GDCA Irish Spotting Test Validation: Study Announcement

At its October 24 meeting, GDCA approved a collaborative project with the University of California-Davis Veterinary Diagnostics Laboratory (VGL). The objectives of this research are to validate VGL's proposed genetic test for Irish Spotting and to further define the relationship between test results and appearance in Great Danes who display varying degrees and placement of white markings.

Although there have been important advances in the use of health testing to eliminate disease and more accurately predict the outcome of potential breedings, there's still have room for improvement. Predicting the outcome of breedings within the "harlequin/black and white" family of Great Danes is a case in point. Thanks to the efforts of genetic researchers world-wide, we now have a better understanding of coat color inheritance which has led to tests for specific genes which determine color expression. This includes recognition that coat COLOR and PATTERN are inherited independently in the "harlequin/black and white family" of Great Danes. VGL has developed a genetic test for "Irish Spotting/MITF", which controls the pattern of white markings, based on various dog breeds which show this pattern. In order to advance this test to the next stage where it will be available to the general public, it needs to be validated to prove the results accurately discriminate between dogs who show the desired "Irish" pattern and those who do not (for example, partial or other, non-Irish variations).

A validated genetic test will provide another useful tool for breeders as they strive to maximize production of offspring who most closely meet the pattern described in GDCA's breed standard. In order to validate the test, VGL needs specimens and photographs from approximately 100-200 Great Danes. The proposed study will compare the results of the VGL MITF test with photographs of the dogs who fall into various ranges of the test result. Assuming the test produces results which reliably identify dogs who possess desirable genotypes, breeders will be able to use the test to optimize production of offspring who most closely conform to the pattern described in the standard, a valuable tool for those who breed within the harlequin family of Great Danes.

We plan to recruit and enroll Great Danes with varying degrees of white markings, obtain photographs and log these into a research database. VGL will perform the genetic test at no charge and inform the owner and GDCA of the test results. Once a sufficient number of paired genetic tests and photographs are available, statistical analyses will be performed to determine the extent to which the test result is consistent with the specific pattern and continuum of white markings seen in the Great Danes in the study. Assuming the test result correctly discriminates between Irish pattern and other non-standard white markings, the test will be validated and will be made available to the general public via VGL.

NOTE: This study will begin MITF-LP testing at VGL on December 1.

GDCA Irish Spotting Test Validation Study:

Registration Information

GDCA is seeking Great Danes who show significant white markings to participate in a research study to assist in the validation of a genetic test for the Irish Spotting/MITF Length Polymorphism. Eligible are harlequin, piebald, merle, black mantle, merle mantle or others with white markings outside the chest or feet. Typically, these will be dogs descended from the harlequin family. The goals of the study are to: (1) assist in the validation of VGL's MITF LP test; (2) provide owners with information useful for future breeding decisions; and (3) support development of educational material on the topic of coat color/pattern inheritance to be shared with members and non-members of GDCA. Owners will be provided with their dog's test results free of charge.

VGL's MITF LP test is not available outside this GDCA research study.

To be included in the study, the dog owner will contact the study manager, **Mary Anne Zanetos (MAZ) at MAZ850@aol.com** and provide the following information for each dog to be enrolled:

- Owner's name and contact information
- Dog's name, breed, registration number, date of birth, gender, color
- Names and registration numbers of sire and dam
- Clear profile photographs of both sides of the dog showing white markings

MAZ will review the information and if complete:

- The owner will be provided with a consent form permitting VGL, GDCA and study manager to receive MITF LP test results from VGL and to use these results, demographic information and photographs in the study report and potential publications.
- Upon receipt of these items, MAZ will contact owners, confirm receipt of the items above and enter information into the study database.

Owner will be provided with instructions on how to submit their dog's sample to University of California Davis' Veterinary Genetics Laboratory and a coupon code which confirms study entry and authorizes payment for the test by GDCA.

Please Note:

1. Results from other genetic testing by VGL will be provided to owners separately and will not be reported to GDCA.
2. Individual adult dogs are preferred.
3. In certain cases, dogs previously tested by VGL for piebald gene can be retroactively entered in the study, provided the original sample is available and the information above is submitted to MAZ.