

**Catalog No. AM100049**

**50 Reactions**

To be used in conjunction with the Vantage™ microRNA Detection Kit, catalog number AM100091 (50 reactions) or AM100092 (200 reactions).

**Components included in this kit:**

Component	Amount
Cardiac Panel 1 Bead Mix	400 µL

**Handling Instructions**

The kit is shipped on ice packs. Upon receipt, store all components at 2-8°C.

**Related Products**

**Catalog Number**

Vantage™ microRNA Detection Kit (50 reactions) .....	AM100091
Vantage™ microRNA Detection Kit (200 reactions).....	AM100092
Vantage™ Total RNA Purification Kit .....	NP100026
Vantage™ microRNA Purification Kit .....	NP100028
Vantage™ microRNA Labeling Kit.....	AM100044
Vantage™ Oncology Panel 1.....	AM100045
Vantage™ Pancreatic Cancer Panel 1 .....	AM100046
Vantage™ Breast Cancer Panel 1 .....	AM100047
Vantage™ Ovarian Cancer Panel 1.....	AM100098
Vantage™ Diabetes Panel 1.....	AM100050
Vantage™ Hypoxia Panel 1 .....	AM100051
Vantage™ Prostate Cancer Panel 1 .....	AM100052
Vantage™ miR-Plex Control.....	AM100090

### Sequences and Nomenclature

The sequences and nomenclature of the mature microRNAs were obtained from the [miRBase Sequence Database](#) version 14.0, released in September 2009. Names annotated with (\*) indicate a mature microRNA sequence that originated from a stem-loop molecule that generated two mature microRNA sequences. In these cases, one mature sequence has a standard name while the other sequence from the same stem-loop has an annotated name (\*).

xMAP® Bead Region	Human microRNA Nomenclature	Human microRNA mature sequence	Equivalent Mouse (Mus musculus)	Equivalent Rat (Rattus norvegicus)
22	hsa-miR-195	UAGCAGCACAGAAAUAUUGGC	mmu-miR-195	rno-miR-195
23	hsa-miR-199a-5p	CCCAGUGUUCAGACUACCUGUUC	mmu-miR-199a-5p	rno-miR-199a-5p
27	hsa-miR-21	UAGCUUAUCAGACUGAUGUUGA	mmu-miR-21	rno-miR-21
51	hsa-miR-29c	UAGCACCAUUUGAAAUCGGUUA	mmu-miR-29c	rno-miR-29c
65	hsa-miR-23a/b	AUCACAUUGCCAGGGAUUUCC	mmu-miR-23a/b	rno-miR-23a/b
66	hsa-miR-1	UGGAAUGUAAAGAAGUAUGUAU	mmu-miR-1	NA
76	hsa-miR-125b-1*	ACGGGUUAGGCUCUUGGGAGCU	mmu-miR-125b-3p	rno-miR-125b-3p
79	hsa-miR-150	UCUCCCAACCCUUGUACCAGUG	mmu-miR-150	rno-miR-150
84	hsa-miR-199a-3p	AACUGGCCUACAAAGUCCAGU	mmu-miR-193	rno-miR-193
85	hsa-miR-133a/b	UUUGGUCCCCUUCAACCAGCUG	mmu-miR-133a/b	rno-miR-133a/b
49	5.8S Ribosomal RNA			

**Performance Characteristics**

**I. Specificity**

In separate reactions, 200 attomoles of synthetic biotinylated miR-1, miR-125b-1\*, miR-133a, miR-150, miR-195, and miR-199a-5p were detected with the Vantage™ microRNA detection kit (Cat. No. AM100091). The assay was performed using the standard protocol. No cross-reactivity in excess of 1% was observed.

microRNA Sequences	miR-1	miR-125b-1*	miR-133a/b	miR-150	miR-195	miR-199a-3p	miR-199a-5p	miR-21	miR-23a/b	miR-29c
	% Cross-Reactivity									
miR-1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
miR-125b-1*	0.0%	100.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%
miR-133a	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
miR-150	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
miR-195	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
miR-199a-5p	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%

**II. Sensitivity – Limit of Detection (LOD) determined using synthetic microRNAs**

Synthetic microRNAs were labeled using the Vantage™ microRNA Labeling Kit (Cat. AM100044). A range of different concentrations of labeled microRNA was tested with the Vantage microRNA Detection Kit. The limit of detection was calculated using 2 x the mean of the negative control (blank).

