

**Catalog No. AM100050**

**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 |
|---------------------------|--------|
| Diabetes 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.....                 | AM100048 |
| Vantage™ Cardiac Panel 1 .....                       | AM100049 |
| Vantage™ Hypoxia Panel 1 .....                       | AM100051 |
| Vantage™ microRNA 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®<br>Bead<br>Region | Human<br>microRNA<br>Nomenclature | Human microRNA mature<br>sequence | Equivalent<br>Mouse (Mus<br>musculus) | Equivalent Rat<br>(Rattus<br>norvegicus) |
|-------------------------|-----------------------------------|-----------------------------------|---------------------------------------|--|
| 40                      | hsa-miR-9                         | UCUUUGGUUAUCUAGCUGUAUGA           | mmu-miR-9                             | rno-miR-9                                |
| 58                      | hsa-let-7b                        | UGAGGUAGUAGGUUGUGUGGUU            | mmu-let-7b                            | rno-let-7b                               |
| 66                      | hsa-miR-1                         | UGGAAUGUAAAGAAGUAUGUAU            | mmu-miR-1                             | NA                                       |
| 67                      | hsa-miR-124                       | UAAGGCACGCGGUGAAUGCC              | mmu-miR-124                           | rno-miR-124                              |
| 77                      | hsa-miR-143                       | UGAGAUGAAGCACUGUAGCUC             | mmu-miR-143                           | rno-miR-143                              |
| 80                      | hsa-miR-29a                       | UAGCACCAUCUGAAAUCGGUUA            | mmu-miR-29a                           | rno-miR-29a                              |
| 81                      | hsa-miR-192                       | CUGACCUAUGAAUUGACAGCC             | mmu-miR-192                           | rno-miR-192                              |
| 85                      | hsa-miR-133a/b                    | UUUGGUCCCCUUCAACCAGCUG            | mmu-miR-133a/b                        | rno-miR-133a/b                           |
| 86                      | hsa-miR-145                       | GUCCAGUUUUCCCAGGAAUCCCU           | mmu-miR-145                           | rno-miR-145                              |
| 87                      | hsa-miR-375                       | UUUGUUCGUUCGGCUCGCGUGA            | mmu-miR-375                           | rno-miR-375                              |
| 89                      | hsa-miR-29b                       | UAGCACCAUUUGAAAUCAGUGUU           | mmu-miR-29b                           | rno-miR-29b                              |
| 49                      | 5.8S Ribosomal RNA                |                                   |                                       |  |

**Performance Characteristics**
**I. Specificity**

In separate reactions, 200 attomoles of synthetic biotinylated let-7b, miR-1, miR-124, miR-133a, miR-145, miR-192, miR-29a, miR29b, miR-375, and miR-9 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 | let-7b             | miR-1  | miR-124 | miR-133a/b | miR-145 | miR-192 | miR-29a | miR-29b | miR-375 | miR-9  |
|--------------------|--------------------|--------|---------|------------|---------|---------|---------|---------|---------|--------|
|                    | % Cross-Reactivity |        |         |            |         |         |         |         |         |        |
| let-7b             | 100.0%             | 0.0%   | 0.0%    | 0.4%       | 0.2%    | 0.0%    | 0.2%    | 1.7%    | 0.1%    | 0.1%   |
| miR-1              | 0.1%               | 100.0% | 0.2%    | 0.5%       | 0.3%    | 0.0%    | 0.2%    | 1.8%    | 0.1%    | 0.0%   |
| miR-124            | 0.1%               | 0.0%   | 100.0%  | 0.0%       | 0.2%    | 0.2%    | 0.3%    | 2.3%    | 0.0%    | 0.0%   |
| miR-133a           | 0.0%               | 0.0%   | 0.0%    | 100.0%     | 0.4%    | 0.0%    | 0.5%    | 2.0%    | 0.1%    | 0.2%   |
| miR-145            | 0.1%               | 0.3%   | 0.0%    | 0.5%       | 100.0%  | 0.0%    | 0.2%    | 1.6%    | 0.1%    | 0.3%   |
| miR-192            | 0.1%               | 0.0%   | 0.1%    | 0.7%       | 0.0%    | 100.0%  | 0.2%    | 1.8%    | 0.2%    | 0.0%   |
| miR-29a            | 0.1%               | 1.9%   | 0.0%    | 0.0%       | 0.2%    | 0.1%    | 100.0%  | 0.8%    | 0.1%    | 0.2%   |
| miR-29b            | 0.1%               | 0.0%   | 0.0%    | 0.4%       | 0.0%    | 0.0%    | 0.5%    | 100.0%  | 0.0%    | 0.1%   |
| miR-375            | 0.1%               | 0.0%   | 0.0%    | 0.0%       | 0.1%    | 0.2%    | 0.0%    | 0.0%    | 100.0%  | 0.3%   |
| miR-9              | 0.1%               | 0.0%   | 0.0%    | 0.3%       | 0.2%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 100.0% |

