

miRCURY LNA™ miRNA Focus PCR Panels

Human T-Cell & B-Cell Activation V2 Product Data Sheet

Cat. no. 339325 YAHS-211Y

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-211YA
C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)	96-well	YAHS-211YC
D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®	96-well	YAHS-211YD
E	Applied Biosystems® models 7900HT (384-well block), ViiA™ 7 (384-well block); Bio-Rad CFX384™	384-well	YAHS-211YE
F	Roche® LightCycler® 480 (96-well block)	96-well	YAHS-211YF
G	Roche® LightCycler® 480 (384-well block)	384-well	YAHS-211YG

Description

The Human T-Cell & B-Cell Activation V2 miRCURY LNA™ miRNA Focus PCR Panel profiles the expression of 84 miRNAs involved in the activation and differentiation of T cells and B cells. This array provides scientific researchers with a convenient way to quickly analyze the miRNAs most relevant to specific stages of T cell and B cell development. Hematopoietic stem cells differentiate into lymphoid and myeloid progenitor cells. To develop into T cells, lymphoid progenitor cells migrate to the thymus, where T cell lineage commitment starts with the double negative (CD4-/CD8-) stage. The cells proceed through the double positive (CD4+/CD8+) stage, and end with the single positive stage, generating either naïve CD4+ or naïve CD8+ T cells. During the adaptive immune response, naïve CD8+ T cells interact with antigen and activate, differentiating into effector T cells and potentially memory T cells after antigen clearance, while naïve CD4+ T cells activated by antigen differentiate into helper T cells. B cells mature in the spleen and remain naïve until they encounter antigen. Activated B cells differentiate into plasma B cells or memory B cells, or undergo an intermediate differentiation step and switch antibody classes to become germinal center B cells. T cell and B cell activation involves many sequential steps and the careful timing of cellular signaling pathways. Specific miRNAs play roles in fine-tuning the differentiation and activation of these essential immune cells, and dysregulation of B cell or T cell functions can cause immunodeficiencies or cancer. 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-based real-time PCR, the expression of a focused panel of miRNAs involved in T cell and B cell activation 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-100-5p	hsa-miR-101-3p	hsa-miR-106b-5p	hsa-miR-125b-5p
B	hsa-miR-126-3p	hsa-miR-128-3p	hsa-miR-130b-3p	hsa-miR-132-3p	hsa-miR-139-5p	hsa-miR-142-3p	hsa-miR-142-5p	hsa-miR-145-5p	hsa-miR-146a-5p	hsa-miR-146b-5p	hsa-miR-147a	hsa-miR-148a-3p
C	hsa-miR-150-5p	hsa-miR-155-5p	hsa-miR-155a-5p	hsa-miR-155a-3p	hsa-miR-15b-5p	hsa-miR-16-5p	hsa-miR-17-5p	hsa-miR-17-3p	hsa-miR-181a-5p	hsa-miR-181b-5p	hsa-miR-181c-5p	hsa-miR-181d-5p
D	hsa-miR-182-5p	hsa-miR-184	hsa-miR-185a-5p	hsa-miR-191-5p	hsa-miR-195-5p	hsa-miR-199a-5p	hsa-miR-19a-3p	hsa-miR-19b-3p	hsa-miR-204-5p	hsa-miR-20a-5p	hsa-miR-20b-5p	hsa-miR-21-5p
E	hsa-miR-210-3p	hsa-miR-214-3p	hsa-miR-221-3p	hsa-miR-222-3p	hsa-miR-223-3p	hsa-miR-230a-3p	hsa-miR-23b-3p	hsa-miR-24-3p	hsa-miR-25-3p	hsa-miR-26a-5p	hsa-miR-26b-5p	hsa-miR-27a-3p
F	hsa-miR-27b-3p	hsa-miR-28-5p	hsa-miR-29a-3p	hsa-miR-29b-3p	hsa-miR-29c-3p	hsa-miR-30a-5p	hsa-miR-30b-5p	hsa-miR-30c-5p	hsa-miR-30d-5p	hsa-miR-30e-5p	hsa-miR-31-5p	hsa-miR-326
G	hsa-miR-331-3p	hsa-miR-335-5p	hsa-miR-342-3p	hsa-miR-346	hsa-miR-34a-5p	hsa-miR-365a-3p	hsa-miR-423-5p	hsa-miR-574-3p	hsa-miR-92a-3p	hsa-miR-93-5p	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-210-3p	MIMAT0000267	YP00204333
A02	hsa-let-7b-5p	MIMAT0000063	YP00204750	E02	hsa-miR-214-3p	MIMAT0000271	YP00204510
A03	hsa-let-7c-5p	MIMAT0000064	YP00204767	E03	hsa-miR-221-3p	MIMAT0000278	YP00204532
