50.
7. Umekita Y, et al. Co-expression of epidermal growth factor receptor and transforming growth factor-alpha predicts worse prognosis in breast-cancer patients. *Int J Cancer.* 2000 Nov 20; **89** (6): 484-7.
8. Hui R, et al. INK4a gene expression and methylation in primary breast cancer: overexpression of p16INK4a messenger RNA is a marker of poor prognosis. *Clin Cancer Res.* 2000 Jul; **6** (7): 2777-87.
9. Nelson NJ. Plasminogen activator proteins tested as prognostic markers. *J Natl Cancer Inst.* 2000 Jun 7; **92** (11): 866-8.
10. Karczewska A, et al. Expression of interleukin-6, interleukin-6 receptor, and glycoprotein 130 correlates with good prognoses for patients with breast carcinoma. *Cancer.* 2000 May 1; **88** (9): 2061-71.
11. Lin SY, et al. Beta-catenin, a novel prognostic marker for breast cancer: its roles in cyclin D1 expression and cancer progression. *Proc Natl Acad Sci U S A.* 2000 Apr 11; **97** (INK4a gene expression and methylation in primary breast 8): 4262-6.
12. Martin KJ, et al. Linking gene expression patterns to therapeutic groups in breast cancer. *Cancer Res.* 2000 Apr 15; **60** (8): 2232-8.
13. Nacht M, et al. Combining serial analysis of gene expression and array technologies to identify genes differentially expressed in breast cancer. *Cancer Res.* 1999 Nov 1; **59** (21): 5464-70.

Product Specification Sheet

Array Layout: Mouse Breast Cancer and Estrogen Receptor Signaling PCR Array

	1	2	3	4	5	6	7	8	9	10	11	12
A	Ar	Bad	Bag1	Bcl2	Bcl2l2	C3	Ccna1	Ccna2	Ccnd1	Ccne2	Cd44	Cdh1
B	Cdkn1a	Cdkn1b	Cdkn2a	Cldn7	Clu	Col6a1	Ctnnb1	Ctsb	Ctsd	Cyp19a1	Dlc1	Egfr
C	ErbB2	Esr1	Esr2	Fas	Fasl	Fgf1	Flrt1	Fosl1	Gabrp	Gata3	Gnas	Gsn
D	Hmgb1	Hspb1	Id2	Igfbp2	Il2ra	Il6	Il6ra	Il6st	Itga6	Itgb4	Jun	Kit
E	Klf5	Klk5	Krt18	Krt19	Lcn2	Map2k7	Mki67	Mt3	Muc1	Nfyb	Klk1b4	Ngfb
F	Ngfr	Nme1	Pappa	Pgr	Plau	Pten	Ptgs2	Rac2	Rpl27	Serpib5	Serpine1	Slc7a5
G	Spr1b	Stc2	Tff1	Tgfa	Thbs1	Thbs2	Tie1	Tnfaip2	Tob2	Top2a	Trp53	Vegfa
H	Gusb	Hprt1	Hsp90ab1	Gapdh	Actb	MGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene Table

Position	UniGene	GenBank	Symbol	Description
A01	Mm.39005	NM_013476	Ar	Androgen receptor
A02	Mm.4387	NM_007522	Bad	Bcl-associated death promoter
A03	Mm.688	NM_009736	Bag1	Bcl2-associated athanogene 1
A04	Mm.257460	NM_009741	Bcl2	B-cell leukemia/lymphoma 2
A05	Mm.6967	NM_007537	Bcl2l2	Bcl2-like 2
A06	Mm.19131	NM_009778	C3	Complement component 3
A07	Mm.4815	NM_007628	Ccna1	Cyclin A1
A08	Mm.4189	NM_009828	Ccna2	Cyclin A2
A09	Mm.273049	NM_007631	Ccnd1	Cyclin D1
A10	Mm.35867	NM_009830	Ccne2	Cyclin E2
A11	Mm.423621	NM_009851	Cd44	CD44 antigen
A12	Mm.35605	NM_009864	Cdh1	Cadherin 1
B01	Mm.195663	NM_007669	Cdkn1a	Cyclin-dependent kinase inhibitor 1A (P21)
B02	Mm.2958	NM_009875	Cdkn1b	Cyclin-dependent kinase inhibitor 1B
B03	Mm.4733	NM_009877	Cdkn2a	Cyclin-dependent kinase inhibitor 2A
B04	Mm.281896	NM_016887	Cldn7	Claudin 7
B05	Mm.200608	NM_013492	Clu	Clusterin
B06	Mm.2509	NM_009933	Col6a1	Procollagen, type VI, alpha 1
B07	Mm.291928	NM_007614	Ctnnb1	Catenin (cadherin associated protein), beta 1
B08	Mm.236553	NM_007798	Ctsb	Cathepsin B
B09	Mm.231395	NM_009983	Ctsd	Cathepsin D
B10	Mm.5199	NM_007810	Cyp19a1	Cytochrome P450, family 19, subfamily a, polypeptide 1
B11	Mm.210875	NM_015802	Dlc1	Deleted in liver cancer 1
B12	Mm.8534	NM_007912	Egfr	Epidermal growth factor receptor
C01	Mm.290822	NM_001003817	ErbB2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
C02	Mm.9213	NM_007956	Esr1	Estrogen receptor 1 (alpha)
C03	Mm.2561	NM_010157	Esr2	Estrogen receptor 2 (beta)
C04	Mm.1626	NM_007987	Fas	Fas (TNF receptor superfamily member)
C05	Mm.3355	NM_010177	Fasl	Fas ligand (TNF superfamily, member 6)
C06	Mm.241282	NM_010197	Fgf1	Fibroblast growth factor 1
C07	Mm.386930	NM_201411	Flrt1	Fibronectin leucine rich transmembrane protein 3
C08	Mm.6215	NM_010235	Fosl1	Fos-like antigen 1
C09	Mm.99989	NM_146017	Gabrp	Gamma-aminobutyric acid (GABA-A) receptor, pi
C10	Mm.313866	NM_008091	Gata3	GATA binding protein 3
C11	Mm.125770	NM_010309	Gnas	GNAS (guanine nucleotide binding protein, alpha stimulating) complex locus
C12	Mm.21109	NM_146120	Gsn	Gelsolin
D01	Mm.313345	NM_010439	Hmgb1	High mobility group box 1
D02	Mm.13849	NM_013560	Hspb1	Heat shock protein 1
D03	Mm.34871	NM_010496	Id2	Inhibitor of DNA binding 2

