Feline Coronavirus (FCoV) Testing

This document was created for information purposes ONLY and it is NOT meant to replace a consultation with a fully qualified veterinary surgeon (veterinarian). It is NOT intended to be used to diagnose or treat any cat. EndFIP® shares this information for educational purposes **exclusively**. Furthermore, creators and contributors strongly advise all readers to always seek the advice of a qualified veterinarian and to obtain professional advice on the correct regimen for your cat and his/her particular situation. **NO responsibility can be accepted.**

Please note that we are referring to FCoV testing and not FIP testing. Unfortunately, there is currently NO definitive test to diagnose Feline Infectious Peritonitis (FIP). In many instances, FIP diagnosis can be elusive and may depend on the logical exclusion of other possibilities.

FCoV antibody testing

Many veterinary laboratories provide qualitative and quantitative testing for feline coronavirus (FCoV) antibodies in serum. In some countries, in-clinic (ELISA and/or Rapid Immunomigration/lateral flow) tests are also available and can be performed on serum or plasma.

*** It is EXTREMELY important to note that a positive FCoV antibody test does **NOT** equate to a diagnosis of FIP!!! The presence of these titers only indicates whether a cat has been exposed to the near-ubiquitous FCoV.

A negative FCoV antibody test can quickly and inexpensively rule out a diagnosis of FIP but **ONLY** if the test is sensitive enough. Within the context of laboratory testing – Sensitivity is the ability of the test to detect small quantities of an antibody or antigen.

If the FCoV titer is negative at <1:25 dilution, it is very likely that the cat is negative and does not have FIP. Sadly, very few laboratories test down to such low dilution, and a negative titer at higher dilution (most commonly used in the field is 1:400) is not meaningful.

When considering veterinary laboratories or in-clinic test, it is important to be aware of not only the sensitivity of the test but also the specificity which is the ability of a test to detect the antibody or antigen accurately.

FCoV PCR testing

A polymerase chain reaction (PCR) test for identification of feline coronavirus messenger RNA (mRNA) is offered worldwide through several commercial laboratories. FCoV RT-PCR can be used to detect viral genetic material in tissue, feces or body fluids.

FCoV RT-PCR testing are commonly recommended to help reach a FIP diagnosis.

This test it is also widely used to determine the shedding status of FCoV infected cats. When submitting fecal samples for testing, please make sure that they do not have any cat litter on them as it could inhibit the PCR test leading to a false negative result. It is also important to use a laboratory that reports virus quantity and controls for fecal PCR inhibitors (any factor which prevent the amplification of nucleic acids through the PCR).

Immunocytochemistry and Immunohistochemistry

Samples of effusion or affected tissues may be tested for the presence of viral antigens using anti-FCoV antibodies. Meaning, polyclonal or monoclonal antibodies with high specificity for the feline coronavirus are mixed with the sample and allowed to attach to infected macrophages. The antibodies are subsequently detected using a marker agent, either fluorescein (effusion or fresh tissue) or horseradish peroxidase (formalin-fixed tissue).

These tests are generally regarded as the diagnostic gold standard, and a positive result is definitive confirmation of FIP. That being said, false negative results may occur when low cellularity effusions are tested or if unaffected organs are biopsied.

Although immunochemistry is considered the gold standard for FIP diagnosis, and is certainly what to do for a cat post mortem, it requires an invasive intervention in the sick cat thus other tests should be considered first.

On a closing note, the information shared above is only a brief summary of some diagnostic tests that can help aid in the diagnosis of Feline Infectious Peritonitis. It is important to note that to date, there is NO way to screen healthy cats for risk of developing FIP. Sadly, and estimated 5% - 10% of FCoV infected cats at one point in their lives will develop FIP.

EndFIP® has a vision: every cat a healthy cat. EndFIP® is committed to impart worldwide awareness and understanding of feline coronavirus and we will continue to encourage people to respect the seriousness of FCoV infection and inspire them to create lasting solutions to prevent feline coronavirus (FCoV) infection in multi-cat environments.

"There is nothing so patient, in this world or any other, as a virus searching for a host." – *Mira Grant*