

KRUUSE BoDia Quick Test

The on-site rapid test for detection of Rotavirus, Coronavirus, E. coli K99 and Cryptosporidium parvum in cattle.

Instruction Manual

KRUUSE BoDia Quick is used for detection of specific antigens of Rotavirus, Coronavirus, E. coli K99 and Cryptosporidium parvum in cattle.

Calf Diarrhea

Calf diarrhea poses a major health problem in herds, and is therefore a significant economic risk in cattle breeding. The causes of diarrhea are multiple. Infectious and non-infectious factors can trigger the onset of calf diarrhea. Non-infectious factors that may trigger diarrhea include, among others, hygienic conditions, the vitality of the calf's immune system and the physical condition of the calf.

Infectious factors include viruses, bacteria, single-cell parasites and other causative organisms. Some of the most common causative organisms are:

- Rotavirus
- Coronavirus
- Escherichia Coli K99
- Cryptosporidium parvum

These organisms, among other things, alter the structure of epithelial cells in the gastrointestinal tract, which interfere with normal digestion and absorption of nutrients and cause diarrhea.

A calf with diarrhea excretes an increased volume of faeces with elevated content of water, causing disequilibrium in fluid balance. When a calf suffers from diarrhea, immediate treatment is required. It is imperative that the cause of the illness quickly and accurately is identified.

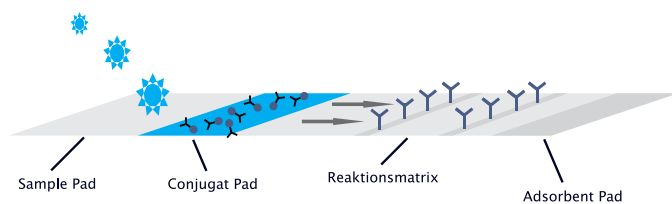
Test Principle

KRUUSE BoDia Quick is a sandwich immunoassay. Gold-labelled antibodies, antigens from the specimen and immobilized antibodies form a sandwich construction which shows as the test line on the test strip.

KRUUSE BoDia Quick is a highly sensitive immunoassay in a convenient test cassette, wherein test strips for the parallel detection of four parameters are included.

Explanation of the Testing Process

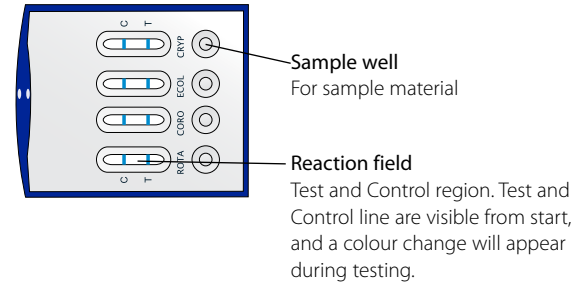
The test strips consist of different components.



When a specimen is put into the sample well, it will be absorbed by the absorbing pad of the test strip. The fluid mixes with the gold-labelled antibodies of the conjugate pad. Due to capillary action the fluid starts to run up the test strip, crossing the test line region and afterwards the control line region. The control line should always appear to show correct functioning of the test. If the specimen contains the pathogen the respective test strip is testing for, a line will show in the test line region. The test line is formed by building a sandwich between the gold-labelled antibodies from the conjugate pad, the antigen from the specimen and the immobilized antibody in the test line region. If no pathogen is present in the specimen, the gold-labelled antibodies cannot connect to the immobilized antibodies in the test line region and therefore no test line appears. Then the test result is negative.

The Test Cassette

The test strips are located behind the plastic cover. The sample well is on the right side. The reaction field is located in the middle of the test cassette. The "C" and "T" next to the reaction field show the test region and the control region.



CAUTION

- Only for veterinary and professional use
- For single use only
- Use the test cassette within 10 minutes of opening the pouch
- Do not apply sample solution in the reaction well
- Use a new sample tube for each sample to avoid cross reactions
- Do not touch the reaction field
- Use only the original buffer provided in the kit
- Sample material could be infectious. Be careful with waste disposal
- Do not use the test after the expiry date printed on the test pouch
- Do not use the test if the packaging is damaged
- Consider the test results as invalid after the specified read-out time

Reagents, Materials, Instruments

I. Contents

- 5 multi-test cassettes with drying pads
- 5 pipettes
- 5 test tubes with 1,5 ml dilution buffer
- 1 instruction manual

II. Additional necessary equipment

- Timer

Useful Tips

Collection of samples should be performed using either the pipette or the sample stick, depending on the consistency of the faeces. In case of nearly liquid, very watery faeces, use the pipette. If the faeces are slightly grainy or include larger particles, use the stick for sample taking.

