

PROGRESS REPORT ON ABCF FUNDED GRANTS

Noriko Tonomura, DVM, PhD
Dog Disease Gene Mapping Project
Broad Institute of MIT and Harvard

How far have we come in finding cause for hereditary dog diseases?

After sequencing the dog genome and developing the tools to find causes for inheritable diseases in dogs, The Dog Genome Project at Broad Institute of MIT and Harvard are actively working on multiple projects with collaborators through out the world. Please check the list below (listed by disease) to find out more.

Please consider helping research: Your Boxer can help!

We would like blood samples from your Boxers. We are going to extract DNA from blood cells, and we only need 5ml (1 teaspoon) of blood in a purple top tube (a.k.a. EDTA tube).

We need samples from dogs that are:

Suffering from a hereditary diseases, especially ones listed below Older (8+) and healthy dogs, meaning ones without hereditary diseases

If you have multiple dogs, please consider donating samples from everyone. We accept samples from any dogs in terms of their relation to each other.

In order for us to put your dog's DNA to good use, it is also critical for us to obtain a record of proper diagnosis from your veterinarian. Please do as much as you can (i.e. histology, ultrasound, etc) to aid making an accurate diagnosis, and please remember to send us a copy of your dog's medical record.

Current active projects involving Boxers Hemangiosarcoma (HSA)

HSA is a rapidly growing and highly invasive, malignant tumor of blood vessels. It can grow large without being noticed, and often cause of death is due to rupturing of the tumor resulting in massive bleeding.

Breeds needed for our study: Golden Retrievers, Labrador Retrievers, Chinese Shar-Peis, **Boxers**, Pugs, and Rhodesian Ridgebacks

Current status: We have finished genome wide screening (Golden Retriever) and fine-mapping (Boxer and others), and we are looking into a few candidate genes closely. We are currently collecting tumor sample -- if your dog has, or is suspected to have hemangiosarcoma, and if you would like to send us a tumor sample, please contact Dr. Truesdale at Central Ave Veterinary Clinic, Seekonk MA (508-761-8525), or Dr. Tonomura

(tonomura@broad.mit.edu).

Main collaborator: Chieko Azuma (Tufts University)

Funding: AKC/CHF

Mast Cell Tumor (MCT):

MCT is cancerous proliferations of mast cells. Although they can and will spread throughout the body, the danger from mast cell tumors arises from the secondary damage caused by the release of chemicals that they produce. These chemicals can cause systemic problems that include gastric ulcers, internal bleeding, and a range of allergic manifestations.

Breeds needed for our study: Golden Retrievers, Labrador Retrievers, German Shepherd Dogs, Pugs, Shar-Peis and **Boxers**

Current status: We have started genome wide screening (Golden Retriever), and getting ready for fine-mapping. We still need samples from Golden Retrievers as well as Boxers that are affected by Mast Cell Tumor.

Main collaborators: Cheryl London (Ohio State University), Lisa Barber (Tufts University)

Funding: Morris Animal Foundation

Lymphoma

Lymphoma is a cancer of the lymphocytes, which can occur in the lymph nodes, spleen, liver, and other organs. Characteristics are high white blood cell count, swollen lymph glands, lethargy, and loss of appetite. It is a treatable cancer, but if left untreated, it will eventually lead to death. There are many subtypes of this cancer, but most are categorized as B cell lymphoma, or T cell lymphoma.

Breeds needed for our study: Golden Retrievers, Cocker Spaniels, Rottweilers and **Boxers**

Current status: We are actively collecting samples. Since there are many subtypes exist, making an accurate diagnosis is very critical. If your dog is newly diagnosed with lymphoma, consider contacting Dr. Tonomura (tonomura@broad.mit.edu) **before** you start any type of treatment.

Main collaborators: Matthew Breen (North Carolina State University), Jaime Modiano (University of Minnesota), Kristine Burgess (Tufts University)

Funding: Pending