**Limit of Detection Range : 0.03-0.1 pg (5-15 attomoles)**

**III. Sensitivity (LOD) determined using total RNA from normal heart tissue**

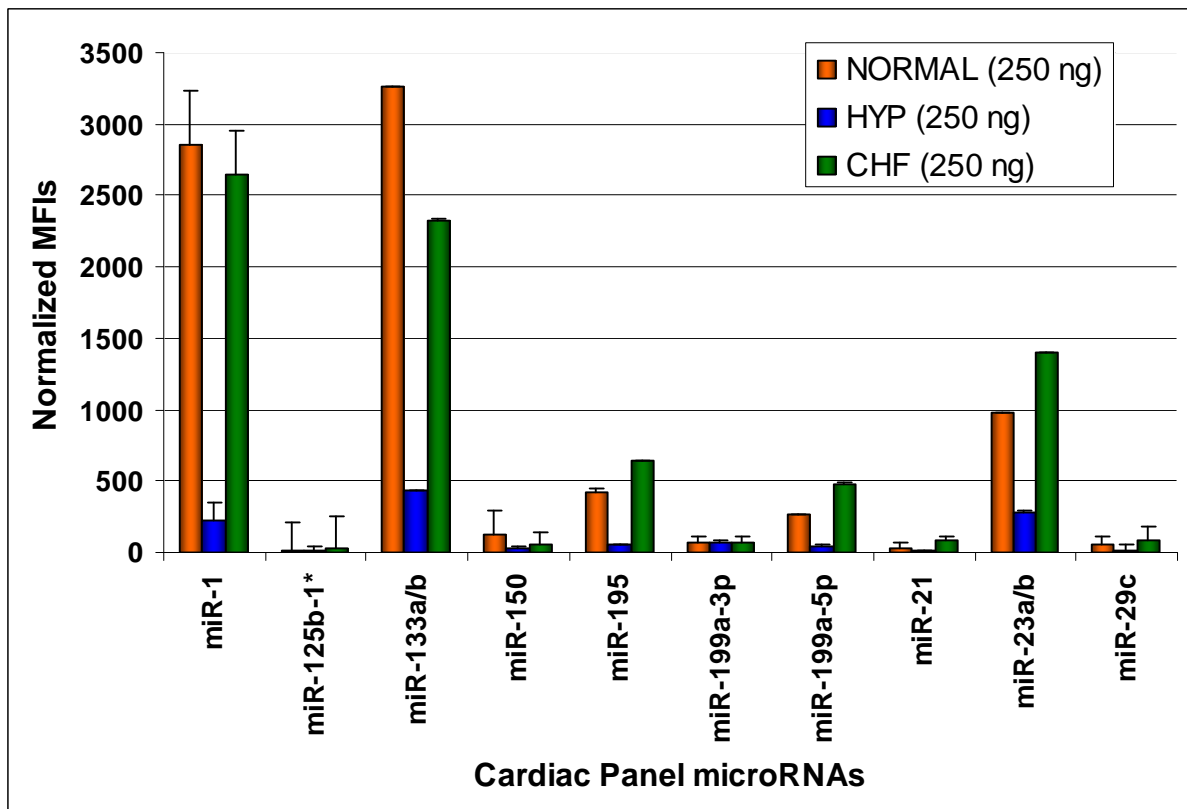
Total RNA was extracted from normal heart tissue. The total RNA was labeled using the *Vantage™* microRNA Labeling Kit (Cat. No. AM100044). A range of different concentrations of labeled microRNA was tested with the *Vantage* microRNA Detection Kit. The limit of detection was calculated using 2 x the mean of the negative control (blank).

microRNA	Limit of Detection (ng Total RNA)	microRNA	Limit of Detection (ng Total RNA)
miR-1	0.6	miR-199a-5p	nd
miR-125b-1*	nd	miR-21	nd
miR-133a/b	1.0	miR-23a/b	1.4
miR-150	nd	miR-29c	nd
miR-195	nd	5.8 S	0.1
miR-199a-3p	nd		

The limit of detection of different microRNAs in tissues and cells is dependent upon expression levels. In some cases the limit of detection cannot be determined because the expression level is too low (indicated by nd in the table). 5.8S ribosomal RNA is ubiquitously expressed in mammalian cells and tissues.

**IV. MicroRNA profiles in normal versus cardiac diseases**

Total RNA was extracted from normal heart tissue and heart tissue taken from patients with hypertension (HYP) and congestive heart failure (CHF)\* (not patient matched). 250ng of total RNA from each extract was labeled using the Vantage™ microRNA Labeling Kit (AM100044) and then detected with the Vantage™ microRNA Detection Kit and the Vantage™ Cardiac Panel1. The signals from the 5.8S ribosomal RNA control were used to normalize the signals of the HYP and CHF samples to the normal samples. The results show that microRNAs are differentially expressed between normal and diseased samples.



**miR-plex™ Control Panel (Catalog # AM100090)**

The miR-Plex™ Control is a mix of seven biotinylated microRNAs that can be used as controls for the Vantage™ microRNA Detection Panels. The miR-plex™ Control Panel panel contains labeled microRNA comprising miR-1, miR-107, miR0126, miR-203, miR-21, miR-9, and 5.8S ribosomal RNA. When used in place of a labeled RNA sample, the following results should be obtained

Detection Panel	Cat. No.	miR-1	miR-107	miR-126	miR-203	miR-21	miR-9	5.8S
Cardiac Panel 1	AM100049	Low	Neg	Neg	Neg	Medium	Neg	High

**Terms and Conditions**

By opening this Assay Product (which contains fluorescently labeled microsphere beads authorized by Luminex Corporation) or using this Assay Product in any manner, you are consenting to be bound by the following terms and conditions. You are also agreeing that the following terms and conditions constitute a legally valid and binding contract that is enforceable against you. If you do not agree to all of the terms and conditions set forth below, you must promptly return this Assay Product for a full refund prior to using it in any manner. You, the customer, acquire the right under Luminex Corporation's patent rights, if any, to use this Assay Product or any portion of this Assay Product, including without limitation the microsphere beads contained herein, only with Luminex Corporation's laser based fluorescent under the name Luminex Instrument.

**Safety and Use Statement**

All biological materials should be handled as potentially hazardous. Follow universal precautions as established by the Centers for Disease Control and Prevention and by the Occupational Safety and Health Administration when handling and disposing of potentially infectious or hazardous agents.

This product is authorized for laboratory research use only. The product has not been qualified or found safe and effective for any human or animal diagnostic application. Uses other than the labeled intended use may be a violation of applicable law. If you have any questions concerning the use of this product, please contact OriGene Technologies, Inc. at 1-888-267-4436 (301-340-3188 outside the US) or visit [www.origene.com](http://www.origene.com).

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