MEDIAN Diagnostics

LIVESTOCK ANIMAL

Rapid kit Product Catalog

For One Health

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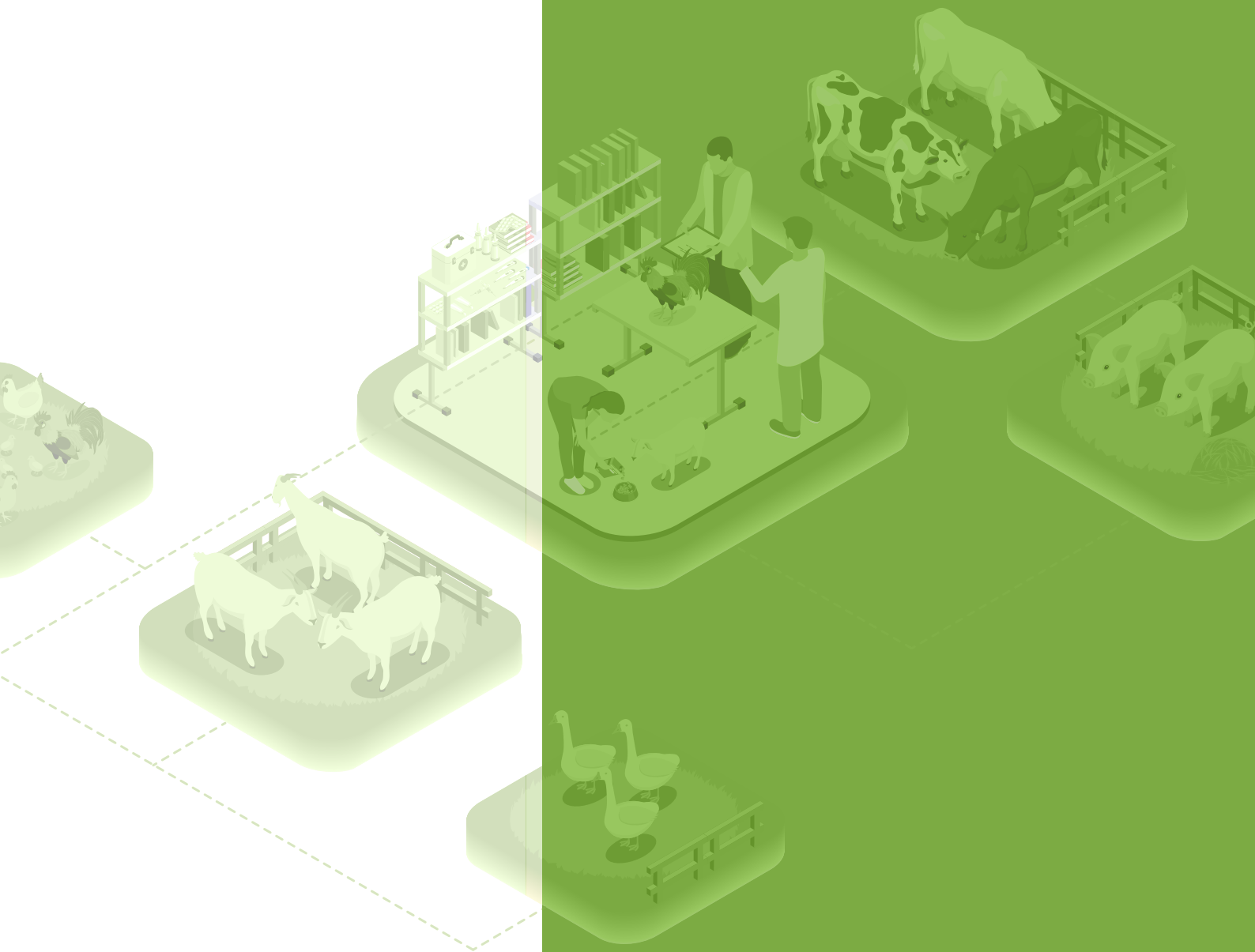
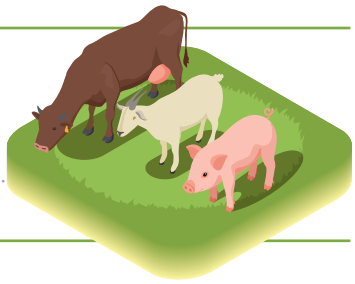


CONTENTS

VDRG® FMDV 3Diff/PAN Ag Rapid Kit



WOAH certified (Registration Number: WOAH 022029)

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

World Organisation for Animal Health
Founded as OIE

Validated and certified by WOAH as fit for the purposes defined in the kit insert provided with this kit.
Registration number: WOAH 022029

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

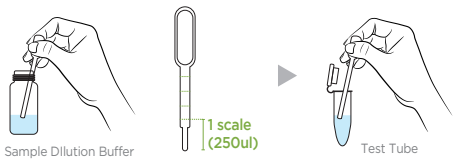
1. Collection of fluid from intact vesicle : draw vesicular fluid with syringe.
2. Collection of fluid from ruptured vesicles : Soak vesicular fluid using a cotton swab.
3. Tissue sampling from ruptured lesions :
   ① Follow the instruction manual in **VDRG® Tissue Sample Extraction kit** (CAT.NO. EXT-TIS-11, 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

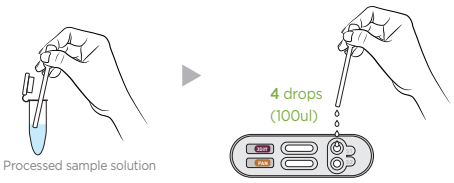
1. Syringe-collected fresh vesicular fluid
   ① Add 1 scale (approximately 250ul) of Sample Dilution Buffer to the test tube using dropper.
   ② Add 250μℓ of syringe-collected vesicular fluid to the test tube and mix gently.
2. Swab-collected fluid from ruptured vesicles
   ① Add 2 scales (approximately 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.

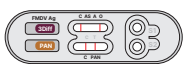


2 Slowly add 4 drops (100 ul) of the processed sample solution to position “S1” and “S2” on the test device using a Dropper or micropipette(not provided).

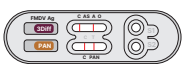


3 Read the results at **15 minutes** exactly. Reading later than 15 minutes may cause inaccurate results.

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



1) FMDV serotype O positive result

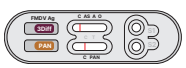


2) FMDV serotype A positive result

3) FMDV serotype Asia1 positive result

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

2. Negative when only control lines are red.

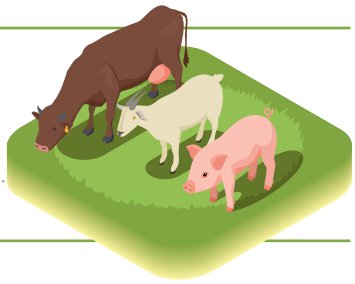


3. Re-test when control line is not visible.

Order Information

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

VDRG® FMDV PAN Ag Rapid Kit



General Description The test kit, the diagnostic reagent can detect all seven-FMDV serotype antigens quickly and simply within 15 minutes after dropping the samples.

