

# GENETIC ANALYSIS REPORT



## OWNER'S DETAILS

**Maria Bryan**

Po Box 284

Charleville, QL 4476

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A.B.N. 8 722 516 58 99

## ANIMAL'S DETAILS

**Registered Name:** Log Cabin Max  
**Pet Name:** Log Cabin Max  
**Breed:** Boston Terrier  
**Date of Birth / Age:** 02/12/14

**Registration No:** Pending  
**Microchip No:** 985112005643610  
**Sex:** Male  
**Colour:** Blue & White

## COLLECTION DETAILS

**Case Number:** 16-106442  
**Collected By:** Maria Bryan

**Date of Test:** 02/05/16  
**Approved Coll. Mthd.:**

Sample with Lab ID Number 16-106442 was received at Orivet Genetics, DNA was extracted and analysed with the following results reported:

**DNA PROFILE** The DNA Profile below represents the genetic identification of Log Cabin Max

SNP01 AA	SNP02 AT	SNP03 GG	SNP04 CA	SNP05 GG	SNP06 CC	SNP07 GG	SNP08 GG	SNP09 AG	SNP10 AA	SNP11
SNP12 GT	SNP13 GG	SNP14 GG	SNP15 CC	SNP16 TT	SNP17 CC	SNP18 GT	SNP19 GT	SNP20 TC	SNP21 CC	SNP22 GG
SNP23 TT	SNP24 CA	SNP25 AG	SNP26	SNP27 AG	SNP28 AG	SNP29 AA	SNP30 GA	SNP31 CC	SNP32 AA	SNP33 CG
SNP34 TT	SNP35 CC	SNP36 AA	SNP37 GT	SNP38 TT	SNP39 GT	SNP40 TT	SNP41 TT	SNP42 CG	SNP43 TT	SNP44
SNP45 CC	SNP46 GG	SNP47 CC	SNP48	SNP49 CA	SNP50 GG	SNP51 GG	SNP52 CC	SNP53 GG	SNP54 TT	SNP55 GG
SNP56 CT	SNP57 CC	SNP58 GG	SNP59 CC	SNP60 TA	SNP61 GG	SNP62 CC	SNP63 CC	SNP64 GG	SNP65 GG	SNP66 TT
SNP67 AA	SNP68 TT	SNP69 CC	SNP70 TT	SNP71 GG	SNP72 GA	SNP73 TT	SNP74	SNP75 TC	SNP76	SNP77 CT
SNP78	SNP79 CT	SNP80 GA	SNP81 GG	SNP82 CC	SNP83 TT	SNP84 CC	SNP85 TA	SNP86 CC	SNP87 AA	SNP88 GA



RESULTS REVIEWED AND CONFIRMED BY:

Dr. Noam Pik BVs MDSV

George Sofronidis BSc (Hons)

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**DISEASE(S):** PRIMARY LENS LUXATION - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
EXERCISE INDUCED COLLAPSE - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
COLLIE EYE ANOMALY/CHOROIDDAL HYPOPLASIA - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
DEGENERATIVE MYELOPATHY - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
PROGRESSIVE RETINAL ATROPHY - RCD 3 - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
AUTOSOMAL HEREDITARY RECESSIVE NEPHROPATHY - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
CANINE HYPERURICOSURIA - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
CANINE LEUKOCYTE ADHESION DEFICIENCY - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
CENTRONUCLEAR MYOPATHY - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
CONGENITAL HYPOTHYROIDISM - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
COPPER TOXICOSIS - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
CEREBELLA ATAXIA - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
PROGRESSIVE RETINAL ATROPHY - CORD1/RCD-4 - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
FUCOSIDOSIS - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
FACTOR VII DEFICIENCY - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
GLOBOID CELL LEUKODYSTROPHY/KRABBE'S DISEASE - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
GM1 - GANGLIOSIDOSIS - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
HEREDITARY CATARACT (JUVENILE) - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
HEREDITARY CATARACT - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
IVERMECTIN SENSITIVITY MDR1 - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
L2 HYDROXYGLUTARIC ACIDURIA - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
MUSCULAR DYSTROPHY X-LINKED (MDX) - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
MUCOPOLYSACCHARIDOSIS - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
MYOTUBULAR MYOPATHY X LINKED - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
NARCOLEPSY - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
NCL- BORDER COLLIE - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
NCL - DACHSHUND - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
NCL- ENGLISH SETTER - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
NEONATAL ENCEPHALOPATHY - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
PYRUVATE DEHYDROGENASE PHOSPHATASE 1 DEF - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
PHOSPHOFRUCTOKINASE (PFK) DEFICIENCY - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
PYRUVATE KINASE (PK) DEFICIENCY - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
PROGRESSIVE RETINAL ATROPHY-PRA1 - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
PROGRESSIVE RETINAL ATROPHY-RCD1A - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
VON WILLEBRAND'S DISEASE TYPE I - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
VON WILLEBRAND'S DISEASE TYPE III - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
MYOTONIA CONGENITA - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**

