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

Human Breast Cancer

Cat. no. 330231 PAHS-131ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² 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
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
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 F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Human 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	ABCB1	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	CTNNB1	CTSD	EGF	EGFR	ERBB2	ESR1	ESR2	FOXA1	GATA3	GLI1	GRB7	GSTP1
D	HIC1	ID1	IGF1	IGF1R	IGFBP3	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	SLIT2	SNAI2	SRC	TFF3	TGFB1	THBS1	TP53	TP73	TWIST1	VEGFA	XBP1
H	ACTB	B2M	GAPDH	HPRT1	RPLP0	HGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Hs.489033	NM_000927	ABCB1	ATP-binding cassette, sub-family B (MDR/TAP), member 1
A02	Hs.480218	NM_004827	ABCG2	ATP-binding cassette, sub-family G (WHITE), member 2
A03	Hs.591643	NM_003812	ADAM23	ADAM metallopeptidase domain 23
A04	Hs.525622	NM_005163	AKT1	V-akt murine thymoma viral oncogene homolog 1
A05	Hs.158932	NM_000038	APC	Adenomatous polyposis coli
A06	Hs.496240	NM_000044	AR	Androgen receptor
A07	Hs.367437	NM_000051	ATM	Ataxia telangiectasia mutated
A08	Hs.370254	NM_004322	BAD	BCL2-associated agonist of cell death
A09	Hs.150749	NM_000633	BCL2	B-cell CLL/lymphoma 2
A10	Hs.728893	NM_001168	BIRC5	Baculoviral IAP repeat containing 5
A11	Hs.194143	NM_007294	BRCA1	Breast cancer 1, early onset
A12	Hs.34012	NM_000059	BRCA2	Breast cancer 2, early onset
B01	Hs.417050	NM_003914	CCNA1	Cyclin A1
B02	Hs.523852	NM_053056	CCND1	Cyclin D1
B03	Hs.376071	NM_001759	CCND2	Cyclin D2
B04	Hs.244723	NM_001238	CCNE1	Cyclin E1
B05	Hs.461086	NM_004360	CDH1	Cadherin 1, type 1, E-cadherin (epithelial)
B06	Hs.654386	NM_001257	CDH13	Cadherin 13, H-cadherin (heart)
B07	Hs.19192	NM_001798	CDK2	Cyclin-dependent kinase 2
B08	Hs.370771	NM_000389	CDKN1A	Cyclin-dependent kinase inhibitor 1A (p21, Cip1)
B09	Hs.106070	NM_000076	CDKN1C	Cyclin-dependent kinase inhibitor 1C (p57, Kip2)
B10	Hs.512599	NM_000077	CDKN2A	Cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4)
B11	Hs.591402	NM_000757	CSF1	Colony stimulating factor 1 (macrophage)
B12	Hs.139389	NM_001323	CST6	Cystatin E/M
C01	Hs.476018	NM_001904	CTNNB1	Catenin (cadherin-associated protein), beta 1, 88kDa
C02	Hs.121575	NM_001909	CTSD	Cathepsin D
C03	Hs.419815	NM_001963	EGF	Epidermal growth factor
C04	Hs.488293	NM_005228	EGFR	Epidermal growth factor receptor
C05	Hs.446352	NM_004448	ERBB2	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian)
C06	Hs.208124	NM_000125	ESR1	Estrogen receptor 1
C07	Hs.729020	NM_001437	ESR2	Estrogen receptor 2 (ER beta)
C08	Hs.163484	NM_004496	FOXA1	Forkhead box A1
C09	Hs.524134	NM_002051	GATA3	GATA binding protein 3
C10	Hs.632702	NM_005269	GLI1	GLI family zinc finger 1
C11	Hs.86859	NM_005310	GRB7	Growth factor receptor-bound protein 7
C12	Hs.523836	NM_000852	GSTP1	Glutathione S-transferase pi 1
D01	Hs.72956	NM_006497	HIC1	Hypermethylated in cancer 1
D02	Hs.504609	NM_002165	ID1	Inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
D03	Hs.160562	NM_000618	IGF1	Insulin-like growth factor 1 (somatomedin C)
D04	Hs.643120	NM_000875	IGF1R	Insulin-like growth factor 1 receptor
D05	Hs.450230	NM_000598	IGFBP3	Insulin-like growth factor binding protein 3
D06	Hs.654458	NM_000600	IL6	Interleukin 6 (interferon, beta 2)
D07	Hs.714791	NM_002228	JUN	Jun proto-oncogene
D08	Hs.406013	NM_000224	KRT18	Keratin 18

