

miRCURY LNA™ miRNA Focus PCR Panels

Human Hypoxia Signaling Product Data Sheet

Cat. no. 339325 YAHS-221Z

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-221ZA
C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)	96-well	YAHS-221ZC
D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®	96-well	YAHS-221ZD
E	Applied Biosystems® models 7900HT (384-well block), ViiA™ 7 (384-well block); Bio-Rad CFX384™	384-well	YAHS-221ZE
F	Roche® LightCycler® 480 (96-well block)	96-well	YAHS-221ZF
G	Roche® LightCycler® 480 (384-well block)	384-well	YAHS-221ZG

Description

The Human Hypoxia Signaling miRCURY LNA™ miRNA Focus PCR Panel profiles the expression of 84 miRNAs relevant to cellular responses to hypoxic conditions. Mammalian cells can be exposed to hypoxic conditions during development, in stem cell niches, or in pathological states such as in solid cancer tumors or during ischemia due to physical trauma, heart attack or stroke. Cells respond to low oxygen concentrations by adjusting gene expression. The primary sensor and regulator of hypoxic responses is the hypoxia-inducible factor a (HIFa). In the presence of normal oxygen levels, HIFa protein is rapidly hydroxylated which targets it for ubiquitination and degradation by the von Hippel Lindau protein (VHL). Under hypoxic conditions, HIFa is stable and is able to heterodimerize with its transcriptional co-activator ARNT (HIFβ), translocate to the nucleus, and alter gene expression. In addition to changes in mRNA expression, the HIFa/ARNT complex induces changes in miRNA expression that create feedback loops to regulate the expression of genes in the HIFa pathway and that also regulate genes involved in cellular responses to hypoxia. This array contains assays that target miRNA whose roles in the hypoxia signaling pathway have been experimentally demonstrated. The miRNA represented by the array increase or decrease under hypoxic conditions, regulate genes in the HIFa pathway, or regulate genes important in cellular responses to hypoxia. Differences in the expression levels of these miRNA detected by this array may yield insights into the molecular mechanisms underlying differential responses to hypoxia and may provide useful molecular markers for cells that are responding to hypoxic conditions. 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 miRNAs related to hypoxia signaling 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-101-3p	hsa-miR-103a-3p	hsa-miR-107	hsa-miR-10b-5p
B	hsa-miR-122-5p	hsa-miR-125a-5p	hsa-miR-125b-5p	hsa-miR-130a-3p	hsa-miR-130b-3p	hsa-miR-135a-5p	hsa-miR-138-5p	hsa-miR-141-3p	hsa-miR-146a-5p	hsa-miR-146b-5p	hsa-miR-148a-3p	hsa-miR-148b-3p
C	hsa-miR-150-5p	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-184	hsa-miR-186-5p	hsa-miR-188-5p
D	hsa-miR-191-5p	hsa-miR-192-5p	hsa-miR-195-5p	hsa-miR-199a-5p	hsa-miR-199b-5p	hsa-miR-19a-3p	hsa-miR-200a-3p	hsa-miR-200b-3p	hsa-miR-203a-3p	hsa-miR-204-5p	hsa-miR-205-5p	hsa-miR-20a-5p
E	hsa-miR-20b-5p	hsa-miR-210-3p	hsa-miR-215-5p	hsa-miR-21-5p	hsa-miR-221-3p	hsa-miR-22-3p	hsa-miR-224-5p	hsa-miR-23a-3p	hsa-miR-23b-3p	hsa-miR-24-3p	hsa-miR-26a-5p	hsa-miR-26b-5p
F	hsa-miR-27a-3p	hsa-miR-29b-3p	hsa-miR-30b-5p	hsa-miR-30e-5p	hsa-miR-31-5p	hsa-miR-320a-3p	hsa-miR-324-5p	hsa-miR-331-3p	hsa-miR-335-5p	hsa-miR-34a-5p	hsa-miR-378a-3p	hsa-miR-429
G	hsa-miR-449a	hsa-miR-451a	hsa-miR-491-5p	hsa-miR-504-5p	hsa-miR-7-5p	hsa-miR-877-3p	hsa-miR-92a-3p	hsa-miR-935	hsa-miR-93-5p	hsa-miR-9-5p	hsa-miR-98-5p	hsa-miR-99a-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-20b-5p	MIMAT0001413	YP00204755
A02	hsa-let-7b-5p	MIMAT0000063	YP00204750	E02	hsa-miR-210-3p	MIMAT0000267	YP00204333
A03	hsa-let-7c-5p	MIMAT0000064	YP00204767	E03	hsa-miR-215-5p	MIMAT0000272	YP00204598