Introduction

+ **Intended use** : Detection of all seven FMDV serotype antigens
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Fluids from unruptured vesicles/aphthae and vesicular epithelium from ruptured lesions
+ **Component** - FMDV PAN Ag Rapid Test device
  - Sample Dilution Buffer
  - Test Tube
  - Swab
  - Dropper

Features

+ Clinical Sensitivity
  1) FMD type O 88.2%(n=60/68) vs PCR
  2) type A 100%(n=70), Asia 100%(n=62), SAT 1 100%(n=20), SAT 2 100%(n=20), SAT 3 100%(n=20), C 100%(n=20), in spiking samples with virus (titer : 1.0x105TCID50/ml or higher)
+ Clinical Specificity
  1) normal cattle 100%(n=92), normal pigs 100%(n=400)

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 (size of little finger nail) from surface or margin of vesicles or other tissues of interest.
4. Cultured virus: collect virus culture media using micropipette.

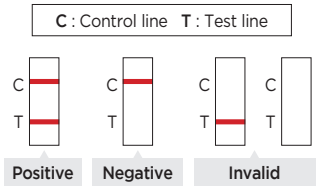
B. Sample processing

1. Syringe-collected fresh vesicular fluid
   ① Add 4 drops (approximately 100μℓ) of Sample Dilution Buffer to the test tube
   ② Add 100uL of syringe-collected vesicular fluid to the test tube and mix gently.
2. Swab-collected fluid
   ① Add 10 drops (approximately 250μℓ) of Sample Dilution Buffer to the test tube.
   ② Soak the swab in the fluid, mix by swirling and extract the vesicular lesion fluid by pressing the cotton bud against the tube wall.
   ③ Remove the swab from the test tube after extraction.
3. Tissue-extracted fluid
   ① Follow the instruction manual of **VDRG® Tissue Sample Extraction kit** (Cat. No. EXK-FMD-11, not provided).
   ② Add 40 drops (1㎖) of Sample Dilution Buffer to the extraction vial
   ③ Add tissue sample to the extraction vial
   ④ Cut the tissue with scissors and grind using pestle and sand included in the kit.
   ⑤ Leave the homogenate for 2-3 minutes to settle down tissue fraction.
4. Virus culture media
   ① Add 100uL of Sample Dilution Buffer to the test tube, Eppendorf tube or microplates.
   ② Add 100uL of virus culture media to the test tube and mix by several times of swirling.

Test procedure

1 Slowly add 4 drops (100uL) of the processed sample solution to position "S" on the test device using a dropper (provided) or micropipette (not provided).

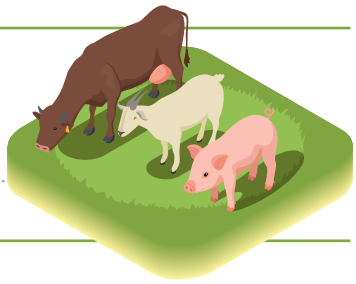
2 Read test results at **15 minutes.**



Order Information

Cat No.	Product Name	Quantity
PM-FMD-15	VDRG® FMDV PAN Ag Rapid Kit	10 Tests/Box

VDRG® FMDV NSP Ab Rapid Kit



General Description

VDRG® FMDV NSP Ab Rapid kit is a lateral flow chromato-graphic immunoassay for the detection of antibodies against the non-structural protein of Foot and Mouth Disease virus (FMDV) in whole blood, serum and plasma samples from bovine and swine. This rapid kit enables fast and simple detection of FMDV-NSP antibodies within 10 minutes after sample application.

Introduction

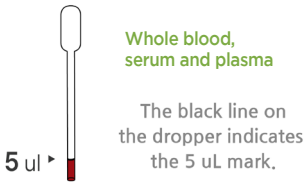
+ **Intended use** : Detection of FMDV-NSP antibodies
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Bovine and swine whole blood, serum and plasma
+ **Component** - FMDV NSP bg Rapid Test device
  - Sample Dilution Buffer
  - Dropper
  - Sample Dilution Buffer Rack

Features

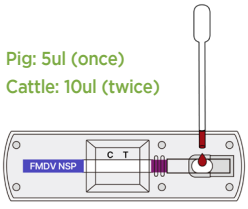
+ On-farm NSP antibody testing
+ Rapid results within 10 minutes
+ Easy to use (no equipment, small sample)
+ Clinical Sensitivity:
  Pig serum samples: 83.3% (10/12) vs FMDV NSP AB ELISA
  Cattle serum samples: 93.3% (28/30) vs FMDV NSP AB ELISA
+ Clinical Specificity: 99.34% (994/1,000) vs FMDV NSP AB ELISA
+ High agreement with NSP antibody ELISA kit
+ Superior performance over competitor rapid kit
+ Applicable to pigs and cattle

Test procedure

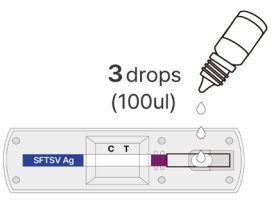
1 Sample collection
Using the provided dropper, collect the sample up to the black line (5ul mark).



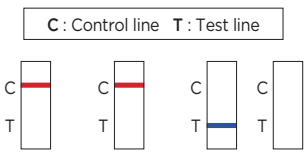
2 Sample application
Pig: Apply 5ul (once) into the sample well.
Cattle: Apply 10ul (twice) into the sample well.



3 Buffer application
Add 3 drops (100ul) of the dilution buffer into the sample well.



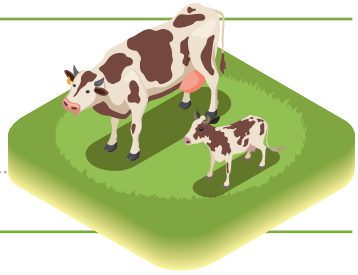
4 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PM-FMD-19	VDRG® FMDV NSP Ab Rapid Kit	10 Tests/Box

VDRG® Bovine Brucella Ab Rapid Kit



Bovine Brucella

Brucellosis is an infectious disease that occurs from contact with animals carrying Brucella bacteria. Brucella can infect cattle, goats, camels, dogs, and pigs. Brucella is highly contagious, spreading very easily between cattle as the calf, the membranes and the uterine fluids all contain large quantities of bacteria.
This test kit, the diagnostic reagent can detect bovine brucella antibody quickly and simply within 10 minutes after dropping the samples.

Introduction

+ **Intended use** : Detection of Bovine Brucella antibody
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Bovine whole blood, plasma, and serum
+ **Component**
  - Bovine Brucella Ab Rapid device
  - Dilution Buffer
  - Capillary tube

Features

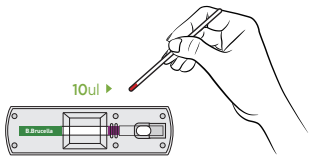
+ Clinical Sensitivity : 100% (n=105) vs Rose-Bengal, TAT, SVANOVIR c-ELISA, MEDIAN ELISA
+ Clinical Specificity : 100% (n=110) vs Rose-Bengal, SVANOVIR c-ELISA, MEDIAN ELISA
+ Analytical Sensitivity : 100% Sensitivity in OIE, USDA Standard Positive Serum (N=9)
+ Analytical Specificity : 100% Specificity in USDA Standard Negative Serum (N=3)
+ No Cross-reaction with other bovine infectious disease (BLV, BHV-1, BRSV, BVD, PI-3)

Test procedure

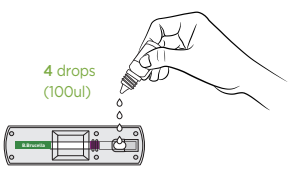
1 Take 10 ul of the sample using capillary tube unto the dark score line on the capillary tube.

Whole blood +EDTA | Serum or Plasma | (*Dark score line on the capillary tube is the indicator line for 10ul.)

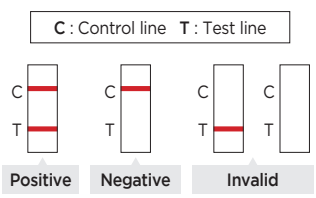
2 Add 10 ul of the sample into the sample hole.