A04	hsa-let-7d-5p	MIMAT0000065	YP00204124	E04	hsa-miR-222-3p	MIMAT0000279	YP00204551
A05	hsa-let-7e-5p	MIMAT0000066	YP00205711	E05	hsa-miR-223-3p	MIMAT0000280	YP00205986
A06	hsa-let-7f-5p	MIMAT0000067	YP00204359	E06	hsa-miR-23a-3p	MIMAT0000078	YP00204772
A07	hsa-let-7g-5p	MIMAT0000414	YP00204565	E07	hsa-miR-23b-3p	MIMAT0000418	YP02119314
A08	hsa-let-7i-5p	MIMAT0000415	YP00204394	E08	hsa-miR-24-3p	MIMAT0000080	YP00204260
A09	hsa-miR-100-5p	MIMAT0000098	YP00205689	E09	hsa-miR-25-3p	MIMAT0000081	YP00204361
A10	hsa-miR-101-3p	MIMAT0000099	YP00204786	E10	hsa-miR-26a-5p	MIMAT0000082	YP00206023
A11	hsa-miR-106b-5p	MIMAT0000680	YP00205884	E11	hsa-miR-26b-5p	MIMAT0000083	YP00204172
A12	hsa-miR-125b-5p	MIMAT0000423	YP00205713	E12	hsa-miR-27a-3p	MIMAT0000084	YP00206038
B01	hsa-miR-126-3p	MIMAT0000445	YP00204227	F01	hsa-miR-27b-3p	MIMAT0000419	YP00205915
B02	hsa-miR-128-3p	MIMAT0000424	YP00205995	F02	hsa-miR-28-5p	MIMAT0000085	YP00204322
B03	hsa-miR-130b-3p	MIMAT0000691	YP00204317	F03	hsa-miR-29a-3p	MIMAT0000086	YP00204698
B04	hsa-miR-132-3p	MIMAT0000426	YP00206035	F04	hsa-miR-29b-3p	MIMAT0000100	YP00204679
B05	hsa-miR-139-5p	MIMAT0000250	YP00205874	F05	hsa-miR-29c-3p	MIMAT0000681	YP00204729
B06	hsa-miR-142-3p	MIMAT0000434	YP00204291	F06	hsa-miR-30a-5p	MIMAT0000087	YP00205695
B07	hsa-miR-142-5p	MIMAT0000433	YP00204722	F07	hsa-miR-30b-5p	MIMAT0000420	YP00204765
B08	hsa-miR-145-5p	MIMAT0000437	YP00204483	F08	hsa-miR-30c-5p	MIMAT0000244	YP00204783
B09	hsa-miR-146a-5p	MIMAT0000449	YP00204688	F09	hsa-miR-30d-5p	MIMAT0000245	YP00206047
B10	hsa-miR-146b-5p	MIMAT0002809	YP02119310	F10	hsa-miR-30e-5p	MIMAT0000692	YP00204714
B11	hsa-miR-147a	MIMAT0000251	YP00204398	F11	hsa-miR-31-5p	MIMAT0000089	YP00204236
B12	hsa-miR-148a-3p	MIMAT0000243	YP00205867	F12	hsa-miR-326	MIMAT0000756	YP00204512
C01	hsa-miR-150-5p	MIMAT0000451	YP00204660	G01	hsa-miR-331-3p	MIMAT0000760	YP00206046
C02	hsa-miR-155-5p	MIMAT0000646	YP02119311	G02	hsa-miR-335-5p	MIMAT0000765	YP02119293
C03	hsa-miR-15a-5p	MIMAT0000068	YP00204066	G03	hsa-miR-342-3p	MIMAT0000753	YP00205625
C04	hsa-miR-15a-3p	MIMAT0004488	YP00204435	G04	hsa-miR-346	MIMAT0000773	YP00206009
C05	hsa-miR-15b-5p	MIMAT0000417	YP00204243	G05	hsa-miR-34a-5p	MIMAT0000255	YP00204486
C06	hsa-miR-16-5p	MIMAT0000069	YP00205702	G06	hsa-miR-365a-3p	MIMAT0000710	YP00204622
C07	hsa-miR-17-5p	MIMAT0000070	YP02119304	G07	hsa-miR-423-5p	MIMAT0004748	YP00205624
C08	hsa-miR-17-3p	MIMAT0000071	YP00206008	G08	hsa-miR-574-3p	MIMAT0003239	YP00206011
C09	hsa-miR-181a-5p	MIMAT0000256	YP00206081	G09	hsa-miR-92a-3p	MIMAT0000092	YP00204258
C10	hsa-miR-181b-5p	MIMAT0000257	YP00204530	G10	hsa-miR-93-5p	MIMAT0000093	YP00204715
C11	hsa-miR-181c-5p	MIMAT0000258	YP00204683	G11	hsa-miR-98-5p	MIMAT0000096	YP00204640
C12	hsa-miR-181d-5p	MIMAT0002821	YP00204789	G12	hsa-miR-99a-5p	MIMAT0000097	YP00204521
D01	hsa-miR-182-5p	MIMAT0000259	YP00206070	H01	cel-miR-39-3p	MIMAT0000010	YP00203952
D02	hsa-miR-184	MIMAT0000454	YP00204601	H02	cel-miR-39-3p	MIMAT0000010	YP00203952
D03	hsa-miR-18a-5p	MIMAT0000072	YP00204207	H03	SNORD44 (hsa)	N/A	YP00203902
D04	hsa-miR-191-5p	MIMAT0000440	YP00204306	H04	SNORD388 (hsa)	N/A	YP00203901
D05	hsa-miR-195-5p	MIMAT0000461	YP00205869	H05	SNORD49A (hsa)	N/A	YP00203904
D06	hsa-miR-199a-5p	MIMAT0000231	YP00204494	H06	U6 snRNA (v2)	N/A	YP02119464
D07	hsa-miR-19a-3p	MIMAT0000073	YP00205862	H07	UniSp2	N/A	YP00203950
D08	hsa-miR-19b-3p	MIMAT0000074	YP00204450	H08	UniSp4	N/A	YP00203953
D09	hsa-miR-204-5p	MIMAT0000265	YP00206072	H09	UniSp5	N/A	YP00203955
D10	hsa-miR-20a-5p	MIMAT0000075	YP00204292	H10	UniSp6	N/A	YP00203954
D11	hsa-miR-20b-5p	MIMAT0001413	YP00204755	H11	UniSP3	N/A	YP02119288
D12	hsa-miR-21-5p	MIMAT0000076	YP00204230	H12	UniSP3	N/A	YP02119288

