

# miRCURY LNA™ miRNA Focus PCR Panels

## Human Cancer Stem Cells Product Data Sheet

Cat. no. 339325 YAHS-218Z

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-218ZA
C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)	96-well	YAHS-218ZC
D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®	96-well	YAHS-218ZD
E	Applied Biosystems® models 7900HT (384-well block), ViiA™ 7 (384-well block); Bio-Rad CFX384™	384-well	YAHS-218ZE
F	Roche® LightCycler® 480 (96-well block)	96-well	YAHS-218ZF
G	Roche® LightCycler® 480 (384-well block)	384-well	YAHS-218ZG

### Description

The Human Cancer Stem Cells miRCURY LNA™ miRNA Focus PCR Panel profiles the expression of 84 miRNAs involved in cancer stem cell (CSC) biology. Cancer researchers have struggled with the vexing problem that although many cancer drugs dramatically reduce the size of the tumors, most cancers eventually relapse. Dynamic changes in cancer cell populations during treatment suggest that a small population of cells resistant to current therapies is ultimately responsible for the re-growth of tumors. Furthermore, studies imply that these cells may provide a reservoir for the generation and propagation of mutant cells, providing further resistance to therapy. The cancer stem cell hypothesis posits that only a very rare population of cells within tumors has the capacity for limitless self-renewal. This concept has important therapeutic implications, and may explain why many cancers return even after treatment removes any detectable tumor cells. If current treatments do not eliminate CSCs, then they may regenerate the tumor once treatment stops. Advances in technology have allowed the prospective identification and purification of CSCs from various different types of cancers for further characterization. Recent studies support the critical regulatory roles of the miRNAs represented by this array in CSC pluripotency, self-renewal, differentiation, metastasis, and tumor suppression. Profiling the differential expression of miRNAs in CSCs would allow a better understanding of miRNA function in CSCs and may provide invaluable insights into the molecular mechanisms of tumorigenesis and tumor progression. A set of controls present on each 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 real-time PCR, the expression of a focused panel of cancer stem cell miRNAs 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-103a-3p	hsa-miR-105-5p	hsa-miR-106b-5p	hsa-miR-107
B	hsa-miR-10a-5p	hsa-miR-1181	hsa-miR-1207-5p	hsa-miR-122-5p	hsa-miR-125b-5p	hsa-miR-128-3p	hsa-miR-130a-3p	hsa-miR-132-3p	hsa-miR-134-5p	hsa-miR-135b-5p	hsa-miR-137-3p	hsa-miR-141-3p
C	hsa-miR-142-3p	hsa-miR-142-5p	hsa-miR-145-5p	hsa-miR-146a-5p	hsa-miR-146b-5p	hsa-miR-150-5p	hsa-miR-151a-3p	hsa-miR-155-5p	hsa-miR-15a-5p	hsa-miR-15b-5p	hsa-miR-16-2-3p	hsa-miR-16-5p
D	hsa-miR-17-5p	hsa-miR-181a-5p	hsa-miR-181b-5p	hsa-miR-181c-5p	hsa-miR-182-5p	hsa-miR-183-5p	hsa-miR-184	hsa-miR-185-5p	hsa-miR-193a-3p	hsa-miR-199b-5p	hsa-miR-200a-3p	hsa-miR-200b-3p
E	hsa-miR-200c-3p	hsa-miR-203a-3p	hsa-miR-20a-5p	hsa-miR-210-3p	hsa-miR-21-5p	hsa-miR-221-3p	hsa-miR-222-3p	hsa-miR-223-3p	hsa-miR-22-3p	hsa-miR-25-3p	hsa-miR-296-5p	hsa-miR-299-5p
F	hsa-miR-29b-3p	hsa-miR-302a-3p	hsa-miR-31-5p	hsa-miR-320d	hsa-miR-34a-5p	hsa-miR-365a-3p	hsa-miR-373-3p	hsa-miR-409-3p	hsa-miR-423-5p	hsa-miR-425-5p	hsa-miR-429	hsa-miR-451a
G	hsa-miR-455-3p	hsa-miR-455-5p	hsa-miR-486-5p	hsa-miR-494-3p	hsa-miR-516a-5p	hsa-miR-517a-3p	hsa-miR-522-3p	hsa-miR-548d-5p	hsa-miR-636	hsa-miR-744-5p	hsa-miR-9-5p	hsa-miR-96-5p
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-200c-3p	MIMAT0000617	YP00204482
A02	hsa-let-7b-5p	MIMAT0000063	YP00204750	E02	hsa-miR-203a-3p	MIMAT0000264	YP00205914