A04	hsa-let-7d-5p	MIMAT0000065	YP00204124	E04	hsa-miR-21-5p	MIMAT0000076	YP00204230
A05	hsa-let-7e-5p	MIMAT0000066	YP00205711	E05	hsa-miR-221-3p	MIMAT0000278	YP00204532
A06	hsa-let-7f-5p	MIMAT0000067	YP00204359	E06	hsa-miR-22-3p	MIMAT0000077	YP00204606
A07	hsa-let-7g-5p	MIMAT0000414	YP00204565	E07	hsa-miR-224-5p	MIMAT0000281	YP02119313
A08	hsa-let-7i-5p	MIMAT0000415	YP00204394	E08	hsa-miR-23a-3p	MIMAT0000078	YP00204772
A09	hsa-miR-101-3p	MIMAT0000099	YP00204786	E09	hsa-miR-23b-3p	MIMAT0000418	YP02119314
A10	hsa-miR-103a-3p	MIMAT0000101	YP00204063	E10	hsa-miR-24-3p	MIMAT0000080	YP00204260
A11	hsa-miR-107	MIMAT0000104	YP00204468	E11	hsa-miR-26a-5p	MIMAT0000082	YP00206023
A12	hsa-miR-10b-5p	MIMAT0000254	YP00205637	E12	hsa-miR-26b-5p	MIMAT0000083	YP00204172
B01	hsa-miR-122-5p	MIMAT0000421	YP00205664	F01	hsa-miR-27a-3p	MIMAT0000084	YP00206038
B02	hsa-miR-125a-5p	MIMAT0000443	YP00204339	F02	hsa-miR-29b-3p	MIMAT0000100	YP00204679
B03	hsa-miR-125b-5p	MIMAT0000423	YP00205713	F03	hsa-miR-30b-5p	MIMAT0000420	YP00204765
B04	hsa-miR-130a-3p	MIMAT0000425	YP00204658	F04	hsa-miR-30e-5p	MIMAT0000692	YP00204714
B05	hsa-miR-130b-3p	MIMAT0000691	YP00204317	F05	hsa-miR-31-5p	MIMAT0000089	YP00204236
B06	hsa-miR-135a-5p	MIMAT0000428	YP00204762	F06	hsa-miR-320a-3p	MIMAT0000510	YP00206042
B07	hsa-miR-138-5p	MIMAT0000430	YP00206078	F07	hsa-miR-324-5p	MIMAT0000761	YP02119473
B08	hsa-miR-141-3p	MIMAT0000432	YP00204504	F08	hsa-miR-331-3p	MIMAT0000760	YP00206046
B09	hsa-miR-146a-5p	MIMAT0000449	YP00204688	F09	hsa-miR-335-5p	MIMAT0000765	YP02119293
B10	hsa-miR-146b-5p	MIMAT0002809	YP02119310	F10	hsa-miR-34a-5p	MIMAT0000255	YP00204486
B11	hsa-miR-148a-3p	MIMAT0000243	YP00205867	F11	hsa-miR-378a-3p	MIMAT0000732	YP00205946
B12	hsa-miR-148b-3p	MIMAT0000759	YP00204047	F12	hsa-miR-429	MIMAT0001536	YP00205901
C01	hsa-miR-150-5p	MIMAT0000451	YP00204660	G01	hsa-miR-449a	MIMAT0001541	YP00204481
C02	hsa-miR-155-5p	MIMAT0000646	YP02119311	G02	hsa-miR-451a	MIMAT0001631	YP02119305
C03	hsa-miR-15a-5p	MIMAT0000068	YP00204066	G03	hsa-miR-491-5p	MIMAT0002807	YP00204695
C04	hsa-miR-15b-5p	MIMAT0000417	YP00204243	G04	hsa-miR-504-5p	MIMAT0002875	YP00204396
C05	hsa-miR-16-5p	MIMAT0000069	YP00205702	G05	hsa-miR-7-5p	MIMAT0000252	YP02119317
C06	hsa-miR-17-5p	MIMAT0000070	YP02119304	G06	hsa-miR-877-3p	MIMAT0004950	YP00204263
C07	hsa-miR-181a-5p	MIMAT0000256	YP00206081	G07	hsa-miR-92a-3p	MIMAT0000092	YP00204258
C08	hsa-miR-181b-5p	MIMAT0000257	YP00204530	G08	hsa-miR-935	MIMAT0004978	YP00205579
C09	hsa-miR-181c-5p	MIMAT0000258	YP00204683	G09	hsa-miR-93-5p	MIMAT0000093	YP00204715
C10	hsa-miR-184	MIMAT0000454	YP00204601	G10	hsa-miR-9-5p	MIMAT0000441	YP00204513
C11	hsa-miR-186-5p	MIMAT0000456	YP00206053	G11	hsa-miR-98-5p	MIMAT0000096	YP00204640
C12	hsa-miR-188-5p	MIMAT0000457	YP00204239	G12	hsa-miR-99a-5p	MIMAT0000097	YP00204521
D01	hsa-miR-191-5p	MIMAT0000440	YP00204306	H01	cel-miR-39-3p	MIMAT0000010	YP00203952
D02	hsa-miR-192-5p	MIMAT0000222	YP00204099	H02	cel-miR-39-3p	MIMAT0000010	YP00203952
D03	hsa-miR-195-5p	MIMAT0000461	YP00205869	H03	SNORD44 (hsa)	N/A	YP00203902
D04	hsa-miR-199a-5p	MIMAT0000231	YP00204494	H04	SNORD388 (hsa)	N/A	YP00203901
D05	hsa-miR-199b-5p	MIMAT0000263	YP00204152	H05	SNORD49A (hsa)	N/A	YP00203904
D06	hsa-miR-19a-3p	MIMAT0000073	YP00205862	H06	U6 snRNA (v2)	N/A	YP02119464
D07	hsa-miR-200a-3p	MIMAT0000682	YP00204707	H07	UniSp2	N/A	YP00203950
D08	hsa-miR-200b-3p	MIMAT0000318	YP00206071	H08	UniSp4	N/A	YP00203953
D09	hsa-miR-203a-3p	MIMAT0000264	YP00205914	H09	UniSp5	N/A	YP00203955
D10	hsa-miR-204-5p	MIMAT0000265	YP00206072	H10	UniSp6	N/A	YP00203954
D11	hsa-miR-205-5p	MIMAT0000266	YP00204487	H11	UniSP3	N/A	YP02119288
D12	hsa-miR-20a-5p	MIMAT0000075	YP00204292	H12	UniSP3	N/A	YP02119288