3 Add 4 drops (approximately 100ul) of the dilution buffer.



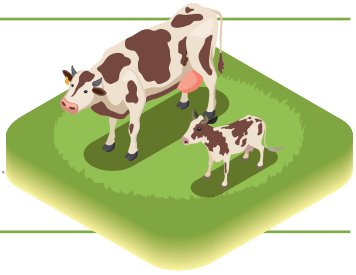
4 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PB-BRU-11	VDRG® Bovine Brucella Ab Rapid Kit	10 Tests/Box

VDRG® BLV Ab Rapid Kit



Bovine
Leukemia
Virus

Bovine leukemia virus (BLV) is a retrovirus that may cause lymphosarcoma in cattle. The virus resides in blood lymphocytes where circulating antibodies are unable to neutralize it. Therefore, once an animal is infected with BLV, it is infected for life. BLV is economically significant to the producer because of premature culling or death as a result of lymphosarcoma.
This test kit, the diagnostic reagent can detect BLV antibody quickly and simply within 10minutes after dropping the samples.

Introduction

+ **Intended use** : Detection of Bovine Leukemia antibody
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Bovine serum
+ **Component**
  - BLV Ab Rapid device
  - Dilution buffer bottle
  - Capillary tube

Features

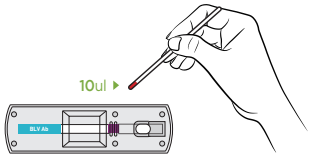
+ Easy test, Ready-to-use reagent
+ Clinical performance vs AGID, commercial Blocking ELISA kit, PCR

		AGID	Blocking ELISA	PCR
VDRG® BLV Ab Rapid Kit	**Sensitivity**	100%(100/100)	100%(105/105)	100%(50/50)
	Specificity	95.6%(152/159)	98.7%(152/154)	100%(23/23)

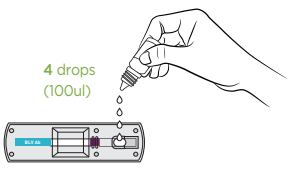
Test procedure

1 Take 10 ul of the sample using capillary tube unto the dark score line on the capillary tube.

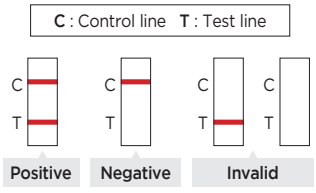
2 Add 10 ul of the sample into the sample hole.



3 Add 4 drops (approximately 100ul) of the dilution buffer.



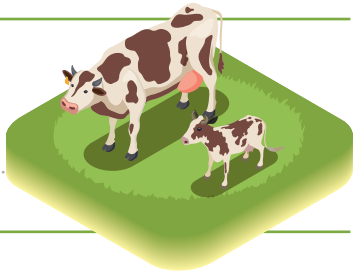
4 Read test results at **10~15 minutes.**



Order Information

Cat No.	Product Name	Quantity
PB-BLV-11	VDRG® BLV Ab Rapid Kit	10 Tests/Box

VDRG® BoviDia-5 Ag Rapid Kit



Bovine Diarrhea

Bovine Diarrhea is a disease of cattle caused by the Bovine Viral Diarrhea Virus and Escherichia coli. The virus is widespread and most herds are at risk for infection. In the susceptible herd, Bovine Diarrhea can be a serious, costly disease.
This is a diagnostic kit to detect viral *(Coronavirus, Rotavirus)*, protozoal *(Cryptosporidium parvum, Giardia lamblia)*, and enteropathogenic *Escherichia coli (E. coli K99)* antigen. This test kit, the diagnostic reagent can differential detect each antigens quickly and simply within 10 minutes after dropping the samples.

Introduction

+ **Intended use** : Detection of Cryptosporidium, Giardia, Rotavirus, Corona virus and *Escherichia coli* k99 antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Bovine fecal sample, infected intestine, and cultivated bacteria or viruses etc
+ **Component**
  - BoviDia 5 Ag Rapid device
  - Sample dilution buffer
  - Swabs - Dropper cap

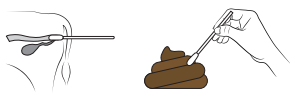
Features

+ Differential diagnosis for 5 different bovine enteric pathogens including coronavirus, rotavirus, cryptosporidium, giardia, and pathogenic *E.coli*
+ Available rapid kit at field farm condition
+ The highest sensitivity and detection limits
+ Applicable to various suspect specimens (ex, fecal sample, infected intestine, and cultivated bacteria or viruses etc)
+ No cross Reactivity with heterogenous pathogens
+ Clinical performance vs real time RT-PCR

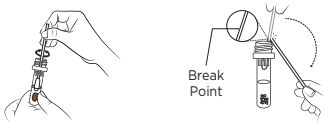
Bovi Dia-5	Number of samples (Positive/Negative)	Sensitivity	Specificity
Coronavirus	606 (63/543)	92.1%	97.8%
Rotavirus	706 (286/420)	90.6%	96.2%
Cryptosporidium	606 (45/561)	95.6%	99.6%
Giardia	606 (43/563)	93%	98.9%
E.coli K99	606 (36/570)	91.7%	100%

Test procedure

1 Swab the feces from the stool or rectums using the sample collection swab.

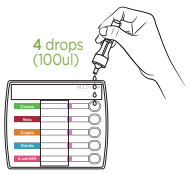


2 Put the sample swab in a tube containing the sample diluent ,mix it 10 times, then cut the groove into the swab and cut off the rod, and let the head of the swab fall into the tube.

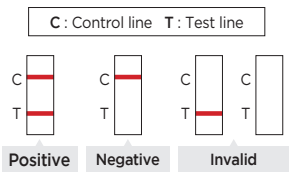


3 Attach the dropper cap to the tube containing the sample dilution solution and the cut swab to close it.

4 Add 4 drops of specimen to the each five sample hole of BoviDia 5 Ag Rapid device.



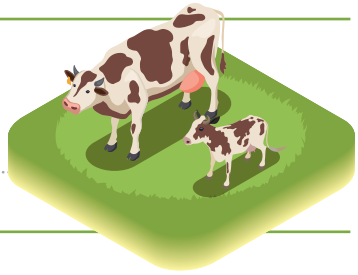
5 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PB-BD5-11	VDRG® BoviDia 5 Ag Rapid Kit	10 Tests/Box

VDRG® Bovine Pregnancy Rapid Kit



Bovine Pregnancy

PAG (Pregnancy-Associated Glycoproteins) is pregnancy-related protein secreted from bovine placenta of pregnant cow. PAG is detection marker for early pregnancy testing in cattle.
VDRG® Bovine Pregnancy Rapid kit is a lateral flow chromatographic immunoassay for the detection of PAG (Pregnancy associated glycopreteins) in whole blood, serum and plasma of pregnant cow.

