WINN FELINE FOUNDATION
For the Health and Well-being of All Cats
390 Amwell Road, Suite 402, Hillsborough, NJ 08844
908-359-1184 o Fax 908-359-7619 o www.winnfelinehealth.org

MEDIA RELEASE

FOR IMMEDIATE RELEASE
January 4, 2011

FOR FURTHER INFORMATION
Janet Wolf, Executive Director
856-447-9787, winnfeline@aol.com

Betty White, President
505-299-4106, angkorrose@comcast.net

Steve Dale, Board Member
773-525-8696, petworld@aol.com

Important Feline Health Studies Awarded by Winn Foundation in Partnership with the Miller Trust.

The Winn Feline Foundation is pleased to announce the award of six grants funded in partnership with the George Sydney and Phyllis Redman Miller Trust in 2010. Winn President Betty White commented, "We are excited about the proposals that have received funding. This year we awarded $103,185 in grants for studies on anesthesia and feline hypertrophic cardiomyopathy, pain management, asthma, liver disease, herpesvirus, and chronic renal failure."

Does treatment of anesthetic-induced hypotension with dopamine or phenylephrine cause myocardial damage in cats with hypertrophic cardiomyopathy? *Bruno H. Pypendop, DrMedVet, DrVetSci, Dipl. ACVA; Ashley J. Wiese, DMV, MS.; Linda S. Barter, MVSc, PhD, Dipl. ACVA; Jan E. Ilkiw, BVSc, PhD, Dipl. ECVA, University of California, Davis*. **$1,134**

Hypertrophic cardiomyopathy (HCM) is the most common cardiac disease of clinical significance in cats. Inhalant anesthetics are generally used for maintenance of anesthesia in cats, including those with HCM. However, these drugs produce vasodilation leading to hypotension and reduced myocardial contractility, leading to decreased cardiac output. While the first line of pharmacological intervention to treat anesthetic-induced hypotension usually relies on the administration of a positive inotrope (i.e., dopamine) in patients with HCM, the use of vasoconstrictors (i.e., phenylephrine) has been advocated, because of the disease's pathophysiology. Use of dopamine as a positive inotrope increases the dynamic obstruction of the ventricular outflow tract and may precipitate myocardial damage by increasing myocardial oxygen consumption. Conversely, vasoconstrictors may increase cardiac output by decreasing dynamic ventricular outflow tract obstruction with less change in myocardial oxygen consumption. In a recent study, the above co-investigators found the effects of dopamine appeared more beneficial than those of phenylephrine in treating isoflurane-induced hypotension in cats with severe HCM. Using samples taken during the prior study, the proposed study will measure troponin I concentration (cardiac myocyte enzymes) in plasma to determine whether increasing myocardial contractility with dopamine results in more myocardial damage than treating hypotension with

phenylephrine. The resulting information will help veterinarians make the most appropriate drug choice to treat anesthetic-induced hypotension in cats with hypertrophic cardiomyopathy.

Transmucosal absorption and analgesic efficacy of opioids in cats: a pharmacokinetic/pharmacodynamic study. *Bruno H. Pypendop, DrMedVet, DrVetSci, Dipl. ACVA; Jan E. Ilkiw, BVSc, PhD, Dipl. ECVA, University of California, Davis*. **$15,963**

Options for providing analgesia to cats outside of a veterinary hospital are limited. Currently, these options are: oral non-steroidal anti-inflammatory drugs (NSAIDs), tramadol, transdermal fentanyl, and transmucosal buprenorphine. NSAIDs have a high risk for toxicity in cats, and no drug is labeled in the United States for repeated administration in cats. Opioids are often considered as the first line of treatment for acute pain. Unfortunately, they are expected to have a short duration of action after oral administration, because of the so-called first-pass effect Indeed, absorption through the gastrointestinal system results in delivery of the drug to the liver, which inactivates a large fraction of the drug. An alternative of clinical interest is absorption through the buccal mucosa. Injectable buprenorphine has been reported to be well absorbed after administration in cats' mouth and to result in good analgesic efficacy, yet recently buprenorphine has been in limited supply. The proposed study will look at transmucosal absorption and analgesic efficacy of four other opioids—oxymorphone, hydromorphone, methadone, and morphine—in cats. The information should be important for all veterinarians when they must provide short term or long term analgesia to cats and may confront shortages, deleterious effects, or a lack of efficacy related to other drugs.