Sample Preparation

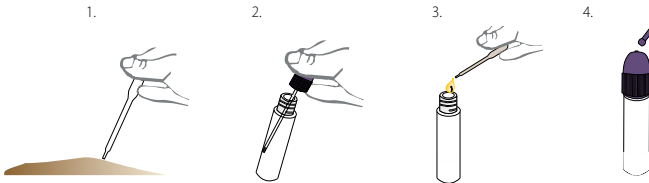
The sample should be tested as quickly as possible after collection, to obtain the best result. If this is not possible, the specimen can be stored at temperatures between 2°C and 8°C for a period of up to 24 hours. If it is necessary for the specimen to be stored longer, it must be kept at a temperature below -20°C. Make sure that the sample is not contaminated with formaldehyde solutions or derivatives. If specimens are to be shipped, they should be packed in compliance with local transportation regulations for etiologic agents.

Sampling

All materials used to perform the test should have room temperature.

Liquid faeces

1. Use the pipette to pick up the liquid material
2. Open the purple lid of the sample test tube and remove the sampler
3. Apply 3 drops of the faecal sample to the test tube. If the faecal sample is very watery, add up to add up to 3 drops more into the tube (up to 6 drops total can be added)
4. Return the pin to the tube and close it tightly, then shake the tube well. The clear liquid should change to a slightly brown/yellow colour
5. The test result should be read 10 minutes after the fluids have reached the control line.



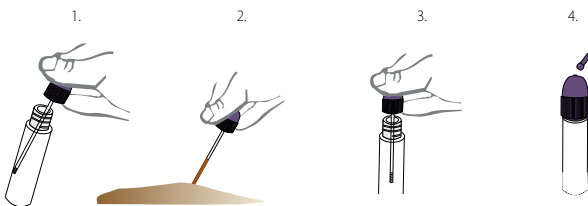
Remarks

When using a sample from the pipette, first add 3 drops faecal sample into the sample tube and shake it gently. If the liquid in the tube is slightly brown or yellow, no more drops of the sample are necessary. If the colour of the buffer still appears clear with no significant colour change, please add additional drops of the specimen until the colour of the buffer changes.

Grainy faeces

If the faeces are quite grainy or contain larger particles, use the stick for sample taking. The stick can also be used for taking a faecal sample from the anus.

1. Open the purple lid of the sample test tube and remove the sampler
2. Take the sample stick and stab the pin into three different places of the specimen. A large amount of faeces is not necessary; if the liquid in the tube is slightly brown or yellow, no more faecal material is needed
3. Return the pin to the tube and close it tightly, then shake the tube well. The clear liquid should change to a slightly brown/yellow colour
4. Break off the pin of the test tube
5. The test result should be read 10 minutes after the fluids have reached the control line.



Test Procedure

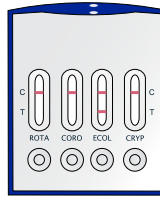
1. Take a test cassette out of the protective pouch
2. Shake the tube once more
3. Break off the pin of the test tube
4. Apply 3 to 4 drops of the specimen to each of the sample wells by slightly squeezing the test tube

Remarks

No big particles should come into the sample wells. In this case the liquid can stop running. Please use the pipette for removing the particles from the sample well and poke the sample well with the tip of the pipette in order to activate the run. Also, an additional drop of the sample fluid into the respective sample well supports further run on the test strip.

Test Evaluation

The test result should be read 10 minutes after the fluids have reached the control line.



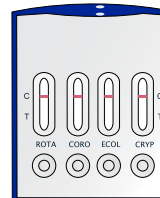
Positive Results

Two red lines appear in the reaction field
The image shows a positive test result for E. coli K99 with a clear test line.

Rotavirus, Coronaviruses and Cryptosporidia were not detected in the image shown.

Remarks

If there is a high level of antigens in the sample material, it is possible that the test line appears very strong with only a very faint control line. This result is valid; the test shows a positive test result.



Negative Results

Only the control lines appear on the membranes.
No test lines are visible.

In this picture all parameters show clear negative test results. No Rotaviruses, Coronaviruses, E. coli K99 bacteria or Cryptosporidia were detected.

Invalid Result

If no control line is visible after the test was performed, the test is invalid. In this case, the test might not have been carried out correctly, the test may have passed the expiry date or the test was exposed too long to ambient air outside the sealed pouch.

Storage

KRUUSE BoDia Quick must be stored at 4°C to 30°C.

Disposal

- No special disposal necessary

Test Performance Characteristics

Sensitivity and Specificity

	Sensitivity	Specificity
Rotavirus	96%	99%
Coronavirus	91%	97%
E. coli K99	92%	96%
Cryptosporidium	92%	99%

Symbols Used

	For single use only		Read user instruction carefully
	Content		Storage temperature
	Lot number		Expiry date