biohelix®

next generation HDA nucleic acid analysis

BESt™ Cassette

- *for amplicon detection*

BESt™ Cassette	Catalog No.	Qty
Type II	D1100S	25 units
Store at room temperature (15 - 25°C)		For Research Use Only

DESCRIPTION

The BioHelix® Express Strip (BESt™) Cassette is a novel, disposable, self-contained amplicon detection device. It is designed for instrument-free, cross-contamination-proof detection of amplicons derived from HDA, PCR, and other nucleic acid amplification reactions.

Features:

Cross contamination proof - detection takes place in an enclosed, disposable cassette.

Sensitive - more sensitive than gel-based detection methods.
Fast - takes less than one minute to prepare and results are viewable in 5-10 minutes.
Two-plex detection - Type II cassettes detect up to two amplicons.

RECOMMENDED STORAGE CONDITIONS

The BESt™ Cassette can be stored at room temperature for up to one year.

DETECTION MECHANISM

A. Generation of Dual-labeled Amplicons

Dual-labeled amplicons can be generated by one of two methods.

A.1. Primer-based labeling

➔ Label one primer with **Biotin** and the other primer with **fluorescein (FI)** or **Dioxygenin (DIG)**.

A.2. Probe-based labeling

➔ Label one of the two primers with **biotin** and the detection probe with **FI** or **DIG**. Make sure that the detection probe is complementary to the DNA strand extended from

