

RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Rat Breast Cancer

Cat. no. 330231 PARN-131ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm® BioMark™



Sample & Assay Technologies

Description

The Rat Breast Cancer RT² Profiler PCR Array profiles the expression of 84 key genes commonly involved in the dysregulation of signal transduction and other normal biological processes during breast carcinogenesis and in breast cancer cell lines. Breast cancer is a heterogeneous disease, classified molecularly into normal breast-like, luminal, HER2-like, and basal-like (also inaccurately called triple-negative) tumors. Intense research into carcinogenic mechanisms identified dysregulated genes, either via functional alterations due to somatic mutations, gene expression alterations, or altered posttranslational modifications. Carcinogenic changes to gene expression affect cellular signaling and the function of entire biological pathways. Focused research of these dysregulated genes and their coincidence with known tumor classification markers can identify the underlying molecular mechanisms of breast cancer initiation, progression or metastasis of this deadly disease. This array includes genes involved in tumor classification, signal transduction, and other commonly affected pathways such as angiogenesis, adhesion, proteolysis, cell cycle, and apoptosis. Using real-time PCR, your research study can easily and reliably analyze the expression of a focused panel of genes involved in the molecular mechanisms of breast oncogenesis with this array.

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

Shipping and storage

RT² Profiler PCR Arrays in formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

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.

Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	Abcb1a	Abcg2	Adam23	Akt1	Apc	Ar	Atm	Bad	Bcl2	Birc5	Brca1	Brca2
B	Ccna1	Ccnd1	Ccnd2	Ccne1	Cdh1	Cdh13	Cdk2	Cdkn1a	Cdkn1c	Cdkn2a	Csf1	Cst6
C	Ctlnb1	Ctsd	Egf	Egfr	Erb2	Esr1	Esr2	Foxa1	Gata3	Gli1	Grb7	Gstp1
D	Hic1	Id1	Igf1	Igf1r	Igf1bp3	Il6	Jun	Krt18	Krt19	Krt5	Krt8	Mapk1
E	Mapk3	Mapk8	Mgmt	Mki67	Mlh1	Mmp2	Mmp9	Muc1	Myc	Nme1	Notch1	Nr3c1
F	Pgr	Plau	Prdm2	Pten	Ptgs2	Pycard	Rarb	Rassf1	Rb1	Serpine1	Sfn	Sfrp1
G	Slc39a6	Sllf2	Snai2	Src	Tff3	Tgfb1	Thbs1	Tp53	Tp73	Twist1	Vegfa	Xbp1
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.154810	NM_133401	Abcb1a	ATP-binding cassette, sub-family B (MDR/TAP), member 1A
A02	Rn.13131	NM_181381	Abcg2	ATP-binding cassette, subfamily G (WHITE), member 2
A03	Rn.24184	NM_001029899	Adam23	ADAM metalloproteinase domain 23
A04	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A05	Rn.88057	NM_012499	Apc	Adenomatous polyposis coli
A06	Rn.9813	NM_012502	Ar	Androgen receptor
A07	Rn.214048	NM_001106821	Atm	Ataxia telangiectasia mutated homolog (human)
A08	Rn.36696	NM_022698	Bad	BCL2-associated agonist of cell death
A09	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
A10	Rn.54471	NM_022274	Birc5	Baculoviral IAP repeat-containing 5
A11	Rn.48840	NM_012514	Brca1	Breast cancer 1
A12	Rn.103225	NM_031542	Brca2	Breast cancer 2
B01	Rn.102823	NM_001011949	Ccna1	Cyclin A1
B02	Rn.22279	NM_171992	Ccnd1	Cyclin D1
B03	Rn.96083	NM_022267	Ccnd2	Cyclin D2
B04	Rn.15455	NM_001100821	Ccne1	Cyclin E1
B05	Rn.1303	NM_031334	Cdh1	Cadherin 1
B06	Rn.23860	NM_138889	Cdh13	Cadherin 13
B07	Rn.104460	NM_199501	Cdk2	Cyclin dependent kinase 2
B08	Rn.10089	NM_080782	Cdkn1a	Cyclin-dependent kinase inhibitor 1A
B09	Rn.162507	NM_182735	Cdkn1c	Cyclin-dependent kinase inhibitor 1C
B10	Rn.48717	NM_031550	Cdkn2a	Cyclin-dependent kinase inhibitor 2A
B11	Rn.83632	NM_023981	Csf1	Colony stimulating factor 1 (macrophage)
B12	Rn.9609	NM_133566	Cst6	Cystatin E/M
C01	Rn.112601	NM_053357	Ctlnb1	Catenin (cadherin associated protein), beta 1
C02	Rn.11085	NM_134334	Ctsd	Cathepsin D
C03	Rn.6075	NM_012842	Egf	Epidermal growth factor
C04	Rn.37227	NM_031507	Egfr	Epidermal growth factor receptor
C05	Rn.93966	NM_017003	Erb2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
C06	Rn.10595	NM_012689	Esr1	Estrogen receptor 1
C07	Rn.37460	NM_012754	Esr2	Estrogen receptor 2 (ER beta)
C08	Rn.10470	NM_012742	Foxa1	Forkhead box A1
C09	Rn.92350	NM_133293	Gata3	GATA binding protein 3
C10	Rn.219157	XM_345832	Gli1	GLI family zinc finger 1
C11	Rn.28109	NM_053403	Grb7	Growth factor receptor bound protein 7
C12	Rn.87063	NM_012577	Gstp1	Glutathione S-transferase pi 1
D01	Rn.11570	NM_001107021	Hic1	Hypermethylated in cancer 1
D02	Rn.2113	NM_012797	Id1	Inhibitor of DNA binding 1
D03	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
D04	Rn.10957	NM_052807	Igf1r	Insulin-like growth factor 1 receptor
D05	Rn.26369	NM_012588	Igf1bp3	Insulin-like growth factor binding protein 3
D06	Rn.9873	NM_012589	Il6	Interleukin 6
D07	Rn.93714	NM_021835	Jun	Jun oncogene
D08	Rn.103924	NM_053976	Krt18	Keratin 18

