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FCoV (Feline Enteric Coronavirus)

Cornell's Feline Enteric Coronavirus (FCoV) test is a kinetics ELISA (KELA) assay that detects antibodies to coronavirus in serum, plasma, thoracic or peritoneal exudates of cats, but can not differentiate between antibodies of virulent and avirulent strains. We are unaware of any test that has that capability.

This test is run at a standard dilution on multiple wells on antigen and control antigen (to detect non-specific activity.) Five standards are run with every assay, and a standard curve is established. The sample titers are fit to the standard curve, thus reducing variability between different runs of the assay.

Titers with a value greater than 1:8 are considered coronavirus antibody positive. Positive titers are reported at values from 9 to >2000. In one study we found that cats with clinical signs of FIP or histopath confirmed FIP had a range of KELA titers from a low of 1:30 to greater than 1:2000. Titer level is a poor prognosticator of disease. However, with clinical signs consistent with FIP any positive titer from our laboratory may be significant. The majority of FIP confirmed cats have titers greater than 1:100 on our assays. Conversely, we have had many healthy cats that have maintained high titers for years.

A negative from our lab is significant, as no antibody to coronavirus has been detected. Over 200 diagnostic samples negative on our FIP assay were run on the competitive ELISA. They showed no competition, confirming them as coronavirus antibody negative samples.

Over the years we have looked at cats infected with many different coronaviruses, including cats vaccinated with canine corona vaccines, and cats vaccinated with the Primucell FIP vaccines. Our assay detected coronavirus antibody in each case.

- There is no FIP Specific antibody assay that can predict that a cat has or will develop FIP.
- There is no single FIP producing coronavirus.
- You can not compare titers between different labs.
- Any coronavirus infecting a cat has the potential to become virulent.
- Coronavirus titer level does NOT correlate with the probability of having or developing FIP.
- A rising titer in a healthy cat does not correlate with the probability of the cat developing FIP.
- Titer level does not correlate with the probability of a cat shedding virus.
- In one study, every coronavirus positive cat shed virus in the feces occasionally.
- The Cornell FCoV k-ELISA assay does tell you if a cat is coronavirus antibody positive or negative.
- Most cats with titers greater than 1:100 on our assay remain coronavirus antibody positive.
- One FIP loss in a multicat household or cattery does not mean that other cats will break with disease.
- PCR (polymerase chain reaction) tests have the same limitations as most serology assays. They may be too specific, thus missing some positive cats. The AHDC at Cornell is now offering a feline coronavirus PCR for use on abdominal and pleural effusions in a clinically ill cat.
- Quantitative PCRs which look for the amount of virus in feces can tell which cats are shedding at the time of testing, but do not predict which cat sheds continuously. Breeders will need to understand that multiple fecal PCRs will be necessary to determine which cat sheds constantly. PCR on a fecal pellet is a snapshot of the status of the cat at the time the sample was collected.