Introduction

+ **Intended use** : PAG detection
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Bovine whole blood, serum and plasma
  * Samples collected 28 days after artificial insemination or breeding
+ **Component**
  - PAG Test Strip,
  - Dilution Buffe
  - Whole Blood Dropper
  - Test Tube
  - Test Tube Rack
  - Instruction Manual

Features

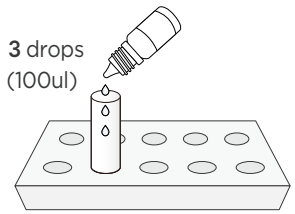
+ Early detection 28 days after artificial insemination or breeding
+ Rapid pregnancy test by detecting PAG within 20 minutes
+ Available at field farm condition
+ Easy-to-use without equipment
+ Cost effective diagnostic tool

		VDRG® Bovine Pregnancy Rapid kit		Total
		Positive	Negative	
PAG ELISA* Results	Positive	804	12	816
	Negative	14	505	519
VDRG® Bovine Pregnancy Rapid kit	Clinical sensitivity			98.53%
	Clinical specificity			97.30%
	Accuracy			98.05%

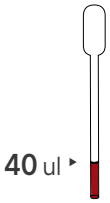
* Results of 2 commercial PAG ELISA products

Test procedure : Whole blood

1 Add 3drops (approximately 100ul) of the Dilution Buffer into the Test Tube.

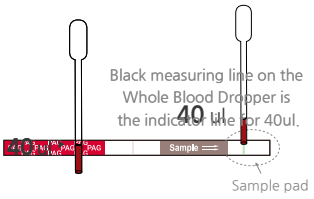


2 The cow's blood is sucked up to black measuring line of the dropper.

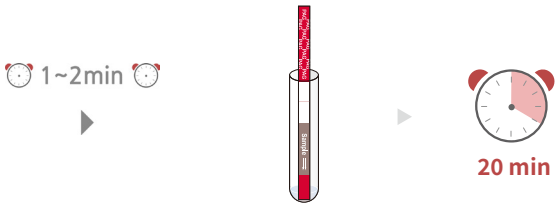


Black measuring line on the Whole Blood Dropper is the indicator line for 40ul.

3 Drop 40ul of blood collected with the dropper into the sample pad (green line) of the PAG Test Strip.

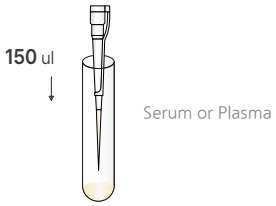


4 After the blood has been completely absorbed into the sample pad (about 1~2 mins after sample drop), put the Test Strip into the Test Tube with dulution buffer and see the result after 20 minutes.

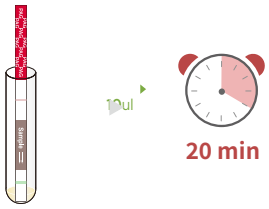


Test procedure : Serum/plasma

1 Using a micropipette, transfer 150ul of serum or plasma to the Test Tube.



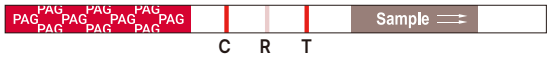
2 Put the PAG Test Strip into the Test Tube and see the result after 20 minutes.



Interpretation

Pregnancy : T > R

When the control line (C) is visible clearly, and the test line (T) is darker than the reference line (R).



Suspected pregnancy (Re-test after 7 days) : T = R

When the C line is visible clearly, and the T line and R line are similarly dark.
Recommend retesting with new test sample after 7 days.

Non-pregnancy : T < R or T (X)

When the C line is visible clearly, and the T line is lighter or invisible than R line.

Invalid

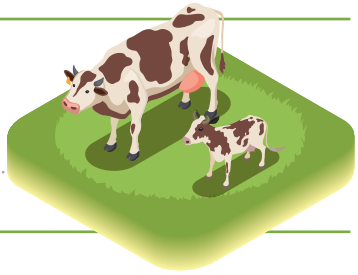
The C line is not visible regardless of whether the T line visible or not.

* A colored band should always be visualized at C line regardless of the results at T line.
If C line is not visualized, it is invalid. The retest is recommended using new Test Strip.

Order Information

Cat No.	Product Name	Quantity
PB-PAG-11	VDRG® Bovine Pregnancy Rapid Kit	25 Tests/Box

VDRG® BVDV Ag Rapid kit-SP



Bovine
Viral
Diarrhea
Virus

Bovine viral diarrhea (BVD) is a wasting disease of cattle that outbreaks worldwide and is the World Organization for Animal Health (WOAH) listed disease. There are two forms of infection: transiently infected (TI) cattle which is the most common infection after birth, and persistently infected (PI) cattle which is infected through placenta during early stage of gestation and shed the virus throughout their lifetime.
VDRG® BVDV Ag Rapid kit-SP is a lateral flow chromatographic immunoassay for the detection of Bovine viral diarrhea virus(BVDV) antigen in serum or plasma of bovine.

Introduction

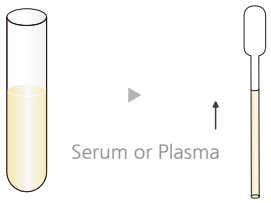
+ **Intended use** : Detection of BVDV antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Serum or plasma from precolostral newborn calves or calves >3 months
+ **Component**
  - BVDV Ag Test Device
  - Dropper
  - Dilution Buffer

Features

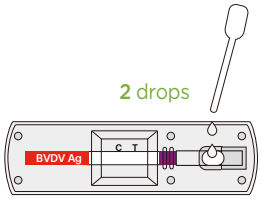
+ Can be used for serum or plasma from precolostral newborn calves or calves over 3 months old.
+ Rapid and easy test for detecting persistently infected (PI) cattle.
+ Fast result within 20 minutes
+ Easy to use without equipment
+ Available Rapid kit at field farm condition
+ Clinical sensitivity: 95.38% (62/65)
+ Clinical specificity: 99.33% (2,661/2,679)

Test procedure

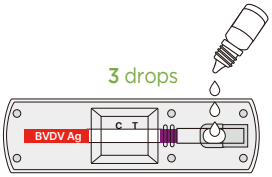
1 Using the Dropper, collect bovine serum or plasma.



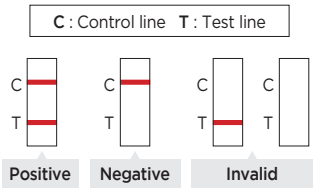
2 Add 2 drops (50ul) of collected sample with the Dropper into the sample hole of the BVDV Ag Test Device.



3 Add 3 drops (50ul) of the Dilution Buffer into the sample hole of the device.



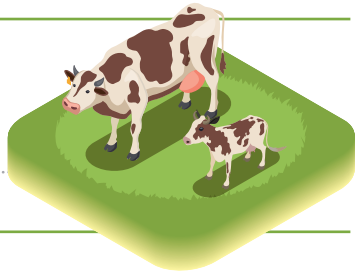
4 Read test results at **20 minutes.**
*** Do not read the result after 20 minutes.**



Order Information

Cat No.	Product Name	Quantity
PB-BVD-11	VDRG® BVDV Ag Rapid kit-SP	10 Tests/Box

VDRG® BVDV Ag Rapid kit-FE



Bovine Viral Diarrhea Virus

VDRG® BVDV Ag Rapid kit-FE is a lateral flow chromatographic immunoassay for the detection of Bovine viral diarrhea virus(BVDV) antigen in feces and ear notch of bovine.

Introduction

+ **Intended use** : Detection of BVDV antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Bovine feces, ear notch
+ **Component**
  - BVDV Ag Test Device
  - Dilution Buffer
  - Swab
  - Dropper Cap

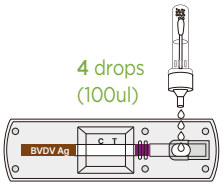
Test procedure - Feces

1 Collect the sample from bovine feces using the Swab.

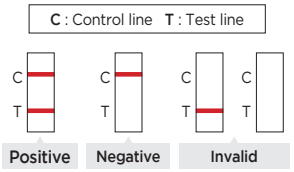
2 Put the sample swab into the Dilution Buffer and mix 10 times or more, then cut the groove into the swab and cut off the rod, and let the head of the swab fall into the tube.

