

## Winn Feline Foundation Progress Report

By Susan Little DVM, Diplomate ABVP (Feline)

### *Genetic Characterization of Feline Caliciviruses Associated with Idiopathic Cystitis*

Investigators: J.M. Kruger and others

Funded 1999, 2000

College of Veterinary Medicine

Michigan State University, East Lansing, MI

Idiopathic cystitis (IC) is a common cause of lower urinary tract disease in cats. It is associated with frequent and painful urinations, blood in the urine, and housesoiling with urine. The cause of IC is unknown. However, calicivirus has been found in material that forms plugs in the urethra of some patients.

Dr. John Kruger and his colleagues at Michigan State University have isolated two feline caliciviruses, FCV-U1 and FCV-U2, from the urine of 2 cats with IC. Their research goal was to determine if these two calicivirus strains were potentially unique urinary pathogens or simply innocuous vaccine virus or wild-type virus shed in the urine of these cats.

Certain calicivirus proteins, called capsid proteins, are unique for each calicivirus strain. Dr. Kruger's team was able to clone and sequence the capsid protein gene for FCV-U1 and FCV-U2. They then compared the genetic sequences of these two new viruses with those of a common vaccine strain (F9) and several wild-type strains known to cause disease. They were able to determine that both FCV-U1 and FCV-U2 are distinct from known vaccine and wild-type calicivirus strains.

Now that the identify of these two calicivirus strains from cats with IC has been established as distinct from other calicivirus strains, further studies will be needed to determine if they play a key role in IC or whether they are not associated with disease at all. This research has provided an intriguing avenue for future research into the elusive causes of IC. Since IC is a very common feline disease, future findings based on this research may help a great many cats.

For further reading:

Kruger, J., C. Osborne, et al. (1996). *Viral infections of the feline urinary tract*. *Veterinary Clinics North America* **26**(2): 281.

Kruger, J., K. Maas, et al. (2001). *Genetic characterization of a feline calicivirus isolated from urine obtained from a cat with obstructive idiopathic lower urinary tract disease* (abstract 180). *Proceedings 19th American College Veterinary Internal Medicine Forum*, Denver, CO.