Position	UniGene	GenBank	Symbol	Description
D09	Rn.9359	NM_199498	Krt19	Keratin 19
D10	Rn.120205	NM_183333	Krt5	Keratin 5
D11	Rn.11083	NM_199370	Krt8	Keratin 8
D12	Rn.34914	NM_053842	Mapk1	Mitogen activated protein kinase 1
E01	Rn.2592	NM_017347	Mapk3	Mitogen activated protein kinase 3
E02	Rn.4090	XM_341399	Mapk8	Mitogen-activated protein kinase 8
E03	Rn.9836	NM_012861	Mgmt	O-6-methylguanine-DNA methyltransferase
E04	Rn.73551	XM_225460	Mki67	Antigen identified by monoclonal antibody Ki-67
E05	Rn.20391	NM_031053	Mlh1	MutL homolog 1 (E. coli)
E06	Rn.6422	NM_031054	Mmp2	Matrix metalloproteinase 2
E07	Rn.10209	NM_031055	Mmp9	Matrix metalloproteinase 9
E08	Rn.10779	NM_012602	Muc1	Mucin 1, cell surface associated
E09	Rn.12072	NM_012603	Myc	Myelocytomatosis oncogene
E10	Rn.6236	NM_138548	Nme1	Non-metastatic cells 1, protein (NM23A) expressed in
E11	Rn.25046	NM_001105721	Notch1	Notch homolog 1, translocation-associated (Drosophila)
E12	Rn.90070	NM_012576	Nr3c1	Nuclear receptor subfamily 3, group C, member 1
F01	Rn.10303	NM_022847	Pgr	Progesterone receptor
F02	Rn.6064	NM_013085	Plau	Plasminogen activator, urokinase
F03	Rn.202632	NM_001077648	Prdm2	PR domain containing 2, with ZNF domain
F04	Rn.22158	NM_031606	Pten	Phosphatase and tensin homolog
F05	Rn.44369	NM_017232	Ptgs2	Prostaglandin-endoperoxide synthase 2
F06	Rn.7817	NM_172322	Pycard	PYD and CARD domain containing
F07	Rn.220045	XM_223843	Rarb	Retinoic acid receptor, beta
F08	Rn.83042	NM_001007754	Rassf1	Ras association (RalGDS/AF-6) domain family member 1
F09	Rn.55115	NM_017045	Rb1	Retinoblastoma 1
F10	Rn.29367	NM_012620	Serpine1	Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
F11	Rn.145079	XM_232745	Sfn	Stratifin
F12	Rn.163333	XM_224987	Sfrp1	Secreted frizzled-related protein 1
G01	Rn.99415	NM_001024745	Slc39a6	Solute carrier family 39 (zinc transporter), member 6
G02	Rn.146652	NM_022632	Slit2	Slit homolog 2 (Drosophila)
G03	Rn.43117	NM_013035	Snai2	Snail homolog 2 (Drosophila)
G04	Rn.112600	NM_031977	Src	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G05	Rn.87477	NM_013042	TF3	Trefoil factor 3, intestinal
G06	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G07	Rn.185771	NM_001013062	Thbs1	Thrombospondin 1
G08	Rn.54443	NM_030989	Tp53	Tumor protein p53
G09	Rn.103860	NM_001108696	Tp73	Tumor protein p73
G10	Rn.161904	NM_053530	Twist1	Twist homolog 1 (Drosophila)
G11	Rn.1923	NM_031836	Vegfa	Vascular endothelial growth factor A
G12	Rn.101044	NM_001004210	Xbp1	X-box binding protein 1
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat 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, 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.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² SYBR Green qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT ² SYBR Green ROX™ qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT ² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* 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.

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