A03	hsa-let-7c-5p	MIMAT0000064	YP00204767	E03	hsa-miR-20a-5p	MIMAT0000075	YP00204292
A04	hsa-let-7d-5p	MIMAT0000065	YP00204124	E04	hsa-miR-210-3p	MIMAT0000267	YP00204333
A05	hsa-let-7e-5p	MIMAT0000066	YP00205711	E05	hsa-miR-21-5p	MIMAT0000076	YP00204230
A06	hsa-let-7f-5p	MIMAT0000067	YP00204359	E06	hsa-miR-221-3p	MIMAT0000278	YP00204532
A07	hsa-let-7g-5p	MIMAT0000414	YP00204565	E07	hsa-miR-222-3p	MIMAT0000279	YP00204551
A08	hsa-let-7i-5p	MIMAT0000415	YP00204394	E08	hsa-miR-223-3p	MIMAT0000280	YP00205986
A09	hsa-miR-103a-3p	MIMAT0000101	YP00204063	E09	hsa-miR-22-3p	MIMAT0000077	YP00204606
A10	hsa-miR-105-5p	MIMAT0000102	YP00204389	E10	hsa-miR-25-3p	MIMAT0000081	YP00204361
A11	hsa-miR-106b-5p	MIMAT0000680	YP00205884	E11	hsa-miR-296-5p	MIMAT0000690	YP00204436
A12	hsa-miR-107	MIMAT0000104	YP00204468	E12	hsa-miR-299-5p	MIMAT0002890	YP00204544
B01	hsa-miR-10a-5p	MIMAT0000253	YP00204778	F01	hsa-miR-29b-3p	MIMAT0000100	YP00204679
B02	hsa-miR-1181	MIMAT0005826	YP00204050	F02	hsa-miR-302a-3p	MIMAT0000684	YP00206059
B03	hsa-miR-1207-5p	MIMAT0005871	YP00204693	F03	hsa-miR-31-5p	MIMAT0000089	YP00204236
B04	hsa-miR-122-5p	MIMAT0000421	YP00205664	F04	hsa-miR-320d	MIMAT0006764	YP00205667
B05	hsa-miR-125b-5p	MIMAT0000423	YP00205713	F05	hsa-miR-34a-5p	MIMAT0000255	YP00204486
B06	hsa-miR-128-3p	MIMAT0000424	YP00205995	F06	hsa-miR-365a-3p	MIMAT0000710	YP00204622
B07	hsa-miR-130a-3p	MIMAT0000425	YP00204658	F07	hsa-miR-373-3p	MIMAT0000726	YP00204604
B08	hsa-miR-132-3p	MIMAT0000426	YP00206035	F08	hsa-miR-409-3p	MIMAT0001639	YP00204358
B09	hsa-miR-134-5p	MIMAT0000447	YP00205989	F09	hsa-miR-423-5p	MIMAT0004748	YP00205624
B10	hsa-miR-135b-5p	MIMAT0000758	YP00204130	F10	hsa-miR-425-5p	MIMAT0003393	YP00204337
B11	hsa-miR-137-3p	MIMAT0000429	YP00206062	F11	hsa-miR-429	MIMAT0001536	YP00205901
B12	hsa-miR-141-3p	MIMAT0000432	YP00204504	F12	hsa-miR-451a	MIMAT0001631	YP02119305
C01	hsa-miR-142-3p	MIMAT0000434	YP00204291	G01	hsa-miR-455-3p	MIMAT0004784	YP00204035
C02	hsa-miR-142-5p	MIMAT0000433	YP00204722	G02	hsa-miR-455-5p	MIMAT0003150	YP00204363
C03	hsa-miR-145-5p	MIMAT0000437	YP00204483	G03	hsa-miR-486-5p	MIMAT0002177	YP00204001
C04	hsa-miR-146a-5p	MIMAT0000449	YP00204688	G04	hsa-miR-494-3p	MIMAT0002816	YP00204579
C05	hsa-miR-146b-5p	MIMAT0002809	YP02119310	G05	hsa-miR-516a-5p	MIMAT0004770	YP00204471
C06	hsa-miR-150-5p	MIMAT0000451	YP00204660	G06	hsa-miR-517a-3p	MIMAT0002852	YP00206019
C07	hsa-miR-151a-3p	MIMAT0000757	YP00204576	G07	hsa-miR-522-3p	MIMAT0002868	YP00205913
C08	hsa-miR-155-5p	MIMAT0000646	YP02119311	G08	hsa-miR-548d-5p	MIMAT0004812	YP00205907
C09	hsa-miR-15a-5p	MIMAT0000068	YP00204066	G09	hsa-miR-636	MIMAT0003306	YP00204298
C10	hsa-miR-15b-5p	MIMAT0000417	YP00204243	G10	hsa-miR-744-5p	MIMAT0004945	YP00204663
C11	hsa-miR-16-2-3p	MIMAT0004518	YP00204309	G11	hsa-miR-9-5p	MIMAT0000441	YP00204513
C12	hsa-miR-16-5p	MIMAT0000069	YP00205702	G12	hsa-miR-96-5p	MIMAT0000095	YP00204417
D01	hsa-miR-17-5p	MIMAT0000070	YP02119304	H01	cel-miR-39-3p	MIMAT0000010	YP00203952
D02	hsa-miR-181a-5p	MIMAT0000256	YP00206081	H02	cel-miR-39-3p	MIMAT0000010	YP00203952
D03	hsa-miR-181b-5p	MIMAT0000257	YP00204530	H03	SNORD44 (hsa)	N/A	YP00203902
D04	hsa-miR-181c-5p	MIMAT0000258	YP00204683	H04	SNORD38B (hsa)	N/A	YP00203901
D05	hsa-miR-182-5p	MIMAT0000259	YP00206070	H05	SNORD49A (hsa)	N/A	YP00203904
D06	hsa-miR-183-5p	MIMAT0000261	YP00206030	H06	U6 snRNA (v2)	N/A	YP02119464
D07	hsa-miR-184	MIMAT0000454	YP00204601	H07	UniSp2	N/A	YP00203950
D08	hsa-miR-185-5p	MIMAT0000455	YP00206037	H08	UniSp4	N/A	YP00203953
D09	hsa-miR-193a-3p	MIMAT0000459	YP00204591	H09	UniSp5	N/A	YP00203955
D10	hsa-miR-199b-5p	MIMAT0000263	YP00204152	H10	UniSp6	N/A	YP00203954
D11	hsa-miR-200a-3p	MIMAT0000682	YP00204707	H11	UniSP3	N/A	YP02119288
D12	hsa-miR-200b-3p	MIMAT0000318	YP00206071	H12	UniSP3	N/A	YP02119288