Functional Groupings

Regulators of HIF Signaling Pathway

Regulators of HIF1A: hsa-miR-107, hsa-miR-130a-3p, hsa-miR-130b-3p, hsa-miR-138-5p, hsa-miR-155-5p, hsa-miR-17-5p, hsa-miR-199a-5p, hsa-miR-199b-5p, hsa-miR-20a-5p, hsa-miR-20b-5p, hsa-miR-92a-3p, hsa-miR-935.

Regulators of ARNT: hsa-miR-107, hsa-miR-215-5p, hsa-miR-324-5p, hsa-miR-877-3p.

Regulators of HIF1A Inhibitors: hsa-miR-24-3p, hsa-miR-93-5p.

Regulated by Hypoxia

Downregulated by Hypoxia: hsa-let-7a-5p, hsa-let-7c-5p, hsa-let-7d-5p, hsa-let-7f-5p, hsa-miR-101-3p, hsa-miR-122-5p, hsa-miR-135a-5p, hsa-miR-141-3p, hsa-miR-15b-5p, hsa-miR-16-5p, hsa-miR-186-5p, hsa-miR-199a-5p, hsa-miR-19a-3p, hsa-miR-200b-3p, hsa-miR-22-3p, hsa-miR-224-5p, hsa-miR-29b-3p, hsa-miR-30e-5p, hsa-miR-320a-3p, hsa-miR-331-3p, hsa-miR-378a-3p, hsa-miR-449a, hsa-miR-92a-3p.

Upregulated by Hypoxia: hsa-let-7b-5p, hsa-let-7e-5p, hsa-let-7g-5p, hsa-let-7i-5p, hsa-miR-103a-3p, hsa-miR-107, hsa-miR-10b-5p, hsa-miR-125a-5p, hsa-miR-125b-5p, hsa-miR-130a-3p, hsa-miR-130b-3p, hsa-miR-146a-5p, hsa-miR-146b-5p, hsa-miR-148a-3p, hsa-miR-148b-3p, hsa-miR-150-5p, hsa-miR-155-5p, hsa-miR-15a-5p, hsa-miR-181a-5p, hsa-miR-181b-5p, hsa-miR-181c-5p, hsa-miR-188-5p, hsa-miR-191-5p, hsa-miR-192-5p, hsa-miR-195-5p, hsa-miR-200a-3p, hsa-miR-204-5p, hsa-miR-205-5p, hsa-miR-21-5p, hsa-miR-210-3p, hsa-miR-221-3p, hsa-miR-23a-3p, hsa-miR-23b-3p, hsa-miR-24-3p, hsa-miR-26a-5p, hsa-miR-26b-5p, hsa-miR-27a-3p, hsa-miR-30b-5p, hsa-miR-31-5p, hsa-miR-335-5p, hsa-miR-429, hsa-miR-451a, hsa-miR-491-5p, hsa-miR-504-5p, hsa-miR-7-5p, hsa-miR-9-5p, hsa-miR-93-5p, hsa-miR-98-5p.

Regulators of Hypoxia Responsive Genes: hsa-let-7b-5p, hsa-miR-103a-3p, hsa-miR-10b-5p, hsa-miR-125a-5p, hsa-miR-125b-5p, hsa-miR-146a-5p, hsa-miR-146b-5p, hsa-miR-150-5p, hsa-miR-155-5p, hsa-miR-15b-5p, hsa-miR-16-5p, hsa-miR-181c-5p, hsa-miR-184, hsa-miR-203a-3p, hsa-miR-20a-5p, hsa-miR-20b-5p, hsa-miR-21-5p, hsa-miR-210-3p, hsa-miR-221-3p, hsa-miR-23b-3p, hsa-miR-26a-5p, hsa-miR-324-5p, hsa-miR-331-3p, hsa-miR-34a-5p, hsa-miR-378a-3p, hsa-miR-504-5p, hsa-miR-9-5p, hsa-miR-93-5p, hsa-miR-99a-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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