

miRCURY LNA™ miRNA Focus PCR Panels

Human Breast Cancer Product Data Sheet

Cat. no. 339325 YAHS-209Y

For mature miRNA expression profiling using real-time PCR

Format	Suitable real-time cyclers	Plate	Cat. no.
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	96-well	YAHS-209YA
C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)	96-well	YAHS-209YC
D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®	96-well	YAHS-209YD
E	Applied Biosystems® models 7900HT (384-well block), ViiA™ 7 (384-well block); Bio-Rad CFX384™	384-well	YAHS-209YE
F	Roche® LightCycler® 480 (96-well block)	96-well	YAHS-209YF
G	Roche® LightCycler® 480 (384-well block)	384-well	YAHS-209YG

Description

The Human Breast Cancer miRCURY LNA™ miRNA Focus PCR Panel profiles the expression of 84 miRNAs known or predicted to alter their expression during breast cancer initiation or progression. This array provides cancer researchers with a convenient way to quickly analyze the miRNAs most relevant to breast tumorigenesis. Breast cancer is a heterogeneous disease with multiple classifications. For example, not all breast tumors express the estrogen receptor, necessary for treatment via selective estrogen receptor modulators (SERMs). In addition, some breast cancers progress under chemotherapeutic treatment and become resistant to certain drugs. Intense research into carcinogenic mechanisms has identified dysregulated genes, either via functional defects due to somatic mutations, or gene expression alterations due to epigenetic changes. miRNAs epigenetically regulate mRNA, and therefore miRNA dysregulation will affect target mRNA expression. Microarray expression analyses of miRNA have discovered potential biomarkers of breast cancer oncogenesis, and many results have been followed up with functional studies. This array includes miRNAs that are dysregulated in estrogen receptor-responsive or drug-resistant breast tumors. miRNAs with known functions in breast cancer are included, as well as miRNAs hypothesized to be involved, either via microarray studies or as a bioinformatically-predicted regulators of known breast cancer genes. The profiling results from this array may yield insights into the molecular mechanisms behind the pathogenesis of breast cancers. A set of controls present on this array enables data analysis using the $\Delta\Delta CT$ method of relative quantification, assessment of reverse transcription performance, and assessment of PCR performance. Using SYBR Green-based real-time PCR, the expression of a focused panel of miRNAs related to breast cancer can be easily and reliably analyzed with this miRCURY LNA™ miRNA Focus PCR Panel.

For further details, consult the *miRCURY LNA™ miRNA Focus PCR Panels Handbook*.

Array Layout

	1	2	3	4	5	6	7	8	9	10	11	12
A	hsa-let-7a-5p	hsa-let-7b-5p	hsa-let-7c-5p	hsa-let-7d-5p	hsa-let-7e-5p	hsa-let-7f-5p	hsa-let-7g-5p	hsa-let-7f-5p	hsa-miR-1-3p	hsa-miR-100-5p	hsa-miR-107	hsa-miR-10a-5p
B	hsa-miR-10b-5p	hsa-miR-125b-5p	hsa-miR-125b-1-3p	hsa-miR-128-3p	hsa-miR-129-5p	hsa-miR-130a-3p	hsa-miR-130b-3p	hsa-miR-132-3p	hsa-miR-140-5p	hsa-miR-141-3p	hsa-miR-145-5p	hsa-miR-148a-3p
C	hsa-miR-152-3p	hsa-miR-155-5p	hsa-miR-15a-5p	hsa-miR-15b-5p	hsa-miR-16-5p	hsa-miR-17-5p	hsa-miR-181a-5p	hsa-miR-181b-5p	hsa-miR-181c-5p	hsa-miR-181d-5p	hsa-miR-182-5p	hsa-miR-186-5p
D	hsa-miR-18a-5p	hsa-miR-193b-3p	hsa-miR-195-5p	hsa-miR-199a-3p	hsa-miR-199a-5p	hsa-miR-19a-3p	hsa-miR-19b-3p	hsa-miR-200a-3p	hsa-miR-200b-3p	hsa-miR-200c-3p	hsa-miR-202-3p	hsa-miR-203a-3p
E	hsa-miR-204-5p	hsa-miR-205-5p	hsa-miR-206	hsa-miR-20a-5p	hsa-miR-20b-5p	hsa-miR-21-5p	hsa-miR-210-3p	hsa-miR-212-3p	hsa-miR-214-3p	hsa-miR-22-3p	hsa-miR-222-3p	hsa-miR-223-3p
F	hsa-miR-25-3p	hsa-miR-26a-5p	hsa-miR-26b-5p	hsa-miR-27a-3p	hsa-miR-27b-3p	hsa-miR-29a-3p	hsa-miR-29b-3p	hsa-miR-29c-3p	hsa-miR-31-5p	hsa-miR-328-3p	hsa-miR-340-5p	hsa-miR-424-5p
G	hsa-miR-429	hsa-miR-485-5p	hsa-miR-489-3p	hsa-miR-495-3p	hsa-miR-497-5p	hsa-miR-548c-3p	hsa-miR-607	hsa-miR-613	hsa-miR-7-5p	hsa-miR-93-5p	hsa-miR-96-5p	hsa-miR-98-5p
H	cel-miR-39-3p	cel-miR-39-3p	SNORD44 (hsa)	SNORD388 (hsa)	SNORD49A (hsa)	U6 snRNA (v2)	UniSp2	UniSp4	UniSp5	UniSp6	UniSp3	UniSp3

