Histiocytic Sarcoma test

Histiocytic Sarcoma

Histiocytic sarcoma (formerly malignant histiocytosis) is a major cause of death in the Bernese Mountain Dog. It is a cancer of the histiocytes, cells responsible for immune function, which are present in the lymph nodes and a number of organs. No treatment is effective to date, and the disease is fatal.

How to diagnose Histiocytic Sarcoma ?

Currently, the only definitive diagnosis is histological analysis (your veterinarian sends a tissue sample of the tumour in formalin to the usual histology laboratory).

What is the cause of this cancer? Why is it so frequent ?

The development of this cancer involves several genes as well as environmental factors, which makes the mode of transmission very complex.
The disease appears late in life, often after the dog has been bred and therefore transmitted predisposition genes to its offspring, and thus contributing to spread the disease.

For over eight years, the Canine Genetics team of the CNRS in Rennes (France) and their international collaborators have been conducting genetic studies on Histiocytic Sarcoma in the Bernese Mountain Dog. These studies allowed them to locate regions of the genome implicated in this disease.
The analysis of a large number of samples (more than 2000 Bernese Mountain Dogs) from affected dogs as well as old healthy dogs has enabled to identify genetic markers associated with risk of developing and transmitting this cancer. Studies continue to investigate these genomic regions. **For more information** : click here

To enable breeders to benefit from the preliminary results of the research on Histiocytic Sarcoma in the Bernese Mountain Dog, the ANTAGENE laboratory, in collaboration with the CRNS Canine Genetics Team in Rennes, has developed a genetic test.

Test

The test for Histiocytic Sarcoma gives results expressed as a genetic index which is based on the statistical analysis of genetic markers from the research data. It is a selection tool and does not constitute a predictive test for the development of this cancer. The test for Histiocytic Sarcoma is a genetic tool to assist breeders in the management of their kennels and decisions on matings to enable them to reduce the incidence of histiocytic sarcoma in the population of Bernese Mountain Dogs.

The genetic index is based on nine genetic markers (panel SH0912) identified from scientific research on Histiocytic Sarcoma in the Bernese Mountain Dog. The calculation of the index has been developed from a population of 1081 European dogs, mainly from France.

Indice	Explication
A	The individuals tested have four times the chance of NOT developing Histiocytic Sarcoma.
B	Neutral index
C	The individuals tested have four times the risk of developing Histiocytic Sarcoma. The risk of the markers associated with the disease being transmitted to offspring is greatly increased.

- **Advice to breeders on the use of the index**

It is important within a breeding population to give priority to individuals with the best index but is also of the utmost importance when selecting breeding pairs that sufficient genetic diversity is maintained in the breed. This genetic test should be just one of the many selection criteria.

- **Recommendations**

An Index C dog with a number of other positive qualities should not be removed from the breeding programme, rather it should only be mated with individuals showing Index A or B results. Mating programmes should be planned to avoid C x C matings.

Being a selection tool, the SH test is only available to breeders.

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Procedure for requesting the test for Histiocytic Sarcoma

1. **Ask your veterinarian to perform a blood analysis on the 1 to 2ml EDTA tube.**
   (cheek swab accepted for puppies younger than 3 months old)

2. **Complete the ANTAGENE submission form (check "HS test"), signed and stamped by the veterinarian.**
   Download the submission form : click here

3. **Download and sign two copies of the Memorandum of Agreement**
   (required only on first order)
   Download the Memorandum of Agreement : click here

4. **Send your sample to ANTAGENE :**
   ANTAGENE
   6 allée du Levant
   69890 La Tour de Salvagny
   FRANCE

The result will be sent in **PDF format by email within 10-15 days.**

Why is it important to continue with the research ?

The test for Histiocytic Sarcoma is not an end but a continuation of the research on Histiocytic Sarcoma. The test will be optimized and refined with advanced research. For this your participation is essential.
Participation in research is free and all information submitted concerning the dog and its owner, will be treated with confidentiality.

For further information about participation in the research :
CNRS Canine Genetic Team, Rennes (France)
Email : cani-dna@univ-rennes1.fr
Website : http://dog-genetics.genouest.org