



**Headline:** New Diagnostic Tool To Reduce Spread of Cat Virus

**Subhead:** In an effort to stop the spread of a deadly virus, a U of G researcher has helped develop a diagnostic test that will change the way the virus is detected across Canada and possibly the globe.

**Body of Story:**

There's a virus among cats that is almost identical to HIV in humans. It's called Feline Immunodeficiency Virus (FIV) and just like HIV, one of the biggest challenges is finding ways to stop it from spreading.

Prof. Dorothee Bienzle has found a way. The U of G pathobiologist has played a key role in developing a test that is highly accurate in diagnosing cats with the virus.

"Having a precise diagnostic tool will enable us to take the steps to ensure infected cats are separated from other cats and unable to spread the virus," said Bienzle.

In a recent study funded by Pet Trust, Bienzle tested the accuracy of using polymerase chain reaction (PCR) in diagnosing FIV in cats. She found the biochemical technology was able to not only detect cats that were positive for the virus but also rule out false positives.

One of the problems with the diagnostic test currently being used is that it relies on detecting virus antibodies in the animal's blood, saliva or urine, said Bienzle. Cats that have been vaccinated for FIV will also have these antibodies so using the test on these cats can result in false positives, she added.

"Cats that are diagnosed with FIV are either euthanized or isolated from other cats so its important the testing for the virus is accurate."

Since the virus is most commonly spread through a bite from an infected animal, stray cats and domestic outdoor cats are most at risk of contracting it.

In North America, about four per cent of cats have the virus. But numbers are as high as 60 per cent in some areas of China and Africa where there are larger populations of stray and outdoor cats.

“It’s a significant concern,” said Bienzle, who has been studying the virus for the past 13 years. “Just like HIV, FIV causes the animal’s immune system to gradually malfunction and in the end it doesn’t function at all. Cats with FIV eventually die from an opportunistic infection or cancer, most often lymphoma.”

Owners can have their pets tested, but cats are often checked for the virus once they end up in an animal shelter. In most cases, the animal is a stray or has been abandoned by its owner so the veterinarian performing the test doesn’t know the cat’s history and whether it has received the vaccination, said Bienzle.

Not only do vaccinated cats carry the antibodies for the virus, but the antibodies can also be passed on from mother to kitten, she added.

The PCR test works by amplifying a stretch of DNA. Unlike the current diagnostic tool, known as the enzyme-linked immunosorbent assay (ELISA) test, the PCR test is able to discriminate between cats with FIV and cats with only the antibodies by detecting pieces of the actual virus. Only infected cats have the live virus.

In a blinded study, Bienzle in collaboration with Dr. Susan Little, an Ottawa feline veterinarian, and Dr. Melanie Ammersbach, a veterinarian and U of G graduate student, conducted the PCR test on blood samples from infected cats, uninfected cats that had not been vaccinated and vaccinated cats without the virus.

“The PCR test performed very well diagnosing 100 per cent of the cats as negative that should be negative,” said Bienzle. “For a confirmation test, that’s the best you can ask for.”

The PCR test can also detect the viral count in a cat’s blood, which indicates how advanced the disease is. This will help in providing effective treatment, she said.

“Patients with a higher viral count will be more at risk of getting cancer or another fatal infection. If we know a cat is at an advanced stage, we can check it more regularly and give it antibiotics at the first sign of a bacterial infection.”

Bienzle is recommending the PCR test be used as a follow-up test for cats that receive a positive result using the ELISA test because the ELISA test can be easily performed in a clinic or shelter whereas the PCR test must be conducted in a specialized lab.

“Up until now we have only had the ELISA test because we didn’t have a PCR test that was proven to be accurate. Now we do. This is going to change the way we diagnose cats across Canada and eventually the rest of the world.”