miRNA Table

Well	miRNA ID	Accession #	Assay Catalog #	Well	miRNA ID	Accession #	Assay Catalog #
A01	hsa-let-7a-5p	MIMAT0000062	YP00205727	E01	hsa-miR-204-5p	MIMAT0000265	YP00206072
A02	hsa-let-7b-5p	MIMAT0000063	YP00204750	E02	hsa-miR-205-5p	MIMAT0000266	YP00204487
A03	hsa-let-7c-5p	MIMAT0000064	YP00204767	E03	hsa-miR-206	MIMAT0000462	YP00206073
A04	hsa-let-7d-5p	MIMAT0000065	YP00204124	E04	hsa-miR-20a-5p	MIMAT0000075	YP00204292
A05	hsa-let-7e-5p	MIMAT0000066	YP00205711	E05	hsa-miR-20b-5p	MIMAT0001413	YP00204755
A06	hsa-let-7f-5p	MIMAT0000067	YP00204359	E06	hsa-miR-21-5p	MIMAT0000076	YP00204230
A07	hsa-let-7g-5p	MIMAT0000414	YP00204565	E07	hsa-miR-210-3p	MIMAT0000267	YP00204333
A08	hsa-let-7i-5p	MIMAT0000415	YP00204394	E08	hsa-miR-212-3p	MIMAT0000269	YP00204170
A09	hsa-miR-1-3p	MIMAT0000416	YP00204344	E09	hsa-miR-214-3p	MIMAT0000271	YP00204510
A10	hsa-miR-100-5p	MIMAT0000098	YP00205689	E10	hsa-miR-22-3p	MIMAT0000077	YP00204606
A11	hsa-miR-107	MIMAT0000104	YP00204468	E11	hsa-miR-222-3p	MIMAT0000279	YP00204551
A12	hsa-miR-10a-5p	MIMAT0000253	YP00204778	E12	hsa-miR-223-3p	MIMAT0000280	YP00205986
B01	hsa-miR-10b-5p	MIMAT0000254	YP00205637	F01	hsa-miR-25-3p	MIMAT0000081	YP00204361
B02	hsa-miR-125b-5p	MIMAT0000423	YP00205713	F02	hsa-miR-26a-5p	MIMAT0000082	YP00206023
B03	hsa-miR-125b-1-	MIMAT0004592	YP00204400	F03	hsa-miR-26b-5p	MIMAT0000083	YP00204172
B04	hsa-miR-128-3p	MIMAT0000424	YP00205995	F04	hsa-miR-27a-3p	MIMAT0000084	YP00206038
B05	hsa-miR-129-5p	MIMAT0000242	YP00204534	F05	hsa-miR-27b-3p	MIMAT0000419	YP00205915
B06	hsa-miR-130a-3p	MIMAT0000425	YP00204658	F06	hsa-miR-29a-3p	MIMAT0000086	YP00204698
B07	hsa-miR-130b-3p	MIMAT0000691	YP00204317	F07	hsa-miR-29b-3p	MIMAT0000100	YP00204679
B08	hsa-miR-132-3p	MIMAT0000426	YP00206035	F08	hsa-miR-29c-3p	MIMAT0000681	YP00204729
B09	hsa-miR-140-5p	MIMAT0000431	YP00204540	F09	hsa-miR-31-5p	MIMAT0000089	YP00204236
B10	hsa-miR-141-3p	MIMAT0000432	YP00204504	F10	hsa-miR-328-3p	MIMAT0000752	YP00204364
B11	hsa-miR-145-5p	MIMAT0000437	YP00204483	F11	hsa-miR-340-5p	MIMAT0004692	YP00206068
B12	hsa-miR-148a-3p	MIMAT0000243	YP00205867	F12	hsa-miR-424-5p	MIMAT0001341	YP00204736
C01	hsa-miR-152-3p	MIMAT0000438	YP00204294	G01	hsa-miR-429	MIMAT0001536	YP00205901
