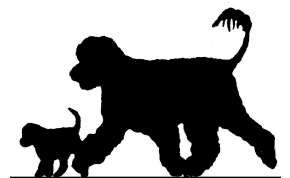


The Portuguese Water Dog Foundation, Inc.

2005 MID YEAR UPDATE

President's Message

www.pwdfoundation.org



The following are progress reports on the three research projects we have co-sponsored with Morris Animal Foundation and reprinted with their permission.

Mechanisms of Epithelial Injury in Canine Inflammatory Bowel Disease, University of Pennsylvania, Peter J. Felsburg, VMD, PhD D04CA-108

Inflammatory bowel disease (IBD) occurs relatively frequently in dogs and can cause vomiting, diarrhea, anorexia and weight loss. Despite the incidence and severity of IBD in dogs, the underlying causes remain uncertain. Current theory suggests an interplay of genetic, environmental and immunological factors and how the epithelial cells (the cells that line the intestine) respond to these factors. The results of this study showed for the first time that probiotic bacteria can positively alter inflammatory cytokines - proteins which regulate the intensity and duration of immune responses - in turn reducing inflammation of the gut. Results obtained from this study helped to further understand the mechanisms of this disease and have opened up some promising leads to more specific strategies for treating and preventing IBD. Further studies, including probiotic bacteria studies, need to be done. This study opened the doors for such interest.

Gene Expression Profiling of Relapsed Lymphoma in Dogs, The Ohio State University, William C. Kisseberth, DVM, PhD D03CA-132

Lymphoma is one of the most common cancers in dogs. Breeds with a high incidence of lymphoma include boxers, golden retrievers, German shepherds and others. Lymphoma is one of the most

treatable cancers-more than 90 percent of dogs treated with chemotherapy go into remission. Unfortunately, most dogs relapse and eventually die from the disease. The investigators are comparing gene expression patterns of tumors from chemotherapy-treated dogs that have relapsed, with tumors from the same dog obtained prior to treatment. Rather than spend more time and money constructing a cDNA library of canine lymphoma and with the dramatic progress of the canine genome, the investigators will use the Affymetrix® Canine GeneChip for the final stages of this project. This array should perform excellently and provide further information for analysis of lymphoma samples in this study, thereby, helping investigators to classify canine lymphomas and identify genes of potential diagnostic and prognostic significance. They are currently enrolling patients to collect paired pre-treatment and first relapse lymph node biopsies from dogs with lymphoma treated with the same doxorubicin-containing combination chemotherapy protocol. The last phase of this three-year study will be to determine gene expression patterns and how those patterns may assist in prognosis of lymphoma patients and identification of potential new targets for therapy in relapsed lymphoma patients. They will use the information to identify important genes and different sub-types of lymphoma , which will help in the development of new and better cancer treatments. Because of the extended time it has taken to accrue patients, it is likely that this study will need a six-month, no-cost extension in the fall.

Mapping Refinement of Quantitative Trait Loci for Canine Hip Dysplasia, Cornell University,
Rory J. Todhunter, BVSc, PhD D04CA-135

Hip dysplasia is one of the most common inherited traits in dogs, with an extremely high incidence in some large breeds. It is caused by mutations in multiple genes. In previous studies, these investigators discovered the genetic markers that point to the chromosomal regions that harbor the genes that contribute to hip dysplasia. In this study, they hope to narrow down these regions through additional genetic evaluation. Thus far, they have improved the marker coverage to exclude chromosomes from further investigation and have identified eight chromosomes that harbor significant quantitative trait loci (QTL) contributing to hip dysplasia traits. Because they have mapped initially in a small pedigree, parameter estimates are likely to be artificially elevated, thus, in order to confirm these results, the researchers are continuing to map these regions with more dogs. They are also in the midst of developing statistical models for hip dysplasia association analysis. They have chosen a mixed model for the association analysis which integrates genomic tools, combining both phenotype (physical appearance) and genotype data.

By narrowing the regions that harbor hip dysplasia genes across breeds, these scientists hope to discover the contributing mutations and use that information to design genetic tests that can be used to prevent the propagation of dysplastic dogs.

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Your contributions can and do make a difference to the Foundation's pursuit of a healthy future for all Portuguese Water Dogs.