3 Securely tighten the Dropper Cap to the tube containing the sample dilution solution and the cut swab to close it.

4 Add 4 drops(100ul) of extracted sample to the sample hole of BVDV Ag Test Device.

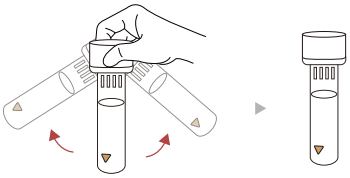


5 Read the result at **20 minutes.**

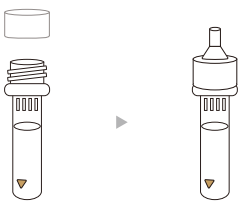


Test procedure - Ear notch

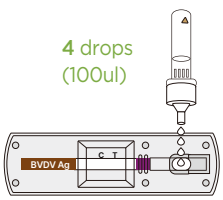
1 Put the ear notch (least 2-3mm in diameter) of the cattle into the sample dilution tube and mix thoroughly for at least 10 times to ensure proper blending. Then, incubate at room temperature for 30 minutes.



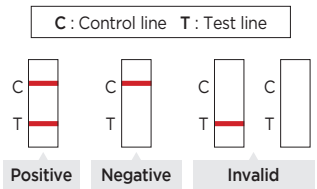
2 Securely tighten the Dropper Cap on the buffer tube.



3 Add 4 drops (100ul) of extracted sample to the sample hole of BVDV Ag Test Device.



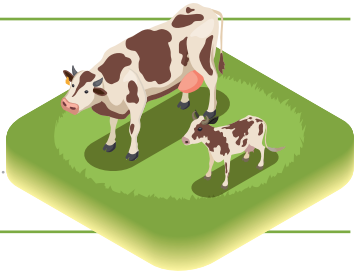
4 Read the result at **20 minutes.**
*** Do not read the result after 20 minutes.**



Order Information

Cat No.	Product Name	Quantity
PB-BVD-12	VDRG® BVDV Ag Rapid kit-FE	10 Tests/Box

VDRG® Cryptosporidium Ag Rapid kit



Cryptosporidium

Bovine cryptosporidiosis is an enteric protozoal disease caused by *Cryptosporidium* parvum, predominantly affecting neonatal calves. It is characterized by watery diarrhea, dehydration, and growth retardation, with high morbidity but typically low mortality. Transmission occurs through the fecal-oral route, and the pathogen poses a zoonotic risk, especially to immunocompromised individuals.
VDRG® Cryptosporidium Ag Rapid kit is a lateral flow chromatographic immunoassay for the detection of *Cryptosporidium* antigen in bovine fecal samples.

Introduction

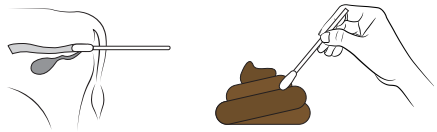
+ **Intended use** : Detection of Cryptosporidium antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Feces
+ **Species** : Bovine
+ **Component**
  - Cryptosporidium Ag Test Device
  - Dropper
  - Dilution Buffer

Features

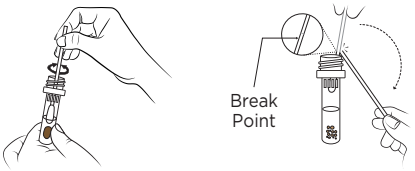
+ Limit of Detection (LoD): 10^2 oocyst/mL
+ Fast result within 10 minutes
+ Easy to use without equipment
+ Available Rapid kit at field farm condition
+ Clinical sensitivity: 95.6% (43/45)
+ Clinical specificity: 99.6% (559/561)

Test procedure

1 Swab the feces from the stool or rectums using the sample collection swab.

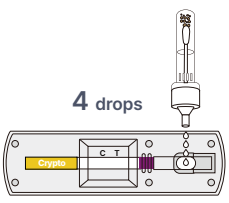


2 Put the sample swab in a tube containing the sample diluent ,mix it 10 times, then cut the groove into the swab and cut off the rod, and let the head of the swab fall into the tube.

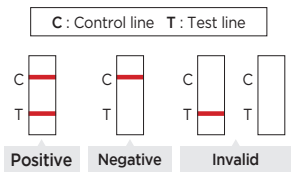


3 Attach the dropper cap to the tube containing the sample dilution solution and the cut swab to close it.

4 Add 4 drops of specimen to the sample hole of Cryptosporidium Ag Rapid Device.



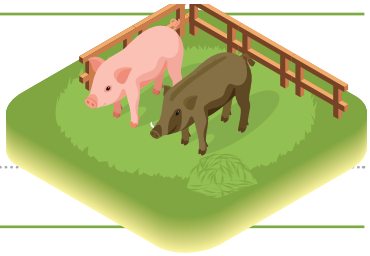
5 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PB-CRY-11	VDRG® Cryptosporidium Ag Rapid kit	10 Tests/Box

VDRG® ASFV Ag Rapid Kit



Gold type

African
Swine
Fever
Virus

African Swine Fever (ASF) is a highly contagious viral disease of suids with severe hemorrhagic fever and high lethality. ASFV is a large (175~215nm), lipoprotein-enveloped, icosahedral ds DNA virus and belongs to a member of Genus Asfivirus Family Asfaviridae. ASF virus are classified into 22 genotypes based on p72 gene, but only 2 genotype viruses are active out of Africa.
This test kit is the diagnostic reagent that can detect ASFV antigens quickly and simply within 15minutes after infection of samples.

Introduction

+ **Intended use** : Detection of African Swine Fever virus antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Whole blood
+ **Species** : Pig or wild boar
+ **Component**
  - ASFV Ag Rapid device
  - Dilution buffer
  - Capillary tube

Features

+ 100% on Herd base (n=7), 87.6% on individual base (n=177)
+ 97.8% on Herd base (n=46), 99.9% on individual base (n=954)
+ Easy to use without equipment
+ Easy to handle at field farm condition
+ Fast identification of result within 15 minutes
+ High clinical specificity

Sensitivity based on Ct value of qPCR

ASFV qPCR (Ct-value)	Clinical Sensitivity
Ct < 20	100% (5/5)
20 ≤ Ct < 24	100% (35/35)
24 ≤ Ct < 27	85% (34/40)
Total	92.5% (74/80)

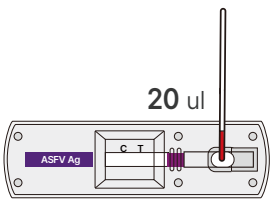
Test procedure

1 Using Capillary Tube, collect 20ul of whole blood to the black line of the Capillary Tube.

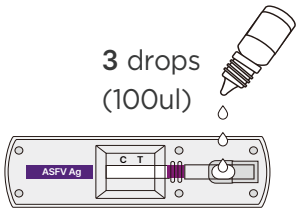
Whole blood
+EDTA

(*Dark score line on the capillary tube is the indicator line for 10ul.)

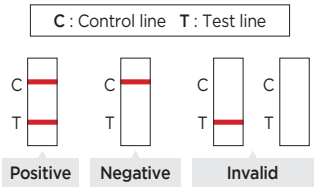
2 Add the collected 20 ul of whold blood into the sample hole.