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## Functional Groupings

**Pluripotency & Differentiation:** hsa-let-7a-5p, hsa-miR-122-5p, hsa-miR-134-5p, hsa-miR-137-3p, hsa-miR-145-5p, hsa-miR-181a-5p, hsa-miR-181c-5p, hsa-miR-183-5p, hsa-miR-184, hsa-miR-200a-3p, hsa-miR-200c-3p, hsa-miR-320d, hsa-miR-34a-5p.

**Self-Renewal & Proliferation:** hsa-miR-134-5p, hsa-miR-137-3p, hsa-miR-141-3p, hsa-miR-182-5p, hsa-miR-183-5p, hsa-miR-184, hsa-miR-200b-3p, hsa-miR-203a-3p, hsa-miR-21-5p, hsa-miR-296-5p, hsa-miR-302a-3p, hsa-miR-429, hsa-miR-9-5p, hsa-miR-96-5p.

**Migration & Metastasis:** 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-7i-5p, hsa-miR-16-5p, hsa-miR-17-5p, hsa-miR-181b-5p, hsa-miR-200a-3p, hsa-miR-200b-3p, hsa-miR-200c-3p, hsa-miR-22-3p, hsa-miR-302a-3p, hsa-miR-373-3p, hsa-miR-517a-3p, hsa-miR-9-5p.

**Oncogenesis & Tumor Suppression:** 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-7i-5p, hsa-miR-181b-5p, hsa-miR-373-3p, hsa-miR-517a-3p.

### Differentially Expressed miRNAs in Cancer Stem Cells

Upregulated in Cancer Stem Cells: hsa-miR-105-5p, hsa-miR-106b-5p, hsa-miR-125b-5p, hsa-miR-132-3p, hsa-miR-135b-5p, hsa-miR-142-3p, hsa-miR-146a-5p, hsa-miR-146b-5p, hsa-miR-150-5p, hsa-miR-155-5p, hsa-miR-16-2-3p, hsa-miR-193a-3p, hsa-miR-199b-5p, hsa-miR-20a-5p, hsa-miR-221-3p, hsa-miR-222-3p, hsa-miR-223-3p, hsa-miR-25-3p, hsa-miR-299-5p, hsa-miR-29b-3p, hsa-miR-31-5p, hsa-miR-409-3p, hsa-miR-423-5p, hsa-miR-455-3p, hsa-miR-455-5p, hsa-miR-494-3p, hsa-miR-516a-5p, hsa-miR-522-3p, hsa-miR-744-5p.

Downregulated in Cancer Stem Cells: hsa-miR-103a-3p, hsa-miR-10a-5p, hsa-miR-1181, hsa-miR-1207-5p, hsa-miR-128-3p, hsa-miR-130a-3p, hsa-miR-15a-5p, hsa-miR-15b-5p, hsa-miR-185-5p, hsa-miR-210-3p, hsa-miR-425-5p, hsa-miR-451a, hsa-miR-486-5p, hsa-miR-548d-5p, hsa-miR-636.

Regulated in Cancer Stem Cells: hsa-miR-107, hsa-miR-142-5p, hsa-miR-151a-3p, hsa-miR-365a-3p.

## 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

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## 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](http://www.qiagen.com/safety)** where you can find, view and print the SDS for each QIAGEN kit and kit component.

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