



An Update on Transitional Cell Carcinoma of the Urinary Bladder Research in the Shetland Sheepdog

The Ostrander Laboratory at the National Human Genome Research Institute at NIH in collaboration with the Purdue Comparative Oncology Program at Purdue University and the Department of Small Animal Clinical Sciences at Michigan State University have been working since 2006 to discover the genetic causes of transitional cell carcinoma (TCC) of the urinary bladder in dogs. TCC is a devastating disease and Shetland Sheepdogs are four and one half times more likely to be diagnosed with TCC than most other dogs. Our ultimate goal is to identify the genetic variants responsible for this much increased susceptibility to the disease.

We are excited to be able to report the completion of our first SNP based genome-wide analysis in more than 60 of our best Sheltie cases and controls. The most informative cases have a diagnosis of TCC confirmed by biopsy with histopathology. The best controls have passed the age of eight with no diagnosis of cancer of any kind.

Our researchers looked for locations in the genome that differ between affected and unaffected dogs, and have found genomic region(s) that appear to be important in TCC. We believe that further testing can lead to identification of causative mutations responsible for development and progression of TCC of the urinary bladder in Shetland Sheepdogs, as well as in other dog breeds that are at high risk of developing the disease.

Our thanks go out to the American Shetland Sheepdog Association and all Shetland Sheepdog owners for their great response to our request for blood samples for our TCC research. Because of your support we have received samples from 57 Shelties with TCC and 68 healthy, control Shelties at least 8 years of age. In order to complete our goals, we are in need of more samples, especially from the two groups listed above; cases with complete biopsy confirmed diagnosis of TCC and healthy, aged controls. In addition, we ask that you please keep us updated as to the health of your participating dogs so that we can keep them in the correct study group. If your dog just celebrated his/her eighth birthday in good health, let us know. If your dog has received a diagnosis of cancer since he/she submitted a sample, please fax or mail the veterinarian's report to us at the address below. Updates can be sent to us either by phone, email, or through our online survey at http://research.nhgri.nih.gov/dog_genome/, which can be accessed with the password: Missy07.

If your dog would like to participate in the TCC study and you need information or a sampling kit, please contact:

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As always, your participation in the study and any information you provide us will remain confidential.

This has been an exciting year for TCC research and we feel very optimistic about the direction that the research is taking. None of this would have been possible without your dedication to this wonderful breed and its health. We hope our work will determine the genetic cause of TCC so that steps can be taken toward the prevention of this terrible disease. With your continued participation and enthusiasm, we are making great strides in that direction.

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