**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 pancreas and colon tissue**

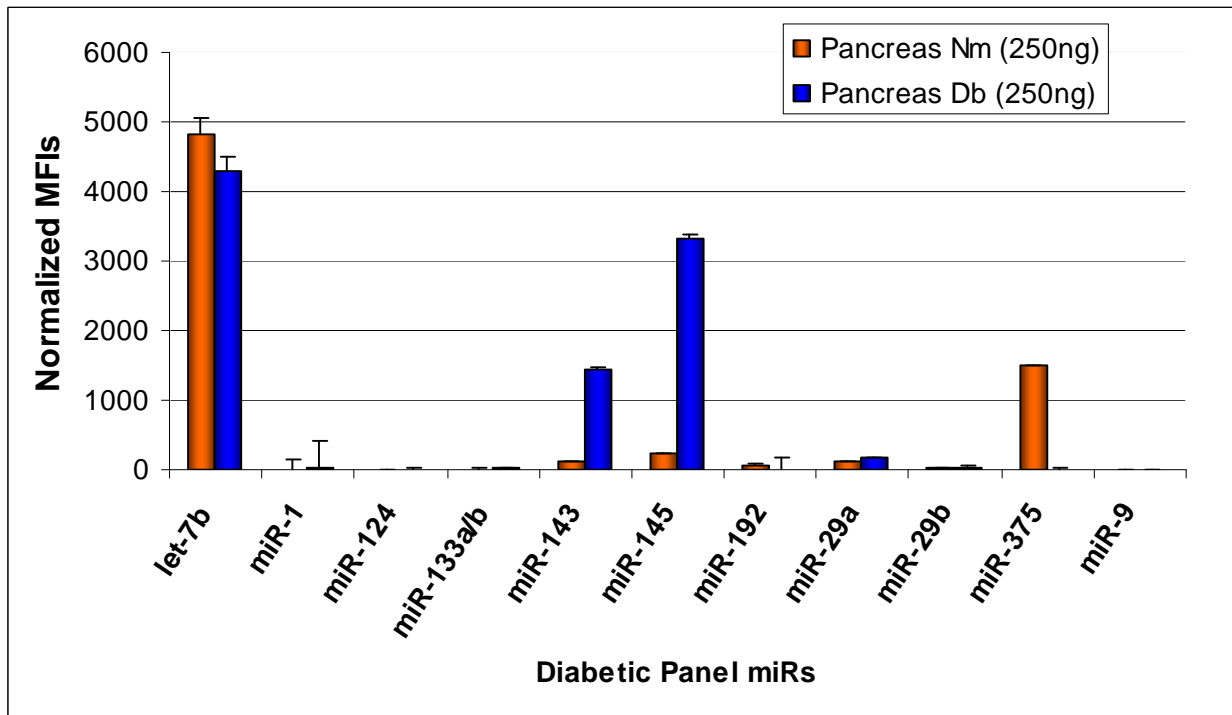
Total RNA was extracted from normal pancreas and colon tissue. The total RNA was labeled using the Vantage™ microRNA Labeling Kit (Cat. No. AM100044). A range of different concentrations of labeled microRNA was tested with the Vantage microRNA Detection Kit. The limit of detection was calculated using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