C02	hsa-miR-155-5p	MIMAT0000646	YP02119311	G02	hsa-miR-485-5p	MIMAT0002175	YP02112548
C03	hsa-miR-15a-5p	MIMAT0000068	YP00204066	G03	hsa-miR-489-3p	MIMAT0002805	YP00204395
C04	hsa-miR-15b-5p	MIMAT0000417	YP00204243	G04	hsa-miR-495-3p	MIMAT0002817	YP00206015
C05	hsa-miR-16-5p	MIMAT0000069	YP00205702	G05	hsa-miR-497-5p	MIMAT0002820	YP00204354
C06	hsa-miR-17-5p	MIMAT0000070	YP02119304	G06	hsa-miR-548c-3p	MIMAT0003285	YP00204697
C07	hsa-miR-181a-5p	MIMAT0000256	YP00206081	G07	hsa-miR-607	MIMAT0003275	YP00204649
C08	hsa-miR-181b-5p	MIMAT0000257	YP00204530	G08	hsa-miR-613	MIMAT0003281	YP02107726
C09	hsa-miR-181c-5p	MIMAT0000258	YP00204683	G09	hsa-miR-7-5p	MIMAT0000252	YP02119317
C10	hsa-miR-181d-5p	MIMAT0002821	YP00204789	G10	hsa-miR-93-5p	MIMAT0000093	YP00204715
C11	hsa-miR-182-5p	MIMAT0000259	YP00206070	G11	hsa-miR-96-5p	MIMAT0000095	YP00204417
C12	hsa-miR-186-5p	MIMAT0000456	YP00206053	G12	hsa-miR-98-5p	MIMAT0000096	YP00204640
D01	hsa-miR-18a-5p	MIMAT0000072	YP00204207	H01	cel-miR-39-3p	MIMAT0000010	YP00203952
D02	hsa-miR-193b-3p	MIMAT0002819	YP00204226	H02	cel-miR-39-3p	MIMAT0000010	YP00203952
D03	hsa-miR-195-5p	MIMAT0000461	YP00205869	H03	SNORD44 (hsa)	N/A	YP00203902
D04	hsa-miR-199a-3p	MIMAT0000232	YP00204536	H04	SNORD388 (hsa)	N/A	YP00203901
D05	hsa-miR-199a-5p	MIMAT0000231	YP00204494	H05	SNORD49A (hsa)	N/A	YP00203904
D06	hsa-miR-19a-3p	MIMAT0000073	YP00205862	H06	U6 snRNA (v2)	N/A	YP02119464
D07	hsa-miR-19b-3p	MIMAT0000074	YP00204450	H07	UniSp2	N/A	YP00203950
D08	hsa-miR-200a-3p	MIMAT0000682	YP00204707	H08	UniSp4	N/A	YP00203953
D09	hsa-miR-200b-3p	MIMAT0000318	YP00206071	H09	UniSp5	N/A	YP00203955
D10	hsa-miR-200c-3p	MIMAT0000617	YP00204482	H10	UniSp6	N/A	YP00203954
D11	hsa-miR-202-3p	MIMAT0002811	YP00205990	H11	UniSP3	N/A	YP02119288
D12	hsa-miR-203a-3p	MIMAT0000264	YP00205914	H12	UniSP3	N/A	YP02119288

Functional Groupings

Potential Breast Cancer Biomarkers

Upregulated in Breast Cancer: hsa-miR-128-3p, hsa-miR-210-3p.

Regulated in Breast Cancer: hsa-miR-7-5p.

Drug Resistance

Upregulated in Breast Cancer: hsa-miR-10a-5p, hsa-miR-125b-5p, hsa-miR-132-3p, hsa-miR-155-5p, hsa-miR-186-5p, hsa-miR-199a-3p, hsa-miR-21-5p, hsa-miR-210-3p, hsa-miR-212-3p, hsa-miR-22-3p, hsa-miR-222-3p, hsa-miR-29a-3p, hsa-miR-31-5p, hsa-miR-328-3p.

