Corona Virus Ag Rapid Test

Cat. No.:DTS176
Pkg.Size:6T / 24T

Intended use

This One- Step Test is intended to use as practical/routine screening test that can be done in a few minutes. This test kit is designed to detect Bovine Corona virus antigen by use of a Rapid Immunochromatic Assay.

General Description

Bovine Coronavirus BCV was first associated with diarrhoea in newborn calves and later with winter dysentery in adult cattle. It is now considered an important pathogen causing enteric disease, often in combination with respiratory clinical signs. Fatal respiratory disease caused by BCV has been reported in young stock. BCV infections often result in high morbidity but usually in low mortality. The same virus strain can cause disease in both calves and adults, and the animal often sheds virus in both nasal secretions and feces.
The typical syndrome in calves from a few days to a few weeks of age is usually associated with infections such as rotavirus (34%), Coronavirus (23%) and cryptosporidium (18%).
Bovine Coronavirus is a group 2 member of the genus Coronavirus in the family Coronaviridae.
The BCV virion is enveloped and spherical in shape. The genome is a single-stranded, positive-sense RNA molecule of 27 to 32 kb.
Infected animals exceed enormous number of viral particles, and therefore contaminating the environment. Together with the Rota Clinic One Step Test the veterinarian is now able to detect the cause of diarrhea in about 60% of all cases.
This rapid, sensitive and easy to perform diagnostic test will enable hygienic, therapeutic and proplylactio measures to be put in place to protect the other calves in the herd in order to keep the number of infected animals as low as possible.

Principle Of The Test

The Bovine Corona Virus Ag One-Step Test is based on a chromatographic principle in which a monoclonal antibody with reacts with epitopes of the Coronavirus. A monoclonal antibody is conjugated to colloidal gold particles and a monoclonal antibody is immobilized on the test strip in the test zone “T”. Bovine Coronavirus in the faeces sample that is applied to the test strip at the sample zone “S”, will bind to the colloidal gold particles which then migrate to zone ”T”. A colour change in zone “T” indicates a positive test. Colloidal gold particles are also immobilized on the test strip in the control zone “C”, to indicate that the test is working properly.

Reagents And Materials Provided

1. 6 / 24 x pouches, each containing 1 test strip, 1 pipette and 1 cotton swab
2. 6 / 24 x vials containing 600 µl buffer
3. 1 x protocol

Specimen Collection And Preparation

The One-Step should be stored at room temperature (+/- 21 ˚C).
An unopened package can be used until the expiry date.
An opened package must be used immediately.
If the conditions are no longer fulfilled the test can no longer be used. Avoid freezing and heating as this will contribute to destruction of the test.

45-16 Ramsey Road Shirley, NY 11967, USA
Tel: 631-624-4882 ·Fax:631-614-7828
E-mail: info@creative-diagnostics.com
www.creative-diagnostics.com

Samples may be used fresh or may be kept frozen below -20˚C before use.
It is advised to test feces or rectal swab samples, tissue culture samples can also be tested.
It is advised to test samples as concentrated as possible (see Test protocol).

Assay Procedure

1. Unpack the test strip, swab and pipette. Only open the amount of pouches to be used. An opened package should be used immediately.
2. Take a small sample of faeces or a rectal swab using the included swab.
3. Vigorously wash the swab in the buffer vial.
4. Let particles, if present, sink to the bottom. If necessary centrifuge the sample.
5. Add 4 drops of the supernatant, with the included pipette, of the sample solution to the sample zone “S”.
6. Read the results after 5 - 20 minutes (* see Validation of the test and Interpretation of test results).

Validation of The Test

To validate this One-Step a control line should always be visible at control zone “C”.
If no control line is visible the test should be considered invalid.
* Results should be read in the given time. Results read after the given time should be considered invalid. Invalid tests should be repeated with a new test.