Functional Groupings

T-Cell Differentiation

Double Negative (CD4-/CD8-) T Cells: hsa-let-7d-5p, hsa-let-7e-5p, hsa-miR-126-3p, hsa-miR-128-3p, hsa-miR-146b-5p, hsa-miR-15a-5p, hsa-miR-17-3p, hsa-miR-17-5p, hsa-miR-181c-5p, hsa-miR-191-5p, hsa-miR-199a-5p, hsa-miR-19a-3p, hsa-miR-20a-5p, hsa-miR-20b-5p, hsa-miR-221-3p, hsa-miR-222-3p, hsa-miR-223-3p, hsa-miR-28-5p, hsa-miR-29c-3p, hsa-miR-30e-5p, hsa-miR-342-3p, hsa-miR-423-5p, hsa-miR-93-5p, hsa-miR-98-5p.

Double Positive (CD4+/CD8+) T Cells: hsa-let-7b-5p, hsa-miR-181a-5p, hsa-miR-181b-5p, hsa-miR-181d-5p, hsa-miR-19b-3p.

CD4+ Naive T Cells: hsa-miR-132-3p, hsa-miR-146a-5p, hsa-miR-182-5p, hsa-miR-184, hsa-miR-25-3p, hsa-miR-326, hsa-miR-92a-3p.

