

## Non-Type 1 Canine Cystinuria Marker DNA Test Report

Processing date: 11/19/2014

Test ID No.: C 1555

### Owner's Information:

Name: Birte Christoffersen

Address: Boelling Tvaerves 22  
Egtved

6040

Denmark

### Dog's Information:

Registered Name: Hugedogge Xmads

Call Name: Harley

Breed: Mastiff

Registration #: DK01518/2010

### Genotyping Test Result:

Test Pattern/Genotype: 1 - 1

#### Results Interpretation:

1-1 (Homozygous Normal/Clear) - This dog is homozygous (2 copies) for the normal marker and no copies of the marker associated with cystine stone formation in Mastiff dogs and some related breeds. A male dog with this 1-1 result does not have the cystinuria-predisposing marker and most commonly has a negative nitroprusside (NP-) test result and the lowest risk for forming cystine stones. We recommend annual urine nitroprusside test screening for intact male dogs starting by two years of age because we have identified a few 1-1 dogs with elevated urinary cystine levels.

1-2 (Heterozygous) - This dog is heterozygous with one copy of the normal marker and one copy of the marker associated with cystine stone formation. An intact male dog with this 1-2 result is at intermediate risk for developing cystine stones. Urine nitroprusside screening on intact males, starting by two years of age, should be performed, since many 1-2 intact male dogs can have elevated cystine levels (NP+), and some form cystine stones. We have observed intact male 1-2 dogs become nitroprusside positive (NP+) after the age of two years. A negative nitroprusside test does not guarantee that an intact male dog will remain nitroprusside negative and will not form stones throughout his life. However, dogs with the 1-2 test result and multiple NP- results after the age of two years are at low risk for cystine stone formation. Castration is an option for lowering urine cystine levels, thus reducing the risk for cystine stone formation. Both males and females with the 1-2 result can pass on the high-risk marker (2) to their offspring.

2-2 (Homozygous Affected/At Risk) This dog is homozygous (2 copies) for the marker associated with cystinuria and cystine stone formation. An intact male 2-2 dog has the highest risk for forming cystine stones, usually with cystine stones causing clinical signs by 4 years of age. Castration is recommended to essentially eliminate both the risk of stone formation and prevent the spread of the disease-causing allele to offspring. While females will not be cystinuric and have no risk for cystine calculi formation, they will pass on the disease-associated marker allele (2) to all their offspring and thereby can produce cystinuric (2-2) male offspring if bred to 1-2 or 2-2 males, or all 1-2 dogs if bred to 1-1 (clear) dogs.

Sincerely,

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