



## RESEARCH PROGRESS REPORT SUMMARY

**Grant 02692-A:** Diagnostic Accuracy of Point of Care Analysis of Canine Urine and Plasma in Marijuana Toxicosis

**Principal Investigator:** Joel Weltman, DVM

**Research Institution:** Caspary Research Institute of the Animal Medical Center

**Grant Amount:** \$14,450

**Start Date:** 2/1/2020      **End Date:** 7/31/2021

**Progress Report:** End-Year 1

**Report Due:** 1/31/2021      **Report Received:** 1/31/2021

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### Original Project Description:

Given the increase in availability of marijuana in the United States, a higher number of presumed marijuana exposures have been reported in veterinary emergency clinics. Since the clinical signs of marijuana ingestion are non-specific and may be observed in several disorders, an accurate canine bedside diagnostic test may alleviate the need for expensive and invasive diagnostic procedures in canine patients. To date, no studies have evaluated the accuracy of urine drug screening tests using non-invasive urine or blood samples in dogs. The purpose of this study is to determine the best method to diagnose marijuana toxicity in dogs in a point of care emergency setting.

### Publications:

Denroche K, Bischoff K, Weltman J. Evaluation of the diagnostic accuracy of point of care THC urine drug screening tests. *Manuscript in preparation.*

**Presentations:** None at this time

### Report to Grant Sponsor from Investigator:

Samples obtained from a total of 56 dogs with either confirmed or suspected exposure to  $\Delta^9$ -tetrahydrocannabinol ( $\Delta^9$ -THC) have been analyzed by both point of care and liquid chromatography/tandem mass spectrometry (LC/MS-MS). Of those enrolled, 55 (98%) were confirmed



positive for  $\Delta 9$ -THC by LC/MS-MS on plasma samples. Of the 56 urine samples tested, 17 tested positive using the Alere drug screen iCassette for THC, and 26 tested positive using the NarcoCheck THC Predosage test. All of the samples that tested positive using the Alere drug screen also had positive detection using the NarcoCheck test. Sensitivity, as calculated based on positive NarcoCheck urine drug screening, was calculated as 47%. The most commonly reported clinical signs in those positive by urine drug screening test included hyperesthesia (100%), ataxia (92%), and depressed level of mentation (80%); however, no physical examination parameter was predictive of a positive urine drug screening test in those positive for  $\Delta 9$ -THC on LC/MS-MS. Work continues for validation of LC/MS-MS for metabolites of  $\Delta 9$ -THC in canine urine samples. Results from this analysis will provide information regarding the accuracy of urine metabolites in establishing exposure to  $\Delta 9$ -THC in dogs.