CD8+ Naive T Cells: hsa-let-7a-5p, hsa-let-7c-5p, hsa-let-7f-5p, hsa-let-7g-5p, hsa-miR-130b-3p, hsa-miR-139-5p, hsa-miR-142-3p, hsa-miR-150-5p, hsa-miR-155-5p, hsa-miR-15a-3p, hsa-miR-16-5p, hsa-miR-26a-5p, hsa-miR-26b-5p, hsa-miR-29b-3p, hsa-miR-30b-5p, hsa-miR-30c-5p, hsa-miR-30d-5p.

CD8+ Effector T Cells: hsa-miR-147a, hsa-miR-148a-3p, hsa-miR-18a-5p, hsa-miR-27a-3p, hsa-miR-27b-3p.

CD8+ Memory T Cells: hsa-let-7i-5p, hsa-miR-106b-5p, hsa-miR-142-5p, hsa-miR-15b-5p, hsa-miR-17-5p, hsa-miR-21-5p, hsa-miR-23a-3p, hsa-miR-23b-3p, hsa-miR-24-3p, hsa-miR-29a-3p, hsa-miR-31-5p.

B-Cell Differentiation

Naive B Cells: hsa-let-7a-5p, hsa-let-7b-5p, hsa-let-7d-5p, hsa-let-7g-5p, hsa-let-7i-5p, hsa-miR-101-3p, hsa-miR-132-3p, hsa-miR-142-3p, hsa-miR-142-5p, hsa-miR-150-5p, hsa-miR-181c-5p, hsa-miR-195-5p, hsa-miR-204-5p, hsa-miR-214-3p, hsa-miR-221-3p, hsa-miR-222-3p, hsa-miR-223-3p, hsa-miR-29b-3p, hsa-miR-30e-5p, hsa-miR-331-3p, hsa-miR-92a-3p.

Germinal Center B Cells: hsa-miR-106b-5p, hsa-miR-130b-3p, hsa-miR-132-3p, hsa-miR-148a-3p, hsa-miR-15a-5p, hsa-miR-15b-5p, hsa-miR-16-5p, hsa-miR-17-3p, hsa-miR-17-5p, hsa-miR-181a-5p, hsa-miR-181b-5p, hsa-miR-191-5p, hsa-miR-19a-3p, hsa-miR-19b-3p, hsa-miR-210-3p, hsa-miR-23b-3p, hsa-miR-25-3p, hsa-miR-28-5p, hsa-miR-30d-5p, hsa-miR-93-5p, hsa-miR-98-5p.

Memory B Cells: hsa-miR-100-5p, hsa-miR-125b-5p, hsa-miR-145-5p, hsa-miR-146a-5p, hsa-miR-155-5p, hsa-miR-21-5p, hsa-miR-23a-3p, hsa-miR-24-3p, hsa-miR-26a-5p, hsa-miR-26b-5p, hsa-miR-27a-3p, hsa-miR-27b-3p, hsa-miR-29a-3p, hsa-miR-29c-3p, hsa-miR-30b-5p, hsa-miR-30c-5p, hsa-miR-34a-5p.

Differentially Expressed in Regulatory T Cells

hsa-miR-100-5p, hsa-miR-125b-5p, hsa-miR-146a-5p, hsa-miR-181c-5p, hsa-miR-20b-5p, hsa-miR-21-5p, hsa-miR-31-5p, hsa-miR-335-5p, hsa-miR-365a-3p, hsa-miR-99a-5p.

T-Cell Activation: hsa-let-7e-5p, hsa-let-7g-5p, hsa-let-7i-5p, hsa-miR-106b-5p, hsa-miR-139-5p, hsa-miR-142-5p, hsa-miR-146a-5p, hsa-miR-146b-5p, hsa-miR-155-5p, hsa-miR-15a-3p, hsa-miR-15a-5p, hsa-miR-181a-5p, hsa-miR-181c-5p, hsa-miR-195-5p, hsa-miR-20b-5p, hsa-miR-214-3p, hsa-miR-223-3p, hsa-miR-23a-3p, hsa-miR-23b-3p, 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-30a-5p, hsa-miR-30b-5p, hsa-miR-30e-5p, hsa-miR-342-3p, hsa-miR-346, hsa-miR-574-3p, hsa-miR-98-5p.

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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