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Feline Coronavirus (FCoV) RT-PCR

Feline Coronavirus (FCoV) is a common viral infection in cats. It generally causes asymptomatic infection, but can cause mild diarrhea. As yet poorly understood changes in the virus can give rise to mutants that lead to the development of feline infectious peritonitis (FIP). Most cats infected with a FCoV eliminate virus following infection, but some cats may develop a persistent infection. These cats are generally asymptomatic, can shed large amounts of virus in feces, and serve as a continual source of infection for other cats in the environment. Continual circulation of FCoV within a cat population may increase the chance that a virulent FIP strain might emerge. While the pathogenesis of FIP is poorly understood, it is now believed that detection and removal of persistently infected and shedding cats in a multicat household can reduce the risk of FIP emergence within that population.

In response to the increased interest within the cat breeding and cat owning community, the Animal Health Diagnostic Center at Cornell University now offers a fecal RT-PCR test for FCoV. This test can be used to identify asymptomatic FCoV shedding cats so steps can be taken to isolate them from other cats or to prevent their introduction to a resident population. Samples required for the fecal RT-PCR screening test are 2-5 grams fresh feces. When screening an individual cat in a multicat household it is important to positively identify the source of the fecal sample. Mixing of fecal samples from multiple cats may result in an inaccurate result. Feces should be stored in a clean plastic bag to prevent dehydration.

In clinical FIP suspect cats, the test can also identify FCoV in ascites fluid, whole blood, plasma, serum or fresh tissues (kidney, liver, or spleen). Samples from FIP-suspects should include 1-2 ml of fluid (ascites, whole blood, serum, or plasma) or 1-2 grams of fresh tissues.

All samples should be shipped in a leak-proof container to the laboratory by overnight courier on ice packs for optimal test outcomes.

Fecal FCoV RT-PCR tests should be interpreted cautiously. Single positive or negative tests are meaningless as cats may shed intermittently or may be recently infected. To be identified as a chronic shedding carrier, a cat should be fecal virus positive on multiple tests over an 8-month period. A cat that tests negative on monthly tests over a 5-month period of time may be considered a non-shedder. (Addie D.D., Jarrett O. 2001 Use of a reverse-transcriptase polymerase chain reaction for monitoring the shedding of feline coronavirus by healthy cats. Veterinary Record. Vol 148. pp. 649-653.)

In a cat with clinical signs consistent with FIP, FCoV RT-PCR positive results on fluids or tissues may indicate active FIP. FCoV RT-PCR positive results in tissues from a clinically normal cat are only indicative of infection with FCoV.