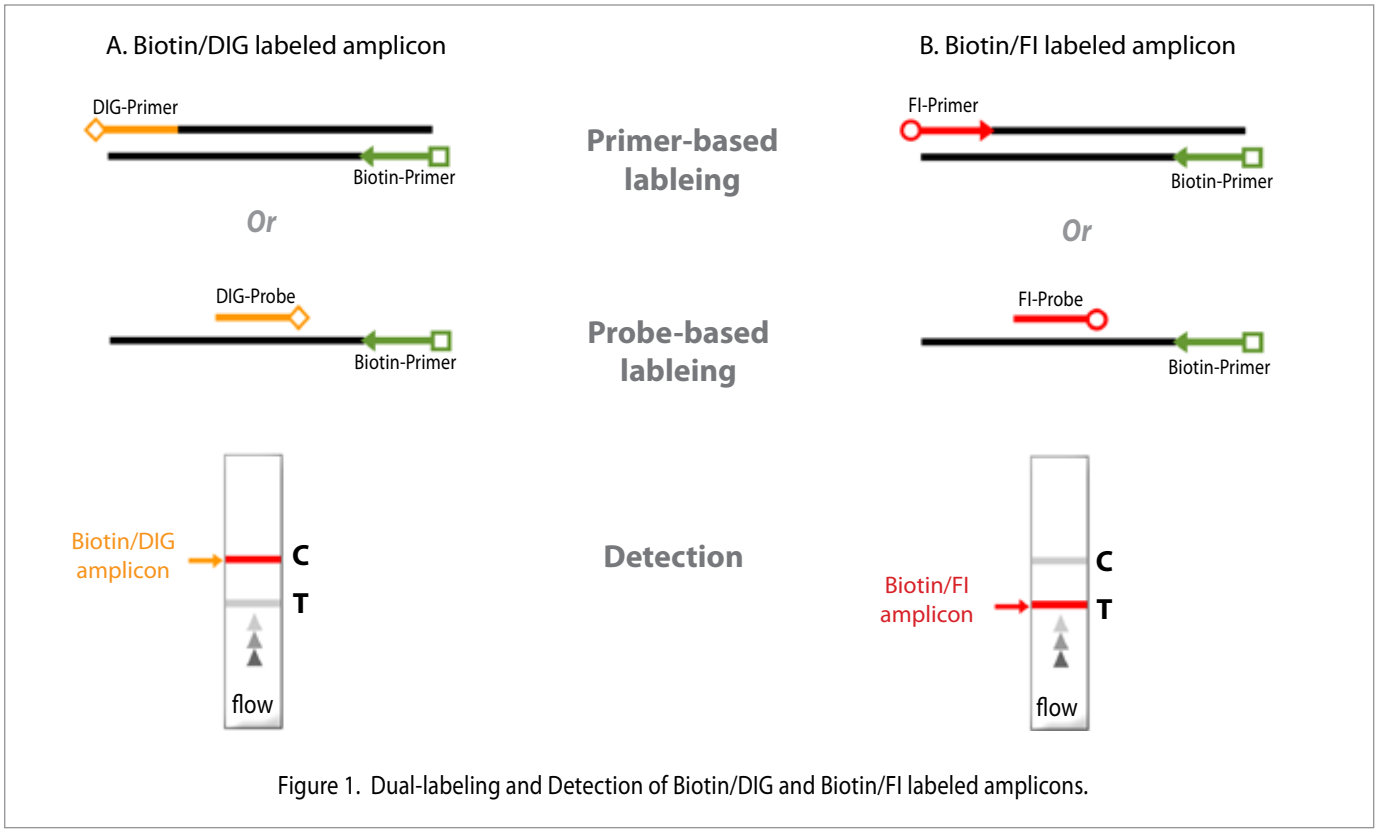

Figure 1. Dual-labeling and Detection of Biotin/DIG and Biotin/FI labeled amplicons.

the biotin-labeled primer.

➔ To generate biotin-labeled single-stranded amplicon for probe hybridization, asymmetric HDA or PCR should be performed. The unlabeled primer to biotin labeled primer ratio should range between 1:2 and 1:4. Generally, the detection probe concentration needs to be approximately 50 nM.

➔ Biotin/FI dual labeled amplicon is detected on T line of the strip, while the C line serves as a control for the flow function.

B. Amplicon Detection

The Type II BESt™ detection cassette is designed to detect up to two amplicons that are dual-labeled either with Biotin/FI or with Biotin/DIG. To generate biotin-labeled single-stranded amplicon for probe hybridization, asymmetric HDA or PCR should be performed.

➔ C line contains anti-DIG antibody and detects Biotin/DIG amplicon.

➔ T line contains anti-FI antibody and detects Biotin/FI amplicon.

PROTOCOL

1. BESt™ cassette consists of two parts: an inner amplicon cartridge and an outer detection chamber. The amplicon cartridge holds running buffer and a reaction tube in place and the detection chamber holds a DNA test strip.
2. Prepare properly labeled nucleic acid in a 0.2 ml PCR tube. the labeling method depends on the cassette type of your choice: See "Detection Mechanims".
3. Insert the tube in an amplicon cartridge next to running buffer (Fig. 2, step 1). Fold the cartridge in half and firmly close it (Fig. 2, step 2), revealing an arrow on the top.
4. Insert the closed cartridge halfway in a detection chamber (Fig. 2, step 3), with the arrow pointing the DNA test strip: do not use force to push it down.
5. Keep the assembled cassette upright and lower the handle and push it into the chamber body to close the cassette (Fig. 2, step 4). The handle will push the cartridge down, and lock into place when closed completely (Fig. 2, step 5).
6. Read the result after 5 to 10 minutes through the readout window*. The readout is invalid after 30 minutes.
7. Record the result.

** Note: If the control line is not displayed after 5 minutes, keep the cassette upright and tap it gently on the bench several times to accelerate the flow.*

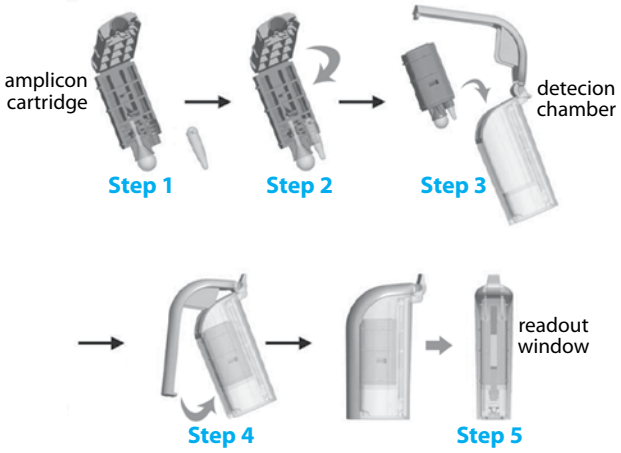

Figure 2. Diagrams for detection procedure.

NOTICE TO PURCHASER

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