Evaluation of the pharmacokinetics of bosentan, a dual endothelin receptor antagonist, in cats. *Amy DeClue, DVM, MS, DACVIM (Small Animal Internal Medicine); Carol Reinero, DVM, PhD, DACVIM (Small Animal Internal Medicine); Claire Sharp, BSc, BVMS (Hons), CMAVA, University of Missouri-Columbia.* **$11,942**

Feline allergic asthma is one of the most common and serious diseases affecting pet cats. Endothelin-1 (ET-1) is a key mediator of asthma through its pro-inflammatory, pro-fibrotic, bronchoconstrictive, and vasoconstrictive properties. Given the high morbidity and mortality associated with feline asthma, a drug that prevents the deleterious sequelae of ET-1 would be clinically valuable in feline patients. The anti-endothelin effects of bosentan, a dual endothelin receptor antagonist (ETRA), and the only commercially available dual ETRA, are well established in many species and have been confirmed experimentally in cats. Bosentan therapy has been shown to dramatically improve outcome in pulmonary disease complicated by bronchoconstriction. By understanding the pharmacokinetics of bosentan, this study will be an important first step in evaluating this drug as a future therapeutic choice for cats with asthma and potentially other diseases mediated by the inflammatory effects of ET-1.

Investigation of the role of bacterial cell wall components, cytokine signaling, and myofibroblastic fibrosis in feline nonsuppurative cholangitis-cholangiohepatitis syndrome (CCHS) as an aid to improving diagnostic categorization and treatment modalities. *Dr. Sharon A. Center, DVM, DACVIM; Dr. Sean McDonough DVM, DACVP PhD; Dr. Michelle Lepherd, BVSc, MACVSc, PhD, Cornell University*. **$24,140**

Nonsuppurative CCHS, the most common inflammatory liver disease affecting cats, is considered an immune-mediated disorder but may be initiated or perpetuated by bacterial components. While diagnosis requires liver biopsy for histopathology, definitive diagnosis can be difficult due to histologic similarities between nonsuppurative CCHS and hepatic lymphoma (LSA). This study aims to determine 1) whether bacterial components are involved with chronic CCHS and 2) to further develop staining procedures that can assist with differentiation of nonsuppurative CCHS and hepatic LSA. A pilot study suggests through staining for Gram positive bacterial components (LTA), such components may initiate and/or perpetuate chronic CCHS in some cats. Cats with LTA staining may benefit from chronic antimicrobial therapy rather than immunosuppression currently considered standard therapy. In addition, pilot study findings suggest alpha smooth muscle actin (AMSA) helps differentiate CCHS from LSA. Anticipated findings from this study will help 1) identify cats that may derive benefit from chronic antimicrobial therapy, and 2) recommend additional stains that may be routinely used to assist in differentiation of nonsuppurative CCHS from hepatic LSA.

Evaluation of topical delivery methods for the introduction of siRNAs into feline corneal cells in vivo. *Rebecca P. Wilkes, Daniel A. Ward, Kim Newkirk, University of Tennessee.* **$24,780**

Feline herpesvirus 1 (FHV-1) is a DNA virus that produces the most clinically significant respiratory disease of cats. Antiviral medications approved for treatment of HSV-1 in humans are only minimally effective for treatment of chronic herpesvirus cases in cats. In an effort to identify a better treatment modality for this disease, a previously funded study evaluated RNA interference (RNAi) as a therapeutic method for suppression of FHV-1 infection in feline cells. It was discovered that RNA interference can be used to dramatically reduce FHV-1 replication in an immortalized cell line and in primary corneal epithelial cells by targeting essential viral genes. Based on the *in vitro* results, RNA interference is a potential therapeutic for FHV-1. The goal of this study is to determine if this therapeutic modality can be used topically and to identify the best carrier agent to deliver this therapeutic into corneal cells *in vivo*.

Vitamin E as a Novel Treatment for the Anemia of Feline Chronic Renal Failure. *Craig B. Webb, Ph.D., DVM, Diplomate ACVIM, Colorado State University.* **$25,226**

Current erythropoietin supplementation used to treat anemia in chronic renal failure (CRF) cats can result in significant side effects including red cell aplasia. Cats with CRF have less antioxidant capacity than healthy cats. One manifestation of this oxidative imbalance is the lipid peroxidation of erythrocyte (RBC) cell membranes, which would decrease RBC lifespan and contribute to the anemic condition. Vitamin E has antioxidant properties uniquely suited to combating cell membrane lipid peroxidation. This study will look at whether cats with CRF receiving vitamin E supplementation will maintain a higher packed-cell volume for a longer period of time than CRF cats not receiving vitamin E supplementation. Prior to study entry and at the end of the 3-month study period, the cats will be IRIS staged and evaluated for clinical signs of disease progression. The degree, character, and progression of any changes in packed-cell volume (PCV) will be determined, and samples will be analyzed for antioxidant capacity. An important determination will be whether supplementation alone or given along with erythropoietin can benefit cats with CRF needing treatment for anemia.