Downregulated in Breast Cancer: hsa-miR-141-3p, hsa-miR-148a-3p, hsa-miR-152-3p, hsa-miR-15a-5p, hsa-miR-15b-5p, hsa-miR-181d-5p, hsa-miR-193b-3p, hsa-miR-200c-3p, hsa-miR-205-5p, hsa-miR-25-3p, hsa-miR-27b-3p, hsa-miR-485-5p, hsa-miR-489-3p, hsa-miR-93-5p.

Regulated in Breast Cancer: hsa-miR-100-5p, hsa-miR-107, hsa-miR-130a-3p, hsa-miR-140-5p, hsa-miR-17-5p, hsa-miR-181b-5p, hsa-miR-181c-5p, hsa-miR-182-5p, hsa-miR-206, hsa-miR-495-3p.

Estrogen Receptor-Dependent

Upregulated in Breast Cancer: hsa-miR-21-5p.

Downregulated in Breast Cancer: hsa-miR-181d-5p, hsa-miR-193b-3p, hsa-miR-200a-3p, hsa-miR-200c-3p, hsa-miR-203a-3p, hsa-miR-26a-5p, hsa-miR-26b-5p, hsa-miR-27a-3p, hsa-miR-27b-3p.

Regulated in Breast Cancer: hsa-let-7a-5p, hsa-let-7c-5p, hsa-let-7f-5p, hsa-let-7g-5p, hsa-miR-181a-5p, hsa-miR-181b-5p, hsa-miR-98-5p.

Known Functions Related to Breast Cancer: hsa-let-7i-5p, hsa-miR-100-5p, hsa-miR-107, hsa-miR-10a-5p, hsa-miR-10b-5p, hsa-miR-125b-5p, hsa-miR-130a-3p, hsa-miR-132-3p, hsa-miR-140-5p, hsa-miR-141-3p, hsa-miR-148a-3p, hsa-miR-152-3p, hsa-miR-155-5p, hsa-miR-15a-5p, hsa-miR-15b-5p, hsa-miR-16-5p, hsa-miR-17-5p, hsa-miR-181d-5p, hsa-miR-182-5p, hsa-miR-186-5p, hsa-miR-193b-3p, hsa-miR-199a-3p, hsa-miR-200b-3p, hsa-miR-200c-3p, hsa-miR-204-5p, hsa-miR-205-5p, hsa-miR-206, hsa-miR-21-5p, hsa-miR-210-3p, hsa-miR-212-3p, hsa-miR-22-3p, hsa-miR-222-3p, hsa-miR-25-3p, hsa-miR-27a-3p, hsa-miR-27b-3p, hsa-miR-29a-3p, hsa-miR-31-5p, hsa-miR-328-3p, hsa-miR-429, hsa-miR-485-5p, hsa-miR-489-3p, hsa-miR-495-3p, hsa-miR-7-5p, hsa-miR-93-5p, hsa-miR-96-5p.

Predicted to Target Breast Cancer Genes: hsa-miR-1-3p, hsa-miR-129-5p, hsa-miR-195-5p, hsa-miR-340-5p, hsa-miR-548c-3p, hsa-miR-607, hsa-miR-613.

Other Breast Cancer miRNA: hsa-let-7b-5p, hsa-let-7d-5p, hsa-let-7e-5p, hsa-miR-125b-1-3p, hsa-miR-130b-3p, hsa-miR-145-5p, hsa-miR-18a-5p, hsa-miR-199a-5p, hsa-miR-19a-3p, hsa-miR-19b-3p, hsa-miR-202-3p, hsa-miR-20a-5p, hsa-miR-20b-5p, hsa-miR-214-3p, hsa-miR-223-3p, hsa-miR-29b-3p, hsa-miR-29c-3p, hsa-miR-424-5p, hsa-miR-497-5p.