3 Add 3 drops (approximately 100ul) of the dilution buffer.



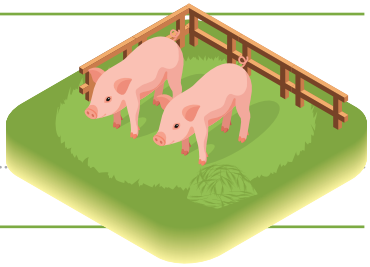
4 Read test results at **15 minutes.**



Order Information

Cat No.	Product Name	Quantity
PS-ASF-12	VDRG® ASFV Ag Rapid kit	10 Tests/Box

VDRG® PEDV Ag Rapid Kit



Porcine
Epidemic
Diarrhea
Virus

Porcine Epidemic Diarrhea Virus (PEDV) is an RNA virus belonging to corona virus. If acutely infected with PEDV, it is characterized by inducing vomiting and watery diarrhea regardless of the age of swine. Although the death rate is low as 1~3% range by recovering within one week after infection in case of grown swine, the death rate is 50% in case of piglets and may be 100% in severe cases.
This test kit, the diagnostic reagent can detect PEDV antigens quickly and simply within 10 minutes after dropping the samples.

Introduction

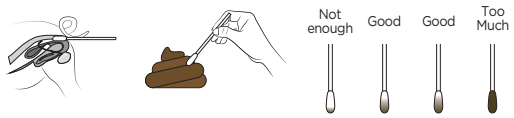
+ **Intended use** : Detection of Porcine Epidemic Diarrhea Virus antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Porcine diarrhea feces
+ **Component**
  - PEDV Ag Rapid device
  - Sample dilution buffer
  - Swabs
  - Dropper

Features

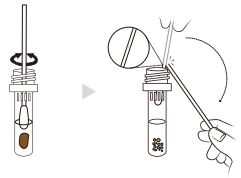
+ Easy test, Ready-to-use reagent
+ High correlation with RT-PCR and a high reproducibility and accuracy.
+ Clinical sensitivity : 98.3% (228/232) vs RT-PCR
+ Clinical specificity : 98.6% (276/280) vs RT-PCR
+ No cross-reaction with other viruses

Test procedure

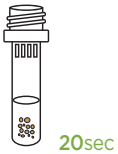
1 Collect a diarrhea specimen from diarrhea feces or those in the anus using swabs for fecal specimen collection.



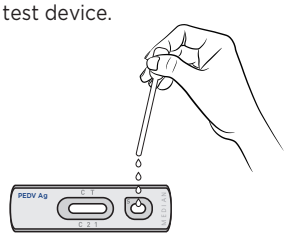
2 Put the specimen into the container that contains sample dilution buffer and stir well the solution with a swab in order to extract the virus from the fecal specimen thoroughly.



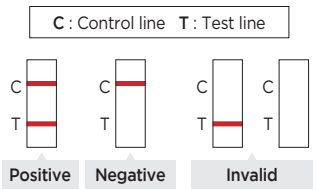
3 Place the tube upright until the large particles go down. (20sec.)



4 Take the supernatant of specimen solution using dropper, and then instill 4 drops into the test device.



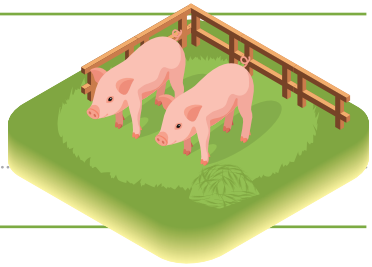
5 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PS-PED-11	VDRG® PEDV Ag Rapid Kit	10 Tests/Box

VDRG® TGEV Ag Rapid Kit



Transmissible
Gastro**E**nteritis
Virus

Transmissible gastroenteritis (TGE) is a highly contagious infection of swine caused by TGE Coronavirus (TGEV). TGEV infection is followed by a very high mortality rate (up to 100%) in piglets less than two weeks old.
This test kit, the diagnostic reagent can detect TGEV antigens quickly and simply within 10 minutes after dropping the samples.

Introduction

+ **Intended use** : Detection of Porcine Transmissible Gastroenteritis Virus antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Porcine diarrhea feces
+ **Component**
  - TGEV Ag Rapid device
  - Sample dilution buffer
  - Swabs
  - Dropper

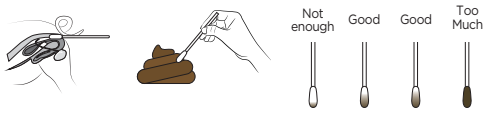
Features

+ Easy test, Ready-to-use reagent
+ High correlation with RT-PCR, High reproducibility
+ Clinical sensitivity : 100% (400/400) vs RT-PCR
+ LoD(Limit of Detection) comparison data between competitor's kit and VDRG® TGEV Rapid Kit

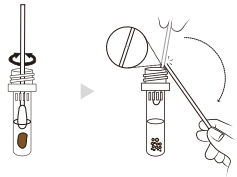
Specimens	TCID$_{50}$/mL	Competitor's TGEV Ag Rapid Kit	VDRG® TGEV Ag Rapid Kit
Standard sample 1	10^4	**Positive**	**Positive**
Standard sample 2	10^3	Negative	**Positive**
Standard sample 3	10^2	Negative	**Positive**

Test procedure

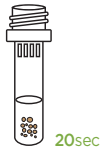
1 Collect a diarrhea specimen from diarrhea feces or those in the anus using swabs for fecal specimen collection.



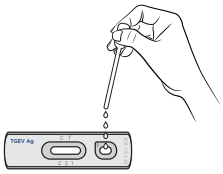
2 Put the specimen into the container that contains sample dilution buffer and stir well the solution with a swab in order to extract the virus from the fecal specimen thoroughly.



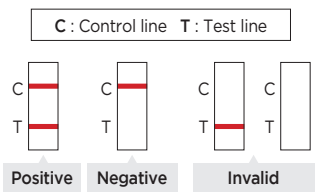
3 Place the tube upright until the large particles go down.(20sec.)



4 Take the supernatant of specimen solution using dropper, and then instill 4 drops into the test device.



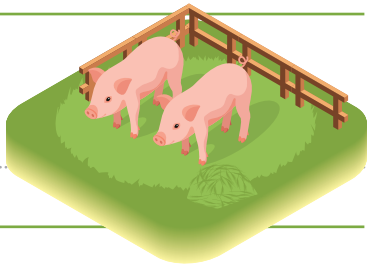
5 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PS-TGE-11	VDRG® TGEV Ag Rapid Kit	10 Tests/Box

VDRG® ROTA Ag Rapid Kit



Rotavirus

Rota virus is an RNA virus with size of 80nm belonging to Reo virus. After being discovered for the first time in 1973, it occurs throughout the year as it is persistent in pig farms for the most part. Although the infection rate is high, the death rate is low (7~20%). It is characterized by diarrhea symptoms in three week old weaning pigs for the most part.
This test kit, the diagnostic reagent can detect Rota virus antigens quickly and simply within 10 minutes after dropping the samples.

Introduction

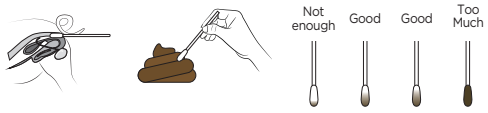
+ **Intended use** : Detection of Rota virus, group A antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Porcine diarrhea feces
+ **Component**
  - Rota Ag Rapid device
  - Sample dilution buffer
  - Swabs
  - Dropper

Features

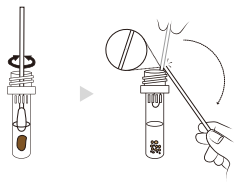
+ Easy test, Ready-to-use reagent
+ High correlation with RT-PCR and a high reproducibility and accuracy.
+ Clinical sensitivity : 93.2% (272/292) vs RT-PCR
+ Clinical specificity : 99.1% (420/428) vs RT-PCR
+ No cross reaction with other viruses

Test procedure

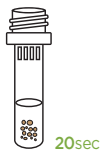
1 Collect a diarrhea specimen from diarrhea feces or those in the anus using swabs for fecal specimen collection.



