

2023 EveryCat Health Foundation Grant Awards

Total Awarded \$316,530

EC23-009 Use of the DNA damage response inhibitor BAY 1895344 as a component of care in feline oral squamous cell carcinoma. PI: Michael Nolan, North Carolina State University; Yvonne Mowery, Duke University. \$32,000

Oral Squamous Cell Carcinoma is an aggressive cancer of cats that is poorly responsive to modern therapies. Radiation therapy may be enhanced by the addition of drugs that inhibit DNA repair. This study investigates the use of a DNA repair inhibitor in cats with oral squamous cell carcinoma undergoing radiation therapy. *(Oncology Fund)*

EC23-012 Preventing severe adverse drug reactions in every cat by assessing the P-glycoprotein substrate status of clinically important drugs. PI: Katrina Mealey, Washington State University. \$21,260

P-glycoprotein protects the brain and other tissues from the harmful effects of certain drugs in dogs, mutations in PGP can lead to toxic effects from "normal" doses of drugs in some breeds. PGP mutations also exist in cats, but it is unclear which drugs are affected. This study aims to determine what drugs may have increased toxicity in cats with PGP mutations. *(Sponsored by Zoetis)*

EC23-019 Effect of inhaled albuterol on whole blood potassium concentrations in healthy cats. PI: Elizabeth O'Toole, Jo-Annie Letendre; Université de Montréal \$7,648

High potassium levels occur commonly in cats with obstructed urinary tracts and are often life threatening. In humans and in dogs, inhaled albuterol can be used to temporarily decrease potassium levels, allowing stabilization until obstruction is relieved. This study aims to determine if this is also effective in cats.

EC23-034 Molecular characterization of feline fibrosarcomas using spatially defined proteomics and transcriptomics. PI: Enni Markkanen, University of Zurich \$35,000

Feline fibrosarcoma is an aggressive and locally invasive cancer that is difficult to fully remove and does not respond well to chemotherapy. This study aims to use analysis of proteins and RNA in tumor samples and compare to them to surrounding healthy tissue to help aid in removing tumors entirely and to define targets for possible chemotherapies. *(Sponsored by Zoetis)*

EC23-041 Development of a Machine Learning Algorithm for Diagnosis of Feline Infectious Peritonitis. Samantha J.M. Evans, The Ohio State University; Krystle L. Reagan, University of California- Davis, \$14,030

Despite recent advances, FIP remains a challenging disease to diagnose, especially in the "dry" form. As such, it is often not even suspected on basic bloodwork analysis. Subtle trends may be present that are suggestive of FIP but may be missed by humans. This study aims to use machine learning to determine if patterns of results are present that may be suggestive of FIP. *(Bria Fund)*

EC23-043 Molecular characteristics and clinical outcomes of uropathogenic *Escherichia coli* in aging cats. PI: Erin Frey, North Carolina State University, \$34,919

Older cats are more prone to develop urinary tract infections. Some strains of *E. coli* are more likely to cause recurrent or difficult to treat infections than others. This study investigates the genetic and molecular findings that make some types of *E. coli* more serious infections than others.

EC23-047 Feline FAANG: what makes a cat – a cat! PI: Leslie A. Lyons, University of Missouri, \$33,738

Domestic cats have one of the most complete genome sequences of any species, however many diseases with known genetic origins do not have their specific genes or mutations identified. This study is a continuation of previous research aimed at finding the genetic basis for many common feline conditions. *(Miller Trust Fund)*

EC23-060 Assessment of phage therapy in cats: a solution for antibiotic-resistant

infections. PI: Ronen Hazan, The Hebrew University, Jerusalem; Alin Barsheshet, Vet-Holim JVMC Veterinary Medical Center, Kiryat Anavim, Israel. \$34,000

Resistant bacterial infections are a common and increasing cause of concern in veterinary medicine. Phage therapy uses viruses to infect and kill bacteria without the need for antibiotics. This study aims to investigate and develop phages to treat resistant infections in cats. *(Sponsored by Zoetis)*

EC23-069 Urinary active transforming growth factor beta 1 in cats with hyperthyroidism before and after radioiodine treatment. PI: Laura Perez Lopez, Sylvie Daminet, Ghent University \$35,000

Radio-iodine therapy is the gold standard for the treatment of hyperthyroidism. However, many cats may have “unmasking” of their kidney disease after therapy. This study aims to investigate the concentrations of Transforming Growth Factor-beta in cat urine to determine if this predicts the risk of kidney disease after I-131. *[Kidney Disease Fund in honor of Vicki Thayer, DVM, DABVP (Feline)]*

EC23-074 Identification of the receptor allowing feline coronavirus type I entry into its natural target cell, the enterocyte. PI: Hans Nauwynck, Ghent University \$34,250

This study investigates how Feline Enteric Coronavirus (the precursor to FIP) enters intestinal cells. Finding this out may allow for the development of vaccines or drugs to prevent or treat infection before it becomes FIP. It will also allow the development of cell cultures that can be infected with coronavirus, allowing easier FIP research. *(Bria Fund)*

EC23-076 Assessing Pharmacokinetics of the Novel Antiseizure Medication Brivaracetam in Healthy Cats. PI: Amanda Gross, Tom Jukier; Auburn University, \$34,685

This study investigates the ideal dose and frequency of administration of a new medication to treat and prevent seizures in cats. This medication may have less adverse effects and easier administration schedules than drugs currently on the market.