Foot and Mouth Disease Virus Antigen Test

SVANODIP® FMDV-Ag

Penside test for the detection of FMDV antigen in swab and tissue samples

Developed and validated in collaboration with the Institute for Animal Health, Pirbright Laboratory, UK

This manual covers the following FMDV Test kits: Article number 10-4100-13

References

Lab-On-Site: http://www.labonsite.com/workplan.php?id=7


Manufacturer

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**General information**

Foot and mouth disease (FMD) is a highly contagious disease, caused by a virus of the genus Aphthovirus of the family Picornaviridae. It affects cloven-hoofed animals, in particular cattle, swine, sheep, goats, and deer. FMD is an OIE notifiable disease and is endemic in many regions of the world, including much of Africa, Asia, and some countries in South America. It has the potential for causing extensive economic losses to the agricultural sector of a country.

There are seven different serotypes of FMD virus, namely O, A, C, SAT 1, SAT 2, SAT 3 and Asia 1. Infection or vaccination with one serotype, or in some cases even a different subtype of the same serotype, does not provide immunity against another.

The virus is very easily spread. Animals may become infected by contact with an infected animal, contaminated animal parts or objects. The virus may also spread airborne over substantial distances. The incubation period is usually 2 to 14 days. Symptoms may vary among affected animals. Cattle and pigs develop a sudden fever, followed by an eruption of blisters around the hooves, in the mouth and nose and on udders of females. Sheep and goats may be infected with the disease without showing any symptoms.

Ruminants that recover from FMD can carry the virus for many months, maybe up to years, in their oropharynx. Transmission of clinical disease from carrier to susceptible animals has never been demonstrated, but there is circumstantial evidence that indicates that this would be possible. Therefore the carrier animal must be considered a potential source of virus for future outbreaks.

Early recognition that animals may be suffering from a disease that could be FMD is a critical step in order to take the correct control measures. Early diagnosis is important in order to avoid the spread of disease and to take measures to prevent further outbreaks. Early recognition of FMD outbreaks is crucial to prevent the spread of disease and to take measures to prevent further outbreaks.

**Principle**

The FMDV-Ag test is a simple direct test for the detection of all seven serotypes of the FMDV antigen in swab and tissue samples, preferably using vesicular fluid and epithelium from acute lesions (unruptured or freshly ruptured), involving mouth, tongue or interdigital/coronary band regions. Non-vesicular body fluids, such as blood, serum, milk and oesophageal-phyaryngeal liquid collected by probang cup, are not suitable samples for examination in this test.

**Precaution**

1. Carefully read and follow all instructions.
2. Store the kit and all reagents at +4 to +28°C.
3. Handle all used materials as though capable of transmitting disease.
4. Do not mix components or instruction booklets from different test kits.
5. Care should be taken to prevent contamination of kit components.

**Specimen collection and processing**

**Unruptured lesions**

1. Draw the vesicular fluid with a syringe (not provided) or soak a cotton swab (provided) with vesicular fluid from a manually freshly ruptured lesion.
2. Put the screw cap with dropper on the sample dilution buffer bottle. (For longer periods, the bottle should be stored with the screw cap without dropper.)
3. Add approx. 500 µL (12 drops) of Sample Buffer to test tube.
4. Add approx. 500 µL of vesicular fluid from the syringe into the buffer and mix. Alternatively, extract fluids from the cotton buds by inserting the cotton swab into the sample test tube and swirling around in the sample buffer and pressing the cotton bud against the tube wall.
5. If using a swab, this is removed. Close the lid of the test tube with sample solution.

**Tissue sampling/preparation**

A separate “Tissue Sample Extraction Kit” is required.

Approximately 0.2 g of epithelium (the size of the nail on the little finger) should be collected from the surface or margins of vesicles or any other tissue of interest. Best results will be achieved with fresh and friable material.

**Contents**

- 20 Test devices (in sealed foil bags with desiccant)
- 1 Sample Buffer bottle (25 mL)
- 1 Screw cap with dropper
- 20 Plastic pipettes
- 20 Test tubes (Eppendorf)
- 20 Swabs

**Interpretation of the results**

1. A line in the Control (C) window shows that the test has worked correctly. Any device that has not produced a control line at 10 minutes must be classified as void.
2. A line in the Test (T) window indicates a positive result and that the sample contains FMDV antigen. If no line appears in the Test (T) window the test is negative for FMDV antigen. If negative, please note that an infection with FMDV should not be completely excluded.
3. A difference in the intensity may occur between the line in the Test (T) and Control (C) window but this does not affect the interpretation of the result.

**NOTE!**

To confirm either a negative or a positive result, the whole device can be sent to the laboratory for confirmatory testing with PCR.