

miRCURY LNA™ miRNA Focus PCR Panels

Human Diabetes Product Data Sheet

Cat. no. 339325 YAHS-215Z

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-215ZA
C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)	96-well	YAHS-215ZC
D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®	96-well	YAHS-215ZD
E	Applied Biosystems® models 7900HT (384-well block), ViiA™ 7 (384-well block); Bio-Rad CFX384™	384-well	YAHS-215ZE
F	Roche® LightCycler® 480 (96-well block)	96-well	YAHS-215ZF
G	Roche® LightCycler® 480 (384-well block)	384-well	YAHS-215ZG

Description

The Human Diabetes miRCURY LNA™ miRNA Focus PCR Panel profiles the expression of 84 miRNAs experimentally identified and/or bioinformatically predicted to epigenetically regulate diabetes-related biological processes. During food consumption, insulin release from pancreatic beta cells activates insulin signaling and cellular uptake of glucose, resulting in synthesis and storage of carbohydrates and lipids. Insulin-resistant individuals are vulnerable to multiple pathophysiologies, including development of non-insulin dependent diabetes mellitus (NIDDM), or type 2 diabetes. Insulin resistance is a key link between obesity and NIDDM, and may be caused by dysregulation of the complex signaling between liver, adipose tissue, skeletal muscle, and pancreatic beta cells. Many miRNAs are differentially regulated in one or more tissues (liver, adipose, skeletal muscle, and pancreatic beta islets) during insulin resistance and diabetes progression. Since each miRNA may regulate hundreds of genes, one miRNA could alter the expression of a different set of genes in each tissue, depending on the gene's tissue-specific expression. This array includes miRNAs differentially regulated in specific tissues as observed by experimental research on insulin resistance and diabetes progression. These experimentally identified miRNAs were also analyzed bioinformatically to determine if they may regulate common diabetes-related genes. The same bioinformatics process was also used to suggest potential novel diabetes-related miRNAs to include on the array. 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 type 2 diabetes and insulin resistance 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-7e-5p	hsa-let-7f-5p	hsa-let-7f-5p	hsa-miR-1-3p	hsa-miR-103a-3p	hsa-miR-107	hsa-miR-125a-5p	hsa-miR-125b-5p	hsa-miR-126-5p	hsa-miR-127-3p	hsa-miR-129-2-3p	hsa-miR-129-5p
B	hsa-miR-130a-3p	hsa-miR-130b-3p	hsa-miR-133a-3p	hsa-miR-133b	hsa-miR-135b-5p	hsa-miR-143-3p	hsa-miR-146a-5p	hsa-miR-148a-3p	hsa-miR-150-5p	hsa-miR-152-3p	hsa-miR-15b-5p	hsa-miR-183-5p
C	hsa-miR-184	hsa-miR-185-5p	hsa-miR-190a-5p	hsa-miR-193a-3p	hsa-miR-194-5p	hsa-miR-195-5p	hsa-miR-196b-5p	hsa-miR-199a-5p	hsa-miR-199a-3p	hsa-miR-200a-3p	hsa-miR-204-5p	hsa-miR-206
D	hsa-miR-212-3p	hsa-miR-214-3p	hsa-miR-21-5p	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-27b-3p	hsa-miR-296-5p	hsa-miR-29a-3p
E	hsa-miR-29b-3p	hsa-miR-29c-3p	hsa-miR-301a-3p	hsa-miR-30a-5p	hsa-miR-30c-5p	hsa-miR-3121-3p	hsa-miR-320b	hsa-miR-324-3p	hsa-miR-324-5p	hsa-miR-330-5p	hsa-miR-335-5p	hsa-miR-34a-5p
F	hsa-miR-34c-5p	hsa-miR-361-5p	hsa-miR-365a-3p	hsa-miR-370-3p	hsa-miR-375-3p	hsa-miR-376a-3p	hsa-miR-377-3p	hsa-miR-380-5p	hsa-miR-381-3p	hsa-miR-382-5p	hsa-miR-424-5p	hsa-miR-433-3p
G	hsa-miR-4458	hsa-miR-4500	hsa-miR-450a-5p	hsa-miR-451a	hsa-miR-4699-3p	hsa-miR-4729	hsa-miR-490-3p	hsa-miR-506-3p	hsa-miR-542-3p	hsa-miR-7-5p	hsa-miR-96-5p	hsa-miR-99b-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-7e-5p	MIMAT0000066	YP00205711	E01	hsa-miR-29b-3p	MIMAT0000100	YP00204679
A02	hsa-let-7f-5p	MIMAT0000067	YP00204359	E02	hsa-miR-29c-3p	MIMAT0000681	YP00204729
A03	hsa-let-7i-5p	MIMAT0000415	YP00204394	E03	hsa-miR-301a-3p	MIMAT0000688	YP00205601