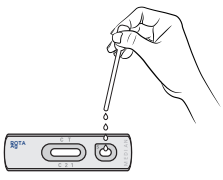
2 Put the specimen into the container that contains sample dilution buffer and stir well the solution with a swab in order to extract the virus from the fecal specimen thoroughly.



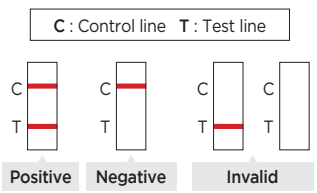
3 Place the tube upright until the large particles go down.(20sec.)



4 Take the supernatant of specimen solution using dropper, and then instill 4 drops into the test device.



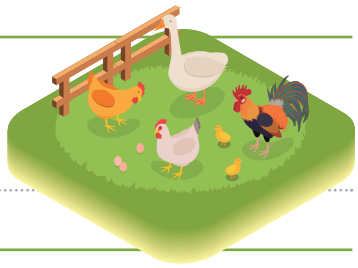
5 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PS-ROT-11	VDRG® ROTA Ag Rapid Kit	10 Tests/Box

VDRG® AIV Ag Rapid kit 2.0



Avian Influenza Virus

Avian influenza refers to the disease caused by infection with avian (bird) influenza (flu) Type A viruses. Infected birds shed avian influenza virus in their saliva, mucous and feces. Although avian influenza A viruses usually do not infect people, rare cases of human infection with these viruses have been reported. This test kit, the diagnostic reagent can detect AIV antigens quickly and simply within 15 minutes after dropping the samples.

Introduction

+ **Intended use** : Detection of various subtypes of Avian influenza virus antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Chicken cloaca, feces or duck cloaca, feces, oropharyngeal swab, tissue homogenate
+ **Component**
  - AIV Ag Rapid device
  - Sample dilution buffer
  - Swabs
  - Dropper Cap

Features

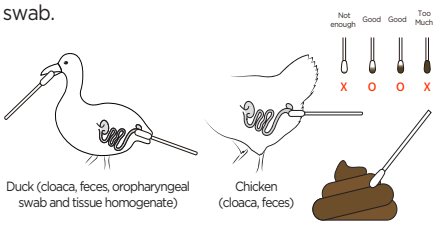
+ Clinical Sensitivity : 100% when the sample contained more than $10^{4.0}$ EID_{50}/mL (vs PCR)
+ Clinical Specificity : 99.7%
+ Detection of various subtypes of influenza virus
+ Available at field farm condition
+ Applicable both to HPAI and LPAI
+ Cost effective diagnostic tool
+ Reliable quality based on AI technical revolution ver 2.0 and guaranteed by ISO9001:2015
+ Applicable to various samples and species

Limit of Detection (LoD)

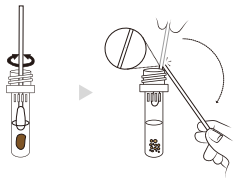
Serotype	LoD (EID_{50}/mL)
A/wild bird feces/Korea/KU-VI092474/2009[H5N2]	$1x10^{4.3}$
A/Baikal teal/Korea/2406/2014[H5N8]	$0.5x10^{3.0}$
A/Madarin_duck/Korea/K16-187-3/2016[H5N6]	$0.5x10^{3.0}$
A/duck/Korea/ES2/2016 [H5N6]	$1x10^{4.0}$
A/breeder duck/Korea/Gochang1/2014[H5N8]	$1x10^{5.1}$

Test procedure

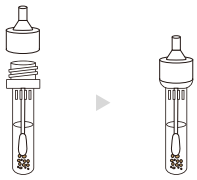
1 Collect the samples from specimens using the swab.



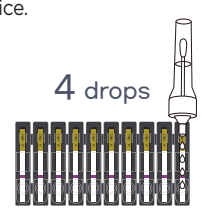
2 Put the sample swab in a tube containing the sample diluent ,mix it 10 times, then cut the groove into the swab and cut off the rod, and let the head of the swab fall into the tube.



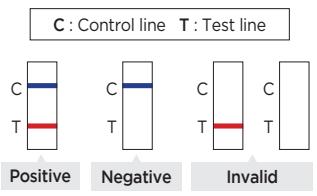
3 Attach the dropper cap to the tube containing the sample dilution solution and the cut swab to close it.



4 Add 4 drops of specimen to the sample hole of AIV Ag Rapid device.



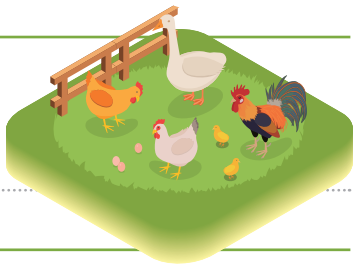
5 Read test results at **15 minutes.**



Order Information

Cat No.	Product Name	Quantity
PP-AIV-12	VDRG® AIV Ag Rapid Kit 2.0	30 Tests/Box

VDRG® IBDV Ag Rapid kit



Infectious Bursal Disease Virus

Infectious bursal disease virus (IBDV) is a *Birnaviridae* family virus that causes Gumboro disease, an immunosuppressive condition primarily affecting chicks aged 3 to 6 weeks by targeting the bursa of Fabricius. The virus induces lymphoid depletion, leading to increased susceptibility to secondary infections and significant economic losses in poultry production. As a WOAH-listed disease, IBD requires strict biosecurity, routine surveillance, and early detection, as subclinical infections may interfere with vaccine efficacy.
This diagnostic kit detects IBDV antigens quickly and easily in 10 minutes after sample application.

Introduction

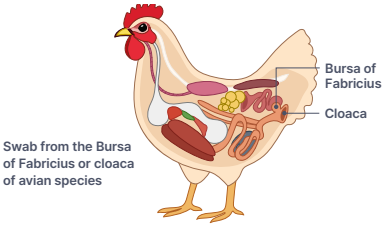
+ **Intended use** : Detection of Infectious bursal disease virus (IBDV) antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Bursa of Fabricius or cloaca, and tissue homogenates
+ **Species** : Avian
+ **Component**
  - IBDV Ag Rapid device
  - Sample dilution buffer
  - Swabs
  - Dropper Cap

Features

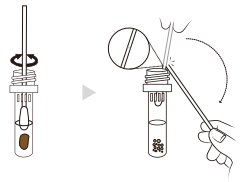
+ Clinical Sensitivity : 92.3% (12/13) compared to qRT-PCR on an individual sample basis.
+ Clinical Specificity : 100% (15/15) compared to qRT-PCR
+ Limit of Detection (LoD): 1 x $10^{5.8}$ EID_{50}/mL of embryonated egg-grown IBDV
+ Cross-reaction: No cross-reactivity with major avian pathogens, including Avian Influenza Virus (AIV), Infectious Bronchitis Virus (IBV), Newcastle Disease Virus (NDV), *Mycoplasma gallisepticum* (MG), and *Mycoplasma synoviae* (MS).

Test procedure

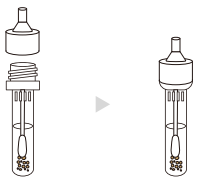
1 Collect the samples using a swab.



