Nucleic Acid Test Strip for Cas12/13

[Product Code]

EDN-CZ01

[Working Principle]

This product utilizes a chromatographic double-antibody sandwich method to detect Cas12/13-labeled probes. Users only need to label one end of the probe with biotin (Biotin) and the other end with fluorescein isothiocyanate (FITC) or 6-carboxyfluorescein (6-FAM) during the probe design process. This product can then be used to detect Cas enzyme digestion products following LAMP, RAA, or RPA isothermal amplification of the target gene.

[Packaging Specifications]

10 strips/pack × 5, moisture-proof packaging in an aluminum foil bag.

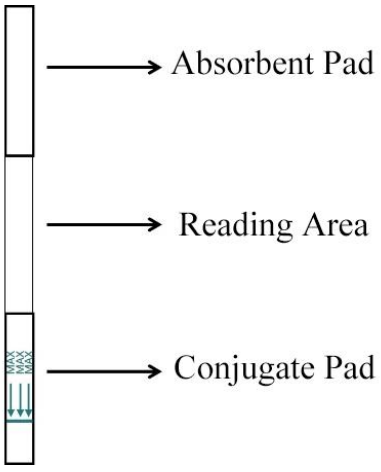

Figure 1. Schematic Diagram of the Structure of a Disposable Nucleic Acid Test Strip

[Storage Conditions and Shelf Life]

Storage Conditions: Store in a dry, dark place at a temperature between 4°C and 30°C.

Shelf Life: 12 months.

[Operating Steps]

1. Take out the appropriate number of test strips based on the number of samples to be tested and mark them on the absorbent pad (see Fig. 1). Each test strip can only be used once for a single sample. If the volume of the amplification product is between 50-100 μL, nucleic acid detection can be performed directly in a 200 μL PCR reaction tube. If the product volume is less than 50 μL, add ultrapure water to the PCR tube to bring the volume to 50 μL, mix thoroughly before testing.

2. After the Cas enzyme digestion reaction of the PCR, RPA, or RAA product in the CRISPR system is completed, open the PCR reaction tube, and insert the test strip's conjugate pad end (indicated by the arrow) into the PCR reaction tube (see Fig. 1). Ensure that the liquid level does not exceed the top of the conjugate pad. Wait for the entire reading area to be soaked (this usually takes 1–2 minutes; during colder conditions, such as in winter, absorption may be slower, extending the soaking time for the reading area). Once the control line (C line) develops color, you can remove the test strip. Read the result directly based on the color development of the

test strip.

3. Observe the result within 10 minutes after the control line (C line) develops color. Any reading after 10 minutes is invalid.

4. Record the result and dispose of the test strip in a sealed container in a safe location.

Result Interpretation:

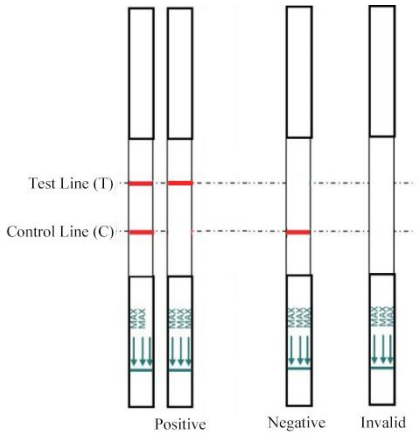

Figure 2. Interpretation Diagram for Cas12/13 Specific Nucleic Acid Detection Test Strip Results

1. Positive (+):

A red band appears on both the control line (C line) and the test line (T line) of the test strip; or a red band appears on the test line (T line) but not on the control line (C line). Both situations indicate that Cas12/13 successfully performed effective cleavage and activated the reporter group to display color, and the result can be determined as positive.

2. Negative (-):

A red band appears only on the control line (C line), and the test line (T line) shows no color, indicating a negative result. This result suggests that Cas12/13 failed to cleave the reporter molecule and did not activate the reporter group to display color.

3. Invalid:

No bands appear on either the control line (C line) or the test line (T line), indicating that the test strip or amplification reagent may be damaged, expired, or there was an operational error. In this case, carefully read the instructions and repeat the amplification and detection process. If the issue persists, stop using products from the same batch and contact your local supplier immediately.

[Precautions and Safety Tips]

1. This product should be used with a probe. If the synthesis purity of the probe is insufficient (i.e., if the probe contains free Biotin or free FITC), the test line (T line) on the strip will turn red when using ultrapure water as the negative control, resulting in a false positive for the negative control.

2. This product can be used to assess the quality of probe synthesis. Adjust the probe concentration in the blank negative control to 200 nM and perform the cleavage reaction. If the T line turns red within 5-7 minutes after immersing the test strip into the Cas12/Cas13 cleavage product, it indicates that the probe purity is insufficient for experimental requirements, leading to false positives. It is recommended to replace the probe synthesis supplier and re-synthesize the probe. When the probe concentration is between 20-50 nM, the T line will not turn red within 30 minutes of immersing the test strip into the Cas12/Cas13 cleavage product.

3. This product is for research use only. Please carefully read the instructions before use and follow them strictly. Failure to do so may result in incorrect outcomes.

4. The product should be stored in appropriate conditions as specified in the manual and used within its validity period. Improper storage or expired products may lead to inaccurate results. Once opened, the test strip should be used promptly to avoid moisture affecting the experimental results. Insufficient lighting in the testing environment or color vision deficiencies in the operator may also lead to incorrect results.

5. After use, promptly place the strip in a sealed bag and dispose of it properly. This product is intended for single use only; do not reuse.