Interpretation of Results

Positive:
Two bands are visible, zone “T” and zone “C” (fig. A). The sample contains Bovine Corona virus antigen.
Positive results may vary in optical density due to variations in viral concentrations in the sample.
Weak Positive:
Two bands are visible; a weak band in zone “T” and a band in zone “C” (fig. B). The sample contains low concentrations Bovine Corona virus antigen.
Positive results may vary in optical density due to variations in antibody concentrations in the sample.
Negative:
Only one band is visible in zone “C” (fig. C). The sample does not contain Bovine Corona virus antigen.
Not valid:
No band is visible in zone “C” (fig. D). Repeat the test procedure.
Important
A positive result should be confirmed by PCR or virus isolation. Diseased, but negative tested patients should be retested within 2-3 weeks.

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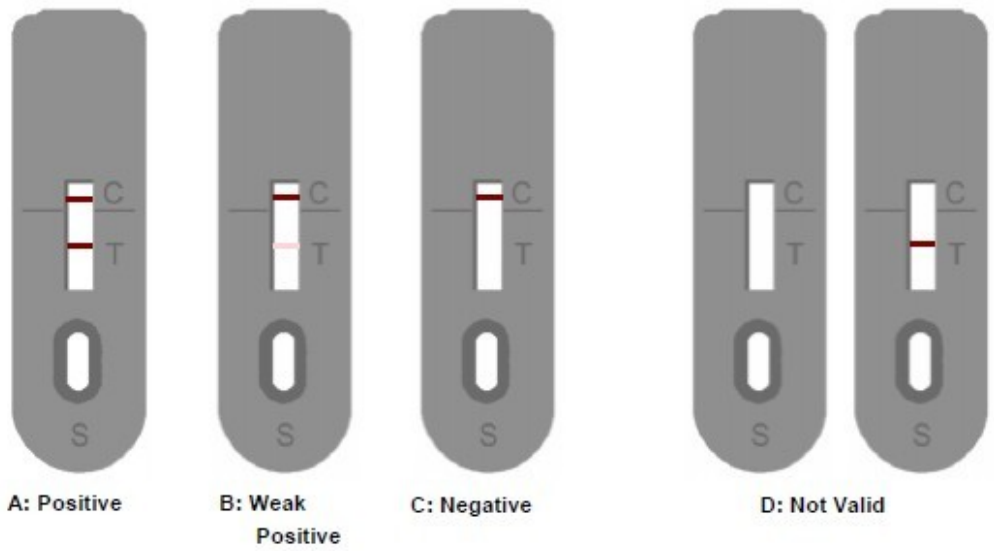

Precautions

1. Handle all biological materials as though capable of transmitting infectious diseases.
2. Do not pipette by mouth.
3. Do not eat, drink, smoke, prepare foods or apply cosmetics within the designated work area.
4. Do not use components which passed the expiry date and do not mix components from different serial lots together.
5. Optimal results will be obtained by strict adherence to this protocol. Careful pipetting and sampling throughout this procedure are necessary to maintain precision and accuracy.
6. Each test strip is ultimately used as an optical reference. Therefore, do not touch the surface of the test strip and protect it from damage and dirt.

REFERENCES

1. de Groot RJ, Baker SC, Baric R, Enjuanes L, Gorbalenya AE, Holmes KV, Perlman S, Poon L, Rottier PJM, Talbot PJ, Woo PCY, Ziebuhr J (2011). "Family Coronaviridae". In: Ninth Report of the International Committee on Taxonomy of Viruses. AMQ King, E Lefkowitz, MJ Adams, and EB Carstens (Eds), Elsevier, Oxford, pp. 806-828.
2. Li F, Li W, Farzan M, Harrison SC (September 2005). "Structure of SARS coronavirus spike receptor-binding domain complexed with receptor". Science 309 (5742): 1864–8.
3. Enjuanes (2008). "Coronavirus Replication and Interaction with Host". Animal Viruses: Molecular Biology. Caister Academic Press.

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