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For the Health and Well-being of All Cats

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DIAGNOSIS AND TREATMENT OF FELINE TRITRICHOMONAS FOETUS

PROJECT STUDY: Diagnosis and treatment of feline *Tritrichomonas foetus* (T. foetus) through target surface antigens

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Tritrichomonas foetus (Tf) is an intestinal parasite now recognized as a primary cause of chronic diarrhea in domestic cats worldwide, with prevalence rates as high as 30% especially in high-density housing environments. Only one treatment is currently available for treatment of feline Tf, which is associated with risk of side effects and drug resistance.

No preventative strategies (e.g. vaccination) are available, thus the best prevention recommendation at this time is to rapidly identify and quarantine infected cats. Thus, early identification and quarantine of infected cats from the feline population is important to prevent continued transmission.

The resemblance of feline Tf to other infections challenges veterinarians' ability to diagnose infection rapidly and accurately. Polymerase chain reaction, currently the best available test, is sensitive but may take up to 2 weeks to produce a result, while the faster alternative, in-clinic tests like fecal smear and culture are less sensitive and can result in misdiagnosis.

Tritrichomonas foetus also causes abortions in cattle. These investigators have previously demonstrated that cat and cattle Tf share common strategies for infecting their hosts. Two surface markers (1.15, 1.17) on bovine Tf participate in establishment of infection and induction of clinical signs. They hypothesized that these surface markers are also expressed by feline Tf and therefore may be targets for the development of a novel preventative or diagnostic test. Thus, the aims of this study were to evaluate the expression of 1.15 and 1.17 in feline Tf and to determine if these markers play a role in feline Tf-induced injury of the intestine.

With Winn's support, they optimized three different techniques which were used to evaluate feline Tf for the presence of surface markers 1.15 and 1.17. They successfully identified both surface markers in all feline Tf isolates tested. Excitingly, evidence shows that both surface markers may contribute towards Tf adhesion to the intestinal epithelium and therefore also represent a therapeutic target in addition to a diagnostic target. Regardless, the identification of these markers presents an exciting opportunity for the development of a novel diagnostic test. As they have demonstrated, these particular markers are expressed on the surface of all feline Tf tested, a feature which may allow them to be readily identified in the feces of cats. Their long-term goal is to use the markers to develop a rapid, in-clinic diagnostic test. They believe that this test has the potential to reduce disease transmission by quickly identifying and isolating infected cats. Importantly, this test would facilitate expeditious treatment and improved quality of life.

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