A04	hsa-miR-1-3p	MIMAT0000416	YP00204344	E04	hsa-miR-30a-5p	MIMAT0000087	YP00205695
A05	hsa-miR-103a-3p	MIMAT0000101	YP00204063	E05	hsa-miR-30c-5p	MIMAT0000244	YP00204783
A06	hsa-miR-107	MIMAT0000104	YP00204468	E06	hsa-miR-3121-3p	MIMAT0014983	YP02119245
A07	hsa-miR-125a-5p	MIMAT0000443	YP00204339	E07	hsa-miR-320b	MIMAT0005792	YP02119299
A08	hsa-miR-125b-5p	MIMAT0000423	YP00205713	E08	hsa-miR-324-3p	MIMAT0000762	YP00204303
A09	hsa-miR-126-5p	MIMAT0000444	YP00206010	E09	hsa-miR-324-5p	MIMAT0000761	YP02119473
A10	hsa-miR-127-3p	MIMAT0000446	YP00204048	E10	hsa-miR-330-5p	MIMAT0004693	YP00204372
A11	hsa-miR-129-2-3p	MIMAT0004605	YP00206067	E11	hsa-miR-335-5p	MIMAT0000765	YP02119293
A12	hsa-miR-129-5p	MIMAT0000242	YP00204534	E12	hsa-miR-34a-5p	MIMAT0000255	YP00204486
B01	hsa-miR-130a-3p	MIMAT0000425	YP00204658	F01	hsa-miR-34c-5p	MIMAT0000686	YP00205659
B02	hsa-miR-130b-3p	MIMAT0000691	YP00204317	F02	hsa-miR-361-5p	MIMAT0000703	YP00206054
B03	hsa-miR-133a-3p	MIMAT0000427	YP00204788	F03	hsa-miR-365a-3p	MIMAT0000710	YP00204622
B04	hsa-miR-133b	MIMAT0000770	YP00206058	F04	hsa-miR-370-3p	MIMAT0000722	YP00204011
B05	hsa-miR-135b-5p	MIMAT0000758	YP00204130	F05	hsa-miR-375-3p	MIMAT0000728	YP00204362
B06	hsa-miR-143-3p	MIMAT0000435	YP00205992	F06	hsa-miR-376a-3p	MIMAT0000729	YP00204508
B07	hsa-miR-146a-5p	MIMAT0000449	YP00204688	F07	hsa-miR-377-3p	MIMAT0000730	YP00204733
B08	hsa-miR-148a-3p	MIMAT0000243	YP00205867	F08	hsa-miR-380-5p	MIMAT0000734	YP00205903
B09	hsa-miR-150-5p	MIMAT0000451	YP00204660	F09	hsa-miR-381-3p	MIMAT0000736	YP00205887
B10	hsa-miR-152-3p	MIMAT0000438	YP00204294	F10	hsa-miR-382-5p	MIMAT0000737	YP00204169
B11	hsa-miR-15b-5p	MIMAT0000417	YP00204243	F11	hsa-miR-424-5p	MIMAT0001341	YP00204736
B12	hsa-miR-183-5p	MIMAT0000261	YP00206030	F12	hsa-miR-433-3p	MIMAT0001627	YP00204036
C01	hsa-miR-184	MIMAT0000454	YP00204601	G01	hsa-miR-4458	MIMAT0018980	YP02117234
C02	hsa-miR-185-5p	MIMAT0000455	YP00206037	G02	hsa-miR-4500	MIMAT0019036	YP02119475
C03	hsa-miR-190a-5p	MIMAT0000458	YP00204763	G03	hsa-miR-450a-5p	MIMAT0001545	YP00206085
C04	hsa-miR-193a-3p	MIMAT0000459	YP00204591	G04	hsa-miR-451a	MIMAT0001631	YP02119305
C05	hsa-miR-194-5p	MIMAT0000460	YP00204080	G05	hsa-miR-4699-3p	MIMAT0019795	YP02119478
C06	hsa-miR-195-5p	MIMAT0000461	YP00205869	G06	hsa-miR-4729	MIMAT0019851	YP02101851
C07	hsa-miR-196b-5p	MIMAT0001080	YP00204555	G07	hsa-miR-490-3p	MIMAT0002806	YP00205999
C08	hsa-miR-199a-5p	MIMAT0000231	YP00204494	G08	hsa-miR-506-3p	MIMAT0002878	YP00204539
C09	hsa-miR-19a-3p	MIMAT0000073	YP00205862	G09	hsa-miR-542-3p	MIMAT0003389	YP00205444
C10	hsa-miR-200a-3p	MIMAT0000682	YP00204707	G10	hsa-miR-7-5p	MIMAT0000252	YP02119317
C11	hsa-miR-204-5p	MIMAT0000265	YP00206072	G11	hsa-miR-96-5p	MIMAT0000095	YP00204417
C12	hsa-miR-206	MIMAT0000462	YP00206073	G12	hsa-miR-99b-5p	MIMAT0000689	YP00205983
D01	hsa-miR-212-3p	MIMAT0000269	YP00204170	H01	cel-miR-39-3p	MIMAT0000010	YP00203952
D02	hsa-miR-214-3p	MIMAT0000271	YP00204510	H02	cel-miR-39-3p	MIMAT0000010	YP00203952
D03	hsa-miR-21-5p	MIMAT0000076	YP00204230	H03	SNORD44 (hsa)	N/A	YP00203902
D04	hsa-miR-23a-3p	MIMAT0000078	YP00204772	H04	SNORD38B (hsa)	N/A	YP00203901
D05	hsa-miR-23b-3p	MIMAT0000418	YP02119314	H05	SNORD49A (hsa)	N/A	YP00203904
D06	hsa-miR-24-3p	MIMAT0000080	YP00204260	H06	U6 snRNA (v2)	N/A	YP02119464
D07	hsa-miR-26a-5p	MIMAT0000082	YP00206023	H07	UniSp2	N/A	YP00203950
D08	hsa-miR-26b-5p	MIMAT0000083	YP00204172	H08	UniSp4	N/A	YP00203953
D09	hsa-miR-27a-3p	MIMAT0000084	YP00206038	H09	UniSp5	N/A	YP00203955
D10	hsa-miR-27b-3p	MIMAT0000419	YP00205915	H10	UniSp6	N/A	YP00203954
D11	hsa-miR-296-5p	MIMAT0000690	YP00204436	H11	UniSP3	N/A	YP02119288
D12	hsa-miR-29a-3p	MIMAT0000086	YP00204698	H12	UniSP3	N/A	YP02119288

