KRUUSE Parvo Quick Test

Rapid test for detection of specific antigens of Parvovirus (CPV, FPV as well as MEV) in faeces from dogs, cats and minks.

New validation studies for the KRUUSE Parvo Quick test show a significant relation between CPV, FPV and MEV.

Instruction Manual

KRUUSE Parvo Quick is used for the detection of specific antigens of Parvovirus (CPV, FPV as well as MEV) in faeces from dogs, cats and minks.

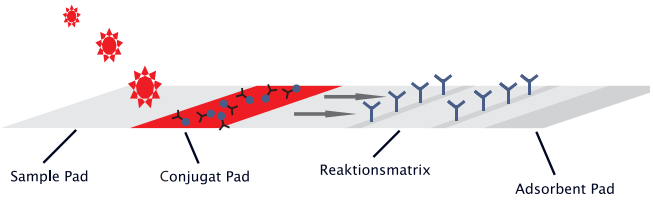
Coronavirus and Parvovirus

Canine Parvovirus type 2 (CPV-2) is one of the causative agents of gastroenteritis. Canine Coronavirus (CCV) is the second leading viral cause of diarrhoea in puppies with canine Parvovirus being number one. Cats can also be infected with canine parvovirus. According to current German estimates, about 10% of the clinically ill cats are infected by CPV-2a or CPV-2b. These cats have a potential risk of infecting dogs. Parvovirus is the smallest non-enveloped DNA virus, it is highly contagious and spread worldwide. This poses a high, sometimes deadly risk, especially for unvaccinated dogs. Feline parvovirus is closely related to canine parvovirus and a causative pathogen of feline panleukopenia (also known as feline distemper). This highly contagious disease is also spread worldwide, but occurs mainly in cats. Canine parvovirus (CPV) first appeared in the mid-70's as a mutated variant of feline parvovirus (FPV). 99% of the DNA structures of the two viruses are identical, differing in only a few nucleic acid sequences in the viral capsid protein.

It is estimated that almost half of all virus associated diarrheas are caused by Parvovirus. If an infection is present, immediate treatment is required. Therefore, it is imperative that the cause of the illness is quickly and accurately identified.

Test Principle

KRUUSE Parvo Quick is a lateral-flow sandwich immunoassay. It functions by forming a sandwich between gold labelled antibodies and antigens of the sample and immobilized antibodies in the test zone to detect pathogenes. KRUUSE Parvo Quick simultaneously detects CPV, FPV and MEV. with one strip. Due to their nearly identical surface structure, KRUUSE Parvo Quick is capable of detecting CPV, FPV and MEV with the same antigen-based reactions.

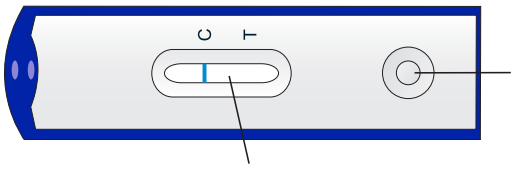


Explanation of the Testing Process

The test strip consists of different components. When a specimen is placed in the sample well, it will be absorbed by the absorbent 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 move 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 l ine forms 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 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 strip is located behind the plastic cover. The sample well is on the right side. The reaction well is located in the middle of the test cassette. The "C" and "T" next to the reaction well show the test region and the control region.



Sample well
for sample material

Reaction field
Test and Control region.
The blue colored control line are visible before starting the test and are only used for quality control.

CAUTION

- Only for veterinary and professional use
- For single use only
- Use the test cassette within 10 minutes of opening the pouch
- Please use the appropriate amount of sample material
- Do not place 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
- Faeces could be infectious. Be careful with waste disposal
- Do not use the test after the expiry date printed on the pouch
- Do not use the test if the packaging is damaged
- Consider the test results invalid after the indicated testing time

Reagents, Materials, Instruments

I. Contents

- 5 test cassettes with drying pad
- 5 cotton swabs
- 5 test tubes with 1 ml dilution buffer
- 1 instruction manual

II. Additional necessary equipment

- Timer

Sample Preparation

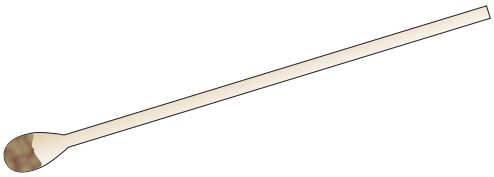
The sample should be tested as quickly as possible after collection. If this is not possible, the specimen can be stored at temperatures between 2°C and 8°C for a period of up to 24 hours. If it is necessary for the specimen to be stored longer, it must be kept at a temperature below -20°C.

