Molecular urinalysis based on Raman spectroscopy

Purpose

To determine if analyzing the molecular make-up of urine can diagnose cancer, infections, kidney diseases, and urinary tract stones in dogs, and identify these diseases at an earlier, more treatable stage.

Background

Diagnosing kidney disease, cancer, and other dysfunctions in dogs often requires invasive, expensive testing. Sometimes diseases such as urinary tract stones and urinary infections can have similar symptoms, making diagnosis more difficult. Using a method called Raman spectroscopy, we believe it may be possible to identify molecules in the urine of affected animals that serve as markers of disease. We hope that this method may be used to develop a simple, non-invasive urine test to diagnose canine diseases.

Eligibility

- Group 1: Dogs diagnosed with or suspected of having a urinary tract infection
- Group 2: Dogs diagnosed with or suspected of having bladder stones
- Group 3: Dogs diagnosed with or suspected of having azotemic kidney disease
- Group 4: Dogs diagnosed with or suspected of having bladder cancer

Study Design

If you agree to enroll your dog in this study, we will obtain a small urine sample +/- a blood sample (approximately 1 tablespoon of each) from your dog. These samples would typically be collected as part of your dog’s routine diagnosis and care. The method of collecting each sample will be determined by the Veterinary Teaching Hospital veterinarian caring for your dog. These samples will be tested and the results analyzed.

Compensation

There is no cost to you for participating in this study, nor is there any monetary compensation. The benefit to participating in this study is that the knowledge generated may help in the prevention, diagnosis, and treatment of diseases in other dogs and potentially humans.

Contact

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If your query is urgent, please call the Small Animal Hospital (540) 231-4621 and ask for the internal medicine doctor on duty.