FLASHTEST

【Product Name】
Bluetongue virus (BTV) PCR Test Kit (Dry)

【Package Specifications】
4 T/box

【Intended Use】
This kit is suitable for the detection of Bluetongue virus (BTV), and can be used for the auxiliary diagnosis of clinical Bluetongue virus (BTV) infection, but it is not for confirmation of the diagnosis. This product requires operation with a fluorescence quantitative PCR instrument and can achieve rapid POCT detection.

【Testing Principle】
The test kit uses nucleic acid extraction reagents to extract the nucleic acid (DNA/RNA) from the sample.
Under the action of a high-efficiency reverse transcriptase, cDNA complementary to the RNA template is synthesized in a one-step reaction using RNA as the template. Under the action of Taq enzyme, the copy number of the specific target fragment is amplified through cycles of high-temperature denaturation, annealing at a moderate temperature, and extension using DNA as the template. The fluorescence-labeled specific probe hybridizes with the amplified target fragment, and the 5'→3' exonuclease activity of Taq polymerase separates the reporting group and quencher group of the fluorescence probe, emitting a specific fluorescence signal. The specific fluorescence signal is detected using a fluorescence PCR instrument, and the result is determined based on the Ct value of the sample and the formation of the amplification curve.

【Contents】

Item	Quantity	Storage
PCR master mix	4 pcs	-20℃ (Away from light)
Instructions for use	1 pcs	Room Temperature
Sample buffer	4 pcs	
Biohazard bag	4 pcs	

【Storage conditions and shelf life】
1. Shelf life: 24 months.
2. Production date and expiration date are on the package.

【Compatible Instruments】
This test kit is compatible with FLASHTEST real-time quantitative fluorescence PCR instrument.

【Sample】
EDTA anticoagulated blood

【Sample Handling】
EDTA anticoagulated blood: Collect blood using a blood collection tube containing EDTA anticoagulant.
1. Add 100 μL of blood to the sample buffer with a disposable dropper.
2. Thoroughly mix the sample buffer with a repetitive pipetting action, using the disposable dropper.
3. Add 200 μL of mixed buffer to the nucleic acid extraction cartridge for extraction.

【Specimen storage】
Samples used for nucleic acid extraction and detection should be tested as soon as possible.
Samples to be tested within 24 hours can be stored at 4°C.
Samples that can not be tested within 24 hours should be stored at -20°C for up to 10 days.
Avoid repeated freezing and thawing of samples.

【Instructions for Use】
1. Add Elution
1.1 Add 20μL of elution from magnetic bead extraction, to each PCR tube. Close the lid tightly.
1.2 Shake all the liquid to the bottom of the PCR tube. Use the vortex mixer to mix the PCR tube thoroughly, for 5 seconds. After mixing, make sure all liquid is at the bottom of the PCR tube, by shaking the tube again. (optional: use a small centrifuge for 3 seconds to shift all liquids to the bottom.)

2. PCR Amplification
2.1 Set the parameters as follows:

Step	Temperature	Time	Cycle
1	55°C	3min	1
2	94°C	30s	1
3	94°C 58°C	5s 20s	×40

2.2 The reaction volume is 20μL. Fluorescence channels:

Channel	FAM	VIC	ROX	Cy5
Target	BTV	Exogenous reference		

3. Result Interpretation
3.1 Reference Range:

Parameter	Reference Range	Result Interpretation
Internal Control	Ct ≤ 37 and there is a clear exponential amplification curve	Valid
	Ct > 37 or No Ct	Invalid
Pathogen	Ct ≤ 37 and there is a clear exponential amplification curve	Positive
	Ct > 37 or No Ct	Negative

3.2 Test Result Interpretation

Pathogen Result	Internal Control Result	Test Result Interpretation
Positive	Valid	Pathogen Positive
Negative	Valid	Pathogen Negative
Any Result	Invalid	Test invalid, please retest

【Test Limitations】
1. The test results of this kit should be comprehensively analyzed in conjunction with other relevant physical examination results and should not be used as the sole basis for diagnosis.
2. Improper sample collection, transportation, storage, handling, and inadequate laboratory conditions may lead to inaccurate results.
3. Other unconfirmed interferences or PCR inhibitors may lead to false negative results.
4. Sequence variations caused by mutations or other factors in the target gene of the virus being tested may lead to false negative results.

【Product Performance】
1. Positive and negative control consistency: The positive and negative controls included in this test kit have been tested with the company's working reference materials, and the positive and negative compliance rates are both 100%.
2. Sensitivity: limit of detection is 500 copies/mL.
3. Specificity: This assay does not cross-react with non-target pathogen samples.
4. Precision: The coefficient of variation (CV, %) of the Ct values for 10 consecutive tests of one strong positive sample and one weak positive sample is ≤5%.

【Notes】
1. Before using a PCR kit, check the lyophilized PCR mix at the bottom of the tube is in good condition (white and clumped). Liquified lyophilized PCR mix can not be used. After opening, it should be used as soon as possible or stored away from light.
2. This product is only for in vitro testing (for animals). All operations must strictly follow the instructions.
3. Overloading samples may result in false negatives. Retest is recommended.
4. Avoid bubbles in PCR tubes. Keep the tube cap firmly closed.
5. Use disposable tips, gloves, and laboratory coats.
6. After tests, disinfect the workbench with 10% hypochlorous acid, 75% ethanol, or UV light.
7. All items in the kit should be treated as biowaste and handled in accordance with local laboratory regulations.