

## **Winn Feline Foundation Progress Report**

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*Screening for Antibodies to the 7b Protein of Feline Coronavirus in Cats for Diagnosis of Feline Infectious Peritonitis*

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Funded 2002

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Feline infectious peritonitis (FIP) is a fatal disease of cats that occurs in two forms, an effusive or “wet” form and a non-effusive or “dry” form. FIP is caused by feline coronavirus, a common feline virus. It is known that mutations in the normally fairly benign and common feline coronavirus (FCoV) can produce FIP virus (FIPV), capable of causing disease. It is estimated that this mutation leading to FIP occurs in 5-10% of cats infected with FCoV. Unfortunately, FCoV and FIPV are so closely genetically related that antibody tests are unable to distinguish between the two forms of the virus. Development of a sensitive and specific test for diagnosis of FIP is sorely needed.

Previous research has shown that the 7b gene of feline coronavirus may be involved with the development of FIP. It has been suggested that only virulent FIP viruses will express the protein coded by this gene. Therefore, it could be expected that cats with FIP would have antibodies to the 7b protein, while cats with nonpathogenic FCoV would not. This is the basis for at least one commercially available test.

The researchers developed their own screening test for antibodies to the 7b protein. They then screened a total of 84 blood samples. Seventy-two samples tested positive for the 7b protein, and 12 samples were negative. The health status of the cats represented by the samples is now being investigated. To date, the health status of 29 of the cats is known. Of these, 14 cats had confirmed FIP and these all tested positive for antibodies to the 7b protein. Of four cats with other diseases (such as lymphoma), two tested weakly positive for 7b antibodies. Disappointingly, 11 healthy cats also tested positive for 7b antibodies.

While the test has so far shown that it may be helpful in the diagnosis of FIP (all FIP cases did test positive), it does not seem able to consistently distinguish cats ill with FIP virus from healthy cats exposed to FCoV, since all the healthy cats tested positive for 7b antibodies as well. This is an important finding, for it underscores the fact that no cat should be diagnosed with FIP or euthanized solely on the basis of a positive 7b antibody test.