Ordering Information

Product	Contents	Cat. no.
miRCURY LNA miRNA Focus PCR Panels	miRCURY LNA miRNA PCR Panels for application-based miRNome profiling, available in 96-well or 384-well format; for SYBR® Green-based detection	339325
miRCURY LNA miRNA miRNome PCR Panels	miRCURY LNA miRNA PCR Panels for PCR-based miRNome profiling, available in 384-well format; for SYBR® Green-based detection	339322
miRCURY LNA miRNA QC PCR Panel	miRCURY LNA miRNA PCR Panel of quality control assays, available in 96-well or 384-well format; for SYBR® Green-based detection	339331
miRCURY LNA miRNA Custom PCR Panels	8 identical, ready-to-use 96- or 384-well plates; each well contains primers sufficient for one 10 µl reaction; for SYBR® Green-based detection	339330
miRCURY LNA Custom PCR Panel Additional Plate	Additional miRCURY LNA Custom PCR Panel plates; set of 4 plates; only available in addition to the base plates ordered through the core product (cat. no. 339330)	339332
miRCURY LNA miRNA PCR Assays	Contains forward and reverse primers for 200 SYBR® Green-based, real-time qPCR reactions, 166 EvaGreen-based digital PCR reactions for Nanoplate 8.5k or 50 EvaGreen-based digital PCR reactions for Nanoplate 26k	339306
miRCURY LNA miRNA Probe PCR Assays	Complete premixed assays containing LNA-enhanced target-specific forward primer and probe. For 200 reactions.	339350
miRCURY LNA miRNA Custom Probe PCR Assays	Custom-designed, target-specific forward primer and probe for any user-defined miRNA target. Complete premixed assay for 200 reactions.	339351

Related Products

Product	Contents	Cat. no.
miRCURY LNA RT Kit	For 8–64 cDNA synthesis reactions: 5x RT SYBR Green Reaction Buffer, 5x RT Probe Reaction Buffer, 10x RT Enzyme Mix, UniSp6, RNA Spike-in template, RNase-Free Water	339340
RNA Spike-In Kit, For RT	Contains the UniSp2, UniSp4, and UniSp5 RNA Spike-in Template Mix and the cel-miR-39-3p RNA Spike-in Template	339390
miRCURY LNA SYBR® Green PCR Kits (200)	For 200 reactions: 2X miRCURY SYBR Green Master Mix, RNase-Free Water	339345
miRCURY LNA SYBR® Green PCR Kits (600)	For 600 reactions: 2X miRCURY SYBR Green Master Mix, RNase-Free Water	339346
miRCURY LNA SYBR® Green PCR Kits (4000)	For 4000 reactions: 2X miRCURY SYBR Green Master Mix, RNase-Free Water	339347
miRCURY LNA Probe PCR Kit (200)	For 200 reactions: 2X QuantiNova Probe Master Mix, 10X miRCURY Probe Univ. Primer, Rox Reference Dye, RNase-Free Water	339371
miRCURY LNA Probe PCR Kit (800)	For 800 reactions: 2X QuantiNova Probe Master Mix, 10X miRCURY Probe Univ. Primer, Rox Reference Dye, RNase-Free Water	339372
miRCURY LNA Probe PCR Kit (4000)	For 4000 reactions: 2X QuantiNova Probe Master Mix, 10X miRCURY Probe Univ. Primer, Rox Reference Dye, RNase-Free Water	339373
miRCURY LNA miRNA PCR Starter Kit	Two miRCURY LNA PCR Assays of your choice, spike-in control Assay (UniSp6), one candidate endogenous control assay (miR-103-3p) and all reagents for 20 reverse transcription reactions and 100 PCR amplifications; for SYBR® Green-based qPCR detection	339320

Important

The miRCURY LNA™ miRNA PCR Panels are Ready-to-Use and designed for optimal performance with the miRCURY LNA RT Kit and the miRCURY LNA SYBR® Green PCR Kit. The performance of the primer sets will be affected when used in combination with less than optimal reagents. Use the miRCURY LNA miRNA PCR Panel Handbook for experiment setup. RNA work requires specific handling and precautions should be taken to prevent RNase contamination and degradation of the RNA sample and reagents.

Shipping and storage

The Ready-to-Use miRCURY LNA miRNA PCR Panels are shipped at room temperature and can be stored at 4°C for at least 6 months. For long term storage, it is recommended to place the panels at -20°C. Under these conditions, the LNA PCR primers are stable for at least 6 months after receipt.

Intended use

miRCURY LNA miRNA PCR Assays are intended for molecular biology applications. This product is not intended for the diagnosis, prevention or treatment of a disease.

Safety information

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate safety data sheets (SDSs). These are available online in convenient and compact PDF format at **www.qiagen.com/safety** where you can find, view and print the SDS for each QIAGEN kit and kit component.

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