Functional Groupings

Differentially Expressed in all 4 Diabetes Target Tissues: hsa-let-7f-5p,hsa-miR-107,hsa-miR-130a-3p,hsa-miR-133a-3p,hsa-miR-193a-3p,hsa-miR-206,hsa-miR-27a-3p,hsa-miR-296-5p,hsa-miR-376a-3p.

Differentially Expressed in 3 Diabetes Target Tissues

Liver, Adipose Tissue & Skeletal Muscle: hsa-miR-1-3p,hsa-miR-125a-5p,hsa-miR-125b-5p,hsa-miR-127-3p,hsa-miR-148a-3p,hsa-miR-150-5p,hsa-miR-194-5p,hsa-miR-199a-5p,hsa-miR-26a-5p,hsa-miR-29a-3p,hsa-miR-29b-3p,hsa-miR-29c-3p,hsa-miR-301a-3p,hsa-miR-324-3p,hsa-miR-324-5p,hsa-miR-335-5p.

Liver, Adipose Tissue & Pancreatic Beta Cells: hsa-let-7i-5p,hsa-miR-103a-3p,hsa-miR-135b-5p,hsa-miR-143-3p,hsa-miR-146a-5p,hsa-miR-15b-5p,hsa-miR-185-5p,hsa-miR-190a-5p,hsa-miR-195-5p,hsa-miR-196b-5p,hsa-miR-200a-3p,hsa-miR-204-5p,hsa-miR-21-5p,hsa-miR-212-3p,hsa-miR-214-3p,hsa-miR-330-5p,hsa-miR-34a-5p,hsa-miR-365a-3p,hsa-miR-375-3p,hsa-miR-377-3p,hsa-miR-382-5p,hsa-miR-433-3p.

Liver, Skeletal Muscle & Pancreatic Beta Cells: hsa-miR-152-3p,hsa-miR-183-5p.

Adipose Tissue, Skeletal Muscle & Pancreatic Beta Cells: hsa-let-7e-5p,hsa-miR-450a-5p,hsa-miR-7-5p.

Differentially Expressed in 2 Diabetes Target Tissues

Liver & Adipose Tissue: hsa-miR-129-2-3p,hsa-miR-133b,hsa-miR-19a-3p,hsa-miR-34c-5p,hsa-miR-370-3p,hsa-miR-381-3p,hsa-miR-99b-5p.

Liver & Skeletal Muscle: hsa-miR-451a.

Liver & Pancreatic Beta Cells: hsa-miR-380-5p.

Adipose Tissue & Skeletal Muscle: hsa-miR-129-5p,hsa-miR-23a-3p,hsa-miR-23b-3p,hsa-miR-24-3p,hsa-miR-26b-5p,hsa-miR-27b-3p,hsa-miR-30a-5p,hsa-miR-30c-5p,hsa-miR-361-5p,hsa-miR-424-5p,hsa-miR-490-3p,hsa-miR-542-3p.

Adipose Tissue & Pancreatic Beta Cells: hsa-miR-130b-3p,hsa-miR-184,hsa-miR-320b,hsa-miR-96-5p.

Skeletal Muscle & Pancreatic Beta Cells: hsa-miR-126-5p.

Predicted to Target Diabetes-Related Genes: hsa-miR-3121-3p,hsa-miR-4458,hsa-miR-4500,hsa-miR-4699-3p,hsa-miR-4729,hsa-miR-506-3p.

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

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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