Product Specification Sheet

Position	UniGene	GenBank	Symbol	Description
D04	Mm.141936	NM_008342	igfbp2	Insulin-like growth factor binding protein 2
D05	Mm.915	NM_008367	Il2ra	Interleukin 2 receptor, alpha chain
D06	Mm.1019	NM_031168	Il6	Interleukin 6
D07	Mm.2856	NM_010559	Il6ra	Interleukin 6 receptor, alpha
D08	Mm.4364	NM_010560	Il6st	Interleukin 6 signal transducer
D09	Mm.225096	NM_008397	Itga6	Integrin alpha 6
D10	Mm.213873	NM_001005607	Itgb4	Integrin beta 4
D11	Mm.275071	NM_010591	Jun	Jun oncogene
D12	Mm.247073	NM_021099	Kit	Kit oncogene
E01	Mm.30262	NM_009769	Klf5	Kruppel-like factor 5
E02	Mm.20024	XM_917001	Klk5	Kallikrein related-peptidase 5
E03	Mm.22479	NM_010664	Krt18	Keratin 18
E04	Mm.439699	NM_008471	Krt19	Keratin 19
E05	Mm.9537	NM_008491	Lcn2	Lipocalin 2
E06	Mm.3906	NM_011944	Map2k7	Mitogen activated protein kinase kinase 7
E07	Mm.4078	XM_133912	Mki67	Antigen identified by monoclonal antibody Ki 67
E08	Mm.2064	NM_013603	Mt3	Metallothionein 3
E09	Mm.16193	NM_013605	Muc1	Mucin 1, transmembrane
E10	Mm.245998	NM_010914	Nfyb	Nuclear transcription factor-Y beta
E11	Mm.378974	NM_010915	Klk1b4	Kallikrein 1-related peptidase b4
E12	Mm.1259	NM_013609	Ngfb	Nerve growth factor, beta
F01	Mm.283893	NM_033217	Ngfr	Nerve growth factor receptor (TNFR superfamily, member 16)
F02	Mm.299813	NM_008704	Nme1	Expressed in non-metastatic cells 1, protein
F03	Mm.317854	NM_021362	Pappa	Pregnancy-associated plasma protein A
F04	Mm.12798	NM_008829	Pgr	Progesterone receptor
F05	Mm.4183	NM_008873	Plau	Plasminogen activator, urokinase
F06	Mm.245395	NM_008960	Pten	Phosphatase and tensin homolog
F07	Mm.292547	NM_011198	Ptgs2	Prostaglandin-endoperoxide synthase 2
F08	Mm.1972	NM_009008	Rac2	RAS-related C3 botulinum substrate 2
F09	Mm.340658	NM_011289	Rpl27	Ribosomal protein L27
F10	Mm.268618	NM_009257	Serpnb5	Serine (or cysteine) peptidase inhibitor, clade B, member 5
F11	Mm.250422	NM_008871	Serpine1	Serine (or cysteine) peptidase inhibitor, clade E, member 1
F12	Mm.27943	NM_011404	Slc7a5	Solute carrier family 7 (cationic amino acid transporter, y+ system), member 5
G01	Mm.140151	NM_009265	Sprr1b	Small proline-rich protein 1B
G02	Mm.32506	NM_011491	Stc2	Stanniocalcin 2
G03	Mm.2854	NM_009362	Tff1	Trefoil factor 1
G04	Mm.137222	NM_031199	Tgfa	Transforming growth factor alpha
G05	Mm.4159	NM_011580	Thbs1	Thrombospondin 1
G06	Mm.26688	NM_011581	Thbs2	Thrombospondin 2
G07	Mm.4345	NM_011587	Tie1	Tyrosine kinase receptor 1
G08	Mm.255332	NM_009396	Tnfaip2	Tumor necrosis factor, alpha-induced protein 2
G09	Mm.323595	NM_020507	Tob2	Transducer of ERBB2, 2
G10	Mm.4237	NM_011623	Top2a	Topoisomerase (DNA) II alpha
G11	Mm.222	NM_011640	Trp53	Transformation related protein 53
G12	Mm.282184	NM_009505	Vegfa	Vascular endothelial growth factor A
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