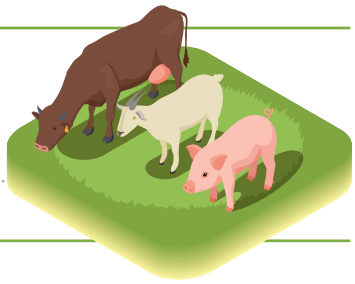
VDRG® FMDV 3Diff/PAN Ag Rapid Kit



Foot and Mouth Disease Virus

Foot-and-mouth disease virus (FMDV) infects cloven hoofed (two-toed) mammals such as cattle, sheep, goats, pigs and various wildlife species. There are seven types (O, A, C, SAT 1, SAT 2, SAT 3 and Asia1), that are subject to high mutation rates which constantly generate new FMDV variants. Typical cases of FMD are characterized by a vesicular condition of the feet, buccal mucosa and, in females, the mammary glands.
This test kit, the diagnostic reagent can detect FMDV specific serotype antigens and FMDV All serotype antigens quickly and simply within 15 minutes after dropping the specimens.

Introduction

+ **Intended use** : FMDV specific serotype antigens detection and FMDV All serotype antigens detection
  - Specific serotypes : O, A, Asia1
  - All serotypes : O, A, C, Asia1, SAT1, SAT2, and SAT3
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Vesicular fluid, Infected tissue, Saliva and cultivated virus etc.
+ **Component**
  - FMDV 3Diff/PAN Ag Rapid Test Device
  - Sample Dilution Buffer
  - Test Tube
  - Swabs
  - Dropper

Features

+ Differential diagnosis of 3 different serotypes (O,A,Asia1) of FMD virus
+ Available Rapid kit at field farm condition
+ Applicable to various suspect specimens (vesicular fluid, infected tissue, saliva, and cultivated virus etc)
+ Concurrent diagnosis both of a virus's common antigen(all 7 serotypes) and serotype-specific antigens (O,A,Asia1)
+ Clinical Sensitivity
  1) FMD type O 88.2%(n=60/68) vs PCR
  2) FMD type A 100%(n=70), Asia1 100%(n=62), SAT1 100%(n=20), SAT2 100%(n=20), SAT3 100%(n=20), C 100%(n=20), in spiking samples with virus (titer : $1.0x10^5 TCID_{50}$/mL or higher)
+ Clinical Specificity
  1) type O, type A and strip PAN : normal cattle 100%(n=92), normal pigs 100%(n=400)
  2) type Asia1 : normal cattle 100%(n=92), normal pigs 99.5%(n=398/400)

Cross reactivity

Cross reactivity among serotypes of FMDV

VDRG® FMDV 3Diff/PAN Ag Rapid kit

Serotype	3Diff			PAN
	O	A	Asia1	PAN
O	**Positive**	Negative	Negative	**Positive**
A	Negative	**Positive**	Negative	**Positive**
Asia1	Negative	Negative	**Positive**	**Positive**
SAT1	Negative	Negative	Negative	**Positive**
SAT2	Negative	Negative	Negative	**Positive**
SAT2	Negative	Negative	Negative	**Positive**
C	Negative	Negative	Negative	**Positive**

Sample preparation

A. Sample collection

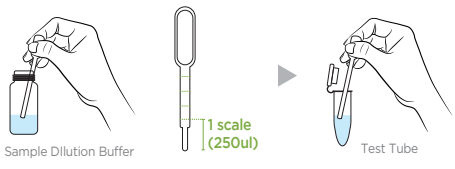
1. Collection of fluid from intact vesicle : draw vesicular fluid with syringe.
2. Collection of fluid from ruptured vesicles : Soak vesicular fluid using a cotton swab.
3. Tissue sampling from ruptured lesions :
   ① Follow the instruction manual in **VDRG® Tissue Sample Extraction kit** (CAT.NO. EXT-TIS-11, not provided).
   ② Collect 0.2g of fresh and friable epithelium (nail size of little finger) from surface or margin of vesicles or other tissues of interest.
4. Saliva : Collect saliva from swine or bovine using appropriate method.
   ① For bovine, collect saliva directly from tongue using disposable plastic gloves.
   ② For swine, collect saliva using chewing rope or other oral fluid collection kit.
5. Cultured virus : Collect virus culture media using micropipette.

B. Sample processing

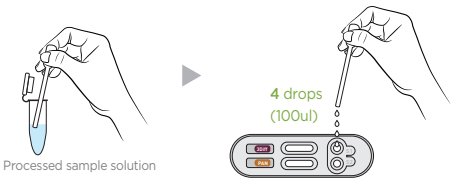
1. Syringe-collected fresh vesicular fluid
   ① Add 1 scale (approximately 250ul) of Sample Dilution Buffer to the test tube using dropper.
   ② Add 250μℓ of syringe-collected vesicular fluid to the test tube and mix gently.
2. Swab-collected fluid from ruptured vesicles
   ① Add 2 scales (approximately 500ul) of Sample Dilution Buffer to the test tube using dropper.
   ② Soak the swab in the dilution buffer, mix by swirling and extract the vesicular lesion fluid by pressing the cotton swab against the tube wall.
   ③ Remove the swab from the test tube after extraction.
3. Tissue-extracted fluid
   ① Follow the instruction manual in **VDRG® Tissue Sample Extraction Kit** (Cat.No. EXT-TIS-11, not provided).
   ② Add 4 scales (1mL) of Sample Dilution Buffer to the extraction vial.
   ③ Add tissue sample to the extraction vial.
   ④ Cut the tissue into pieces using scissors and grind using pestle and sand included in the kit.
   ⑤ Leave the homogenate for 2-3 minutes to settle down tissue fraction.
   ⑥ Use the clarified fluid for testing.
4. Saliva
   ① Add 2 scales (approximately 500ul) of Sample Dilution Buffer to the test tube using the dropper.
   ② Centrifugate (6,000rpm, 10min) the collected saliva and soak the swab with supernatant of centrifugated saliva.
   ③ Soak the swab in the dilution buffer, mix by swirling and extract the saliva by pressing the cotton swab against the tube wall.
   ④ Remove the swab from the test tube after extraction.
   ⑤ Use the diluted and clarified saliva for testing.
5. Virus culture media
   ① Add 200ul of Sample Dilution Buffer to the test tube, Eppendorf tube or microplates.
   ② Add 200ul of virus culture media to the test tube and mix by several times of swirling.

Test procedure

1 Add 1~4 scales of Sample Dilution Buffer depending on sample types to Test Tube using Dropper and process the sample.

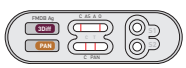


2 Slowly add 4 drops (100 ul) of the processed sample solution to position “S1” and “S2” on the test device using a Dropper or micropipette(not provided).

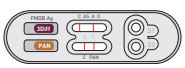


3 Read results within **15 minutes** exactly. Reading later than 15 minutes may cause inaccurate results.

1. Positive when both control and test lines are red.

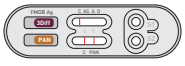


1) FMDV serotype O positive result



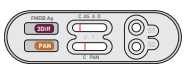
2) FMDV serotype A positive result

3) FMDV serotype Asia-1 positive result



4) FMDV other serotype (SAT1, SAT2, SAT3, C) positive result

2. Negative when only control lines are red.



3. Re-test when control line is not visible.

Order Information

Cat No.	Product Name	Quantity
PM-FMD-16	VDRG® FMDV 3Diff/PAN Ag Rapid kit	10 Tests/Box