**TRAIT(S):**

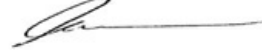
LONG HAIR GENE (PHENOTYPE) - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
NATURAL BOB TAIL (SHORT TAIL PHENOTYPE) - **NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**  
A-LOCUS AGOUTI - **ay/ay PURE FAWN or SABLE only PRODUCE ay OFFSPRING**  
B (TYRP1 LOCUS) BROWN/CHOCOLATE - **Bb - CARRIER OF BROWN / LIVER / CHOCOLATE**  
DILUTE MLPH GENE (BLUE/GREY) - **dd GREY, GRAY BLUE, OR SILVER - COLOUR IS DILUTED**  
K-LOCUS (DOM BLACK/WILD TYPE) - **CARRIER - K/k ONE COPY DOM BLACK and ONE COPY NON BLACK**  
EM-LOCUS MELANISTIC MASK ALLELE - **E<sup>m</sup>TWO MASK ALLELES DEPENDS ON A and K SERIES**  
E (EXTENSION) LOCUS MC1R - **EE - DOMINANT BLACK DOES NOT CARRY YELLOW/RED/WHITE**



**RESULTS REVIEWED AND CONFIRMED BY:**



Dr. Noam Pik BVs MDSV



George Sofronidis BSc (Hons)

*The terms below are provided to help clarify certain results phrases on your genetic report. The phrases below are those as reported by Orivet and may vary from one laboratory to the other.*

#### **NORMAL/CLEAR/NEGATIVE - NO VARIANT DETECTED**

No presence of the variant (mutation) has been detected. The animal is clear of the disease and will not pass on any disease-causing mutation.

#### **CARRIER - ONE COPY OF THE VARIANT DETECTED**

This is also referred to as HETEROZYGOUS. One copy of the normal gene and copy of the affected (mutant) gene has been detected. The animal will not exhibit disease symptoms or develop the disease. Consideration needs to be taken if breeding this animal - if breeding with another carrier or affected or unknown then it may produce an affected offspring.

#### **AFFECTED/POSITIVE FOR THE VARIANT**

Two copies of the disease gene variant (mutation) have been detected also referred to as HOMOZYGOUS for the variant. The animal may show symptoms (affected) associated with the disease. Appropriate treatment should be pursued by consulting a Veterinarian.

#### **AFFECTED – HETEROZYGOUS ONE COPY (AUTOSOMAL DOM)**

Also referred to as POSITIVE ONE COPY or POSITIVE HETEROZYGOUS. This result is associated with a disease that has a dominant mode of inheritance. One copy of the normal gene (wild type) and affected (mutant) gene is present. Appropriate treatment should be pursued by consulting a Veterinarian. This result can still be used to produce a clear offspring.

#### **AFFECTED – HOMOZYGOUS TWO COPIES (AUTOSOMAL DOM)**

Also referred to as POSITIVE HOMOZYGOUS. Two copies of the disease gene variant (mutant) have been detected and the animal may show symptoms associated with the disease. Please Note: This disease has dominant mode of inheritance so if mated to a clear animal ALL offspring will be AFFECTED – HETEROZYGOUS ONE COPY.

#### **NORMAL BY PARENTAGE HISTORY**

The sample submitted has had its parentage verified by DNA. By interrogating the DNA profiles of the Dam, Sire and Offspring this information together with the history submitted for the parents excludes this animal from having this disease. The controls run confirm that the dog is NORMAL for the disease requested.

#### **NORMAL BY PEDIGREE**

The sample submitted has had its parentage verified by Pedigree. The pedigree has been provided and details (genetic testing reports) of the parents have been included. Parentage could not be determined via DNA profile as no sample was submitted.

#### **NO RESULTS AVAILABLE**

Insufficient information has been provided to provide a result for this test. Sire and Dam information and/or sample may be required. This result is mostly associated with tests that have a patent/license and therefore certain restrictions apply. Please contact the laboratory to discuss.

#### **DNA PROFILE**

Also known as a DNA fingerprint. This is unique for the animal. No animal shares the same DNA profile. An individual's DNA profile is inherited from both parents and can be used for verifying parentage (pedigrees). This profile contains no disease or trait information and is simply a unique DNA signature for that animal.

#### **INDETERMINABLE**

The sample submitted has failed to give a conclusive result. This result is mainly due to the sample failing to "cluster" or result in the current grouping. This will be repeated and looked at manually; if a result cannot be determined, a recollection may be requested.

#### **PARENTAGE VERIFICATION**

##### **QUALIFIES/CONFIRMED or DOES NOT QUALIFY/EXCLUDED**

Parentage is determined by examining the markers on the DNA profile. A result is generated and stated for all DNA parentage requests. Parentage confirmation reports can only be generated if a DNA profile has been carried out for Dam, Offspring and possible Sire/s.

#### **PENDING**

Results for this test are still being processed. Some tests are run independently and are reported at a later date. When completed, the result will be emailed.

#### **APPROVED COLLECTION METHOD (YES)**

The sample submitted for testing HAS met the requirements recommended by member bodies for the DNA collection process. The animal has been identified via its microchip number (Positive ID) and collected by a Veterinarian or Approved Collection Agent.

#### **APPROVED COLLECTION METHOD (NO)**

The sample submitted for testing HAS NOT met the requirements recommended by member bodies for the DNA collection process.

#### **TRAIT**

A feature that an animal is born with (a genetically determined characteristic). Traits are a visual phenotype that range from colour to hair length, and also includes certain features such as tail length. If an individual is AFFECTED for a trait then it will show that characteristic eg. AFFECTED for the B (Brown) Locus or bb will be brown/chocolate.

**CLARIFICATION OF GENETIC TESTING** The goal of genetic testing is to provide breeders with relevant information to improve breeding practices in the interest of animal health. However, genetic inheritance is not a simple process, and may be complicated by several factors. Below is some information to help clarify these factors.

**1)** