WINN FELINE FOUNDATION
For the Health and Well-being of All Cats

637 Wyckoff Ave., Suite 336, Wyckoff, NJ 07481 • **www.winnfelinefoundation.org**
Toll Free 888-9MEOWIN (888-963-6946) • Local Phone 201-275-0624 • Fax 877-933-0939

DETERMINING IF MEFLOQUINE INHIBITS FIPV INFECTION IN CATS

PROJECT STUDY: Determination of mefloquine's intrinsic clearance by feline microsomes, as a first step to establish its potential to inhibit FIPV infection in the cat.

Principal Investigators: Drs. Merran Grovendir and Jacqueline Norris; University of Sydney, Australia

Interim report summary, W16-023; Bria Fund

This project is evaluating the human antimalarial drug mefloquine's suitability as a potential treatment for feline infectious peritonitis (FIP).

As the first goal of the study, Mefloquine does not undergo routine therapeutic monitoring in people or any other species, so there is no local access to any assays. Therefore, the investigators have developed a quantitative liquid chromatography assay to detect mefloquine under two different sets of experimental conditions. This part of the project is in progress and nearing completion. Completion is necessary for the final two goals.

The second goal of the study is to investigate whether mefloquine has similar clearance in the cat and dog. This laboratory investigation of intrinsic clearance allows for a considered evaluation as to whether the drug is likely to accumulate in live cats. Some medicines administered to cats are known to have slow phase 2 hepatic metabolism, resulting in delayed elimination and consequent toxicity such as seen with administration of paracetamol (acetaminophen), propofol, carprofen and acetylsalicylic acid. This goal is also in progress and nearing completion.

The next goal of the study is to investigate whether mefloquine when incubated with feline microsomes (cellular), produces similar metabolites to that produced by human and canine microsomes. Novel metabolites generated by feline microsomes can be collected for their identification and their efficacy and toxicity on cell-cultures can be assessed in future studies. However, in our studies, no phase 2 metabolite formation was observed in the cat and dog, lending further corroboration to the theory that mefloquine does not undergo phase 2 hepatic metabolism (as often occurs in cats with metabolism of drugs). This goal is in progress currently.

The final goal is to investigate whether mefloquine has the same plasma protein binding proportion in plasma from clinically normal cats compared to plasma proteins from FIPV affected cats. Medicine binding to plasma proteins is an important concept when formulating an appropriate dose to use in live patients as it is the unbound drug which is not only eliminated more rapidly but is therapeutically active. One of the aims of this study is to determine whether mefloquine and other selected first line medications administered to cats have the same plasma protein binding proportion in clinically normal cats when compared to plasma protein binding from FIP affected cats. This goal is in progress to collect plasma samples from cats for testing and all laboratory work will be completed in 2018.