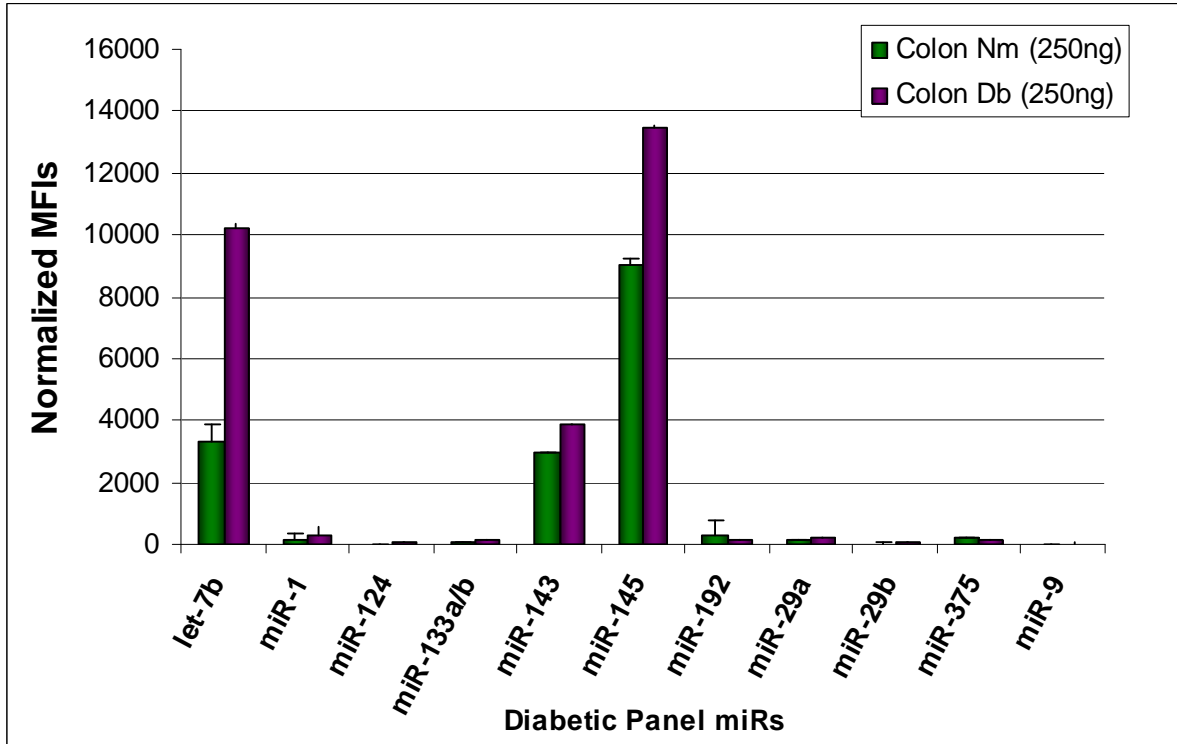
| microRNA   | Limit of Detection (ng Total RNA) |              |
|------------|-----------------------------------|--------------|
|            | Normal Pancreas                   | Normal Colon |
| 5.8 S      | 1.1                               | 0.6          |
| let-7b     | 1.5                               | 2.1          |
| miR-1      | nd                                | 40           |
| miR-124    | nd                                | nd           |
| miR-133a/b | nd                                | 112          |
| miR-143    | 899                               | 25           |
| miR-145    | 37                                | 0.5          |
| miR-192    | Nd                                | 28           |
| miR-29a    | 58                                | 58           |
| miR-29b    | nd                                | nd           |
| miR-375    | 6                                 | 36           |
| miR-9      | nd                                | 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 (Nm) and diabetic (Db) pancreatic and colon tissue. 250ng of total RNA from each tissue type was labeled using the Vantage™ microRNA Labeling Kit (AM100044) and then detected with the Vantage™ microRNA Detection Kit and Vantage™ Diabetes Panel1. The signals from 5.8S ribosomal RNA control were used to normalize the signals from the diabetic tissue to the normal tissue. The results show in both pancreas and colon, microRNAs in this panel are differentially expressed between diabetic and normal tissues.





**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 |
|------------------|----------|-------|---------|---------|---------|--------|-------|------|
| Diabetes Panel 1 | AM100050 | Low   | Neg     | Neg     | Neg     | Neg    | High  | 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).

Revision 011610JL