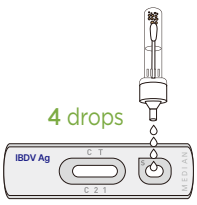
2 Put the sample swab in a tube containing the sample diluent ,mix it 10 times, then cut the groove into the swab and cut off the rod, and let the head of the swab fall into the tube.



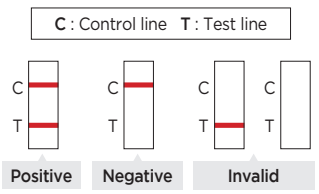
3 Attach the dropper cap to the tube containing the sample dilution solution and the cut swab to close it.



4 Add 4 drops of specimen to the sample hole of IBDV Ag Rapid device.



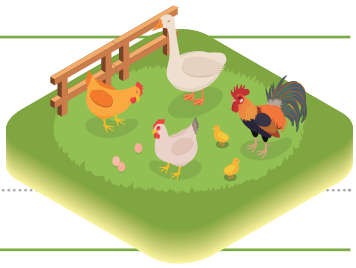
5 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PP-IBD-11	VDRG® IBDV Ag Rapid kit	10 Tests/Box

VDRG® IBV Ag Rapid kit



Infectious Bronchitis Virus

Infectious Bronchitis Virus (IBV) is a highly contagious acute respiratory disease affecting chickens. Certain strains can cause nephritis, drop in egg production, and poor shell quality, leading to economic losses. As a WOAH-listed disease, IBV requires routine testing and surveillance for effective control, due to the existence of numerous serotypes and genotypes.
This diagnostic kit detects IBV antigens quickly and easily in 10 minutes after sample application.

Introduction

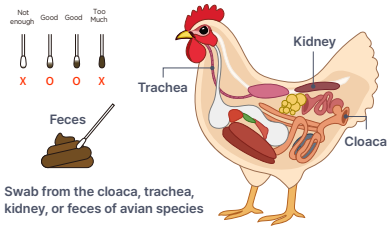
+ **Intended use** : Detection of Infectious bronchitis virus (IBV) antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Cloaca, trachea, kidney, or feces, and tissue homogenates
+ **Species** : Avian
+ **Component**
  - IBV Ag Rapid device
  - Sample dilution buffer
  - Swabs
  - Dropper Cap

Features

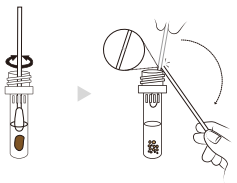
+ Clinical Sensitivity : 87.5% (14/16) compared to qRT-PCR on an individual sample basis.
+ Clinical Specificity : 100% (16/16) compared to qRT-PCR
+ Limit of Detection (LoD): 5 x $10^{4.8}$ EID_{50}/mL of embryonated egg-grown IBV
+ Cross-reaction: No cross-reactivity with major avian pathogens, including Avian Influenza Virus (AIV), Infectious Bursal Disease Virus (IBDV), Newcastle Disease Virus (NDV), *Mycoplasma gallisepticum* (MG), and *Mycoplasma synoviae* (MS).

Test procedure

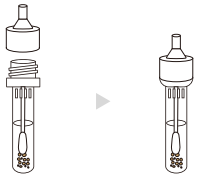
1 Collect the samples using a swab.



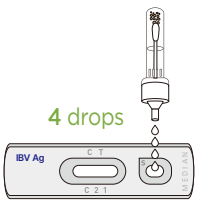
2 Put the sample swab in a tube containing the sample diluent ,mix it 10 times, then cut the groove into the swab and cut off the rod, and let the head of the swab fall into the tube.



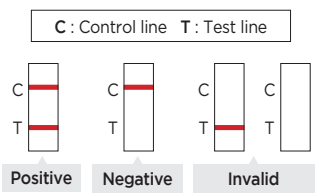
3 Attach the dropper cap to the tube containing the sample dilution solution and the cut swab to close it.



4 Add 4 drops of specimen to the sample hole of IBV Ag Rapid device.



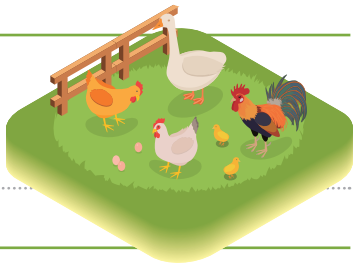
5 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PP-IBV-11	VDRG® IBV Ag Rapid kit	10 Tests/Box

VDRG® NDV Ag Rapid kit



Newcastle Disease Virus

Newcastle Disease Virus (NDV) is a highly contagious paramyxovirus that affects a wide range of avian species, particularly poultry. Clinical symptoms vary depending on the strain and include respiratory distress, neurologic signs, decreased egg production, and mortality. As a WOAH-listed disease, vaccination and rapid diagnosis are essential for effective control and prevention.
This diagnostic kit detects NDV antigens quickly and easily in 10 minutes after sample application.

Introduction

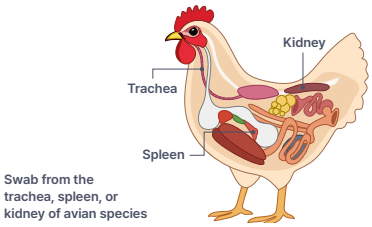
+ **Intended use** : Detection of newcastle disease virus (NDV) antigen
+ **Principle** : Immunochromatographic assay
+ **Specimen** : Trachea, spleen, or kidney, and tissue homogenates
+ **Species** : Avian
+ **Component**
  - NDV Ag Rapid device
  - Sample dilution buffer
  - Swabs
  - Dropper Cap

Features

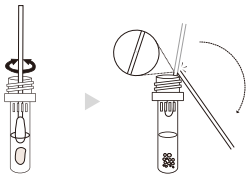
+ Clinical Sensitivity : 88.2% (15/17) compared to qRT-PCR on an individual sample basis.
+ Clinical Specificity : 100% (16/16) compared to qRT-PCR
+ Limit of Detection (LoD): 1 x $10^{4.3}$ EID_{50}/mL of embryonated egg-grown NDV
+ Cross-reaction: No cross-reactivity with major avian pathogens, including Avian Influenza Virus (AIV), Infectious Bronchitis Virus (IBV), Infectious Bursal Disease Virus (IBDV), *Mycoplasma gallisepticum* (MG), and *Mycoplasma synoviae* (MS).

Test procedure

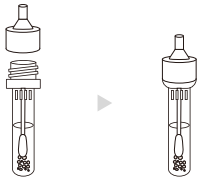
1 Collect the samples using a swab.



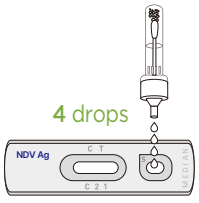
2 Put the sample swab in a tube containing the sample diluent ,mix it 10 times, then cut the groove into the swab and cut off the rod, and let the head of the swab fall into the tube.



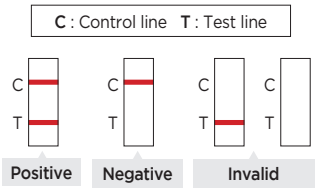
3 Attach the dropper cap to the tube containing the sample dilution solution and the cut swab to close it.



4 Add 4 drops of specimen to the sample hole of NDV Ag Rapid device.



5 Read test results at **10 minutes.**



Order Information

Cat No.	Product Name	Quantity
PP-NDV-11	VDRG® NDV Ag Rapid kit	10 Tests/Box

"For One Health"

MEDIAN Diagnostics

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