Position	UniGene	GenBank	Symbol	Description
D09	Hs.654568	NM_002276	KRT19	Keratin 19
D10	Hs.433845	NM_000424	KRT5	Keratin 5
D11	Hs.533782	NM_002273	KRT8	Keratin 8
D12	Hs.431850	NM_002745	MAPK1	Mitogen-activated protein kinase 1
E01	Hs.861	NM_002746	MAPK3	Mitogen-activated protein kinase 3
E02	Hs.138211	NM_002750	MAPK8	Mitogen-activated protein kinase 8
E03	Hs.501522	NM_002412	MGMT	O-6-methylguanine-DNA methyltransferase
E04	Hs.689823	NM_002417	MKI67	Antigen identified by monoclonal antibody Ki-67
E05	Hs.195364	NM_000249	MLH1	MutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)
E06	Hs.513617	NM_004530	MMP2	Matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
E07	Hs.297413	NM_004994	MMP9	Matrix metallopeptidase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)
E08	Hs.89603	NM_001018016	MUC1	Mucin 1, cell surface associated
E09	Hs.202453	NM_002467	MYC	V-myc myelocytomatosis viral oncogene homolog (avian)
E10	Hs.118638	NM_000269	NME1	Non-metastatic cells 1, protein (NM23A) expressed in
E11	Hs.495473	NM_017617	NOTCH1	Notch 1
E12	Hs.122926	NM_000176	NR3C1	Nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)
F01	Hs.32405	NM_000926	PGR	Progesterone receptor
F02	Hs.77274	NM_002658	PLAU	Plasminogen activator, urokinase
F03	Hs.371823	NM_015866	PRDM2	PR domain containing 2, with ZNF domain
F04	Hs.500466	NM_000314	PTEN	Phosphatase and tensin homolog
F05	Hs.196384	NM_000963	PTGS2	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
F06	Hs.499094	NM_013258	PYCARD	PYD and CARD domain containing
F07	Hs.654490	NM_000965	RARB	Retinoic acid receptor, beta
F08	Hs.476270	NM_007182	RASSF1	Ras association (RalGDS/AF-6) domain family member 1
F09	Hs.408528	NM_000321	RB1	Retinoblastoma 1
F10	Hs.414795	NM_000602	SERPINE1	Serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1
F11	Hs.523718	NM_006142	SFN	Stratifin
F12	Hs.713546	NM_003012	SFRP1	Secreted frizzled-related protein 1
G01	Hs.729034	NM_012319	SLC39A6	Solute carrier family 39 (zinc transporter), member 6
G02	Hs.29802	NM_004787	SLIT2	Slit homolog 2 (Drosophila)
G03	Hs.360174	NM_003068	SNAI2	Snail homolog 2 (Drosophila)
G04	Hs.195659	NM_005417	SRC	V-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian)
G05	Hs.82961	NM_003226	TFF3	Trefoil factor 3 (intestinal)
G06	Hs.645227	NM_000660	TGFB1	Transforming growth factor, beta 1
G07	Hs.164226	NM_003246	THBS1	Thrombospondin 1
G08	Hs.654481	NM_000546	TP53	Tumor protein p53
G09	Hs.697294	NM_005427	TP73	Tumor protein p73
G10	Hs.66744	NM_000474	TWIST1	Twist homolog 1 (Drosophila)
G11	Hs.73793	NM_003376	VEGFA	Vascular endothelial growth factor A
G12	Hs.437638	NM_005080	XBP1	X-box binding protein 1
H01	Hs.520640	NM_001101	ACTB	Actin, beta
H02	Hs.534255	NM_004048	B2M	Beta-2-microglobulin
H03	Hs.592355	NM_002046	GAPDH	Glyceraldehyde-3-phosphate dehydrogenase
H04	Hs.412707	NM_000194	HPRT1	Hypoxanthine phosphoribosyltransferase 1
H05	Hs.546285	NM_001002	RPLP0	Ribosomal protein, large, P0
H06	N/A	SA_00105	HGDC	Human 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.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² 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
RT² 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
RT² 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.

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.

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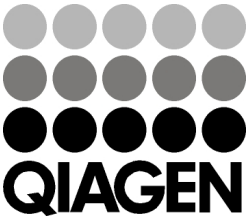

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