Ensure that the sample is not contaminated with formaldehyde solutions or derivatives.

ATTENTION: Samples and other materials should be handled as infectious materials. Use care when handling.

Sampling

Because of the convenient sample tube, hygienic on-site sampling is very easy to perform. Use the cotton swab to get a significant amount of faeces. It is sufficient when the tip of the swab is covered with feces.



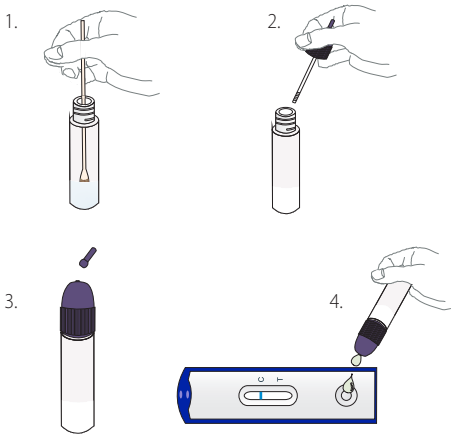
Remark: It must be ensured, that not too much faecal material is picked up. Too much faeces can influence the test negatively and large particles can completely interrupt the test.

After the sampling continue with the test procedure.

Test Procedure

All material used to perform the test should have room temperature

1. Open the test tube containing the dilution buffer. Place the tip of the swab with the faecal sample into the test tube containing the dilution buffer. Stir up the fluid with the swab. The fluid colour should change into slight yellow/brown.
2. Tightly close the test tube with the buffer. The dilution buffer in the tube will treat and conserve the sample. Shake the test tube well for a few seconds.
3. Take the test tube and break off the pin.
4. Invert the test tube and place 3 drops in the sample well.
5. The test result should be read 10 minutes after the fluids have reached the control line.



If the liquid is not running well up the strip after 45 seconds, add an additional drop of buffer material into the sample well, and poke sample well with the end of the cotton swab.

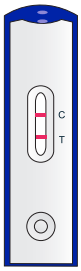
References

1. Masato Nakamura et al:"Monoclonal Antibodies That Distinguish Antigenic Variants of Canine Parvovirus", Clinical and Diagnostic Laboratory Immunology, p. 1085-1089, Vol. 10, No. 6, November 2003

2. Ishiwata K, Minagawa T, Kajimoto T: "Clinical effects of the recombinant feline interferon-omega on experimental parvovirus infection in beagle dogs." in:J Vet Med Sci. 1998 Aug;60(8):911-7.

Test Evaluation

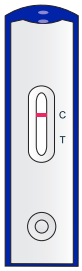
Read the result after 10 minutes after applying the sample fluid.



Positive Result

The test is positive when the control line (C) and the test line (T) are visible in the reaction field. Parvovirus was detected.

Even when a weakly defined line is visible, the test result is positive. The red colour in the test region can vary depending on the concentration of pathogens present in the sample.



Negative Result

The test is negative when only the control line is visible. No defined test line is visible. The image selected here shows a clear negative test result. No Parvovirus was detected.

REMARK: Shedding of the CPV is typically highest day 4 to 7 after an infection, which usually correlates with the onset of clinical signs. Virus shedding decreases approximately after day 8. Therefore it is important to collect faeces for viral detection at the onset of clinical signs, and if the test result is negative for Parvovirus, repeat the test after 1–2 days.

Invalid Result

If no control line is visible after the test is conducted, the test is invalid. In this case, the test may not have been correctly carried out or the test may have passed the expiry date. If this occurs, a new test must be conducted.

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

Storage

KRUUSE Parvo Quick must be stored at 2°C to 30°C.

Disposal

A safe disposal is recommended. Sample material and test cassettes should be collected in a sealable plastic bag.

Test Performance Characteristics

Sensitivity and Specificity

KRUUSE Parvo Quick	Enzyme-linked Immunosorbent Assay	
	Sensitivity	Specificity
Parvovirus	92,31 %	95,65 %

International test study 10-2010

Symbols Used

	Only for one use		Read user instruction carefully
	Content	+4°C +30°C	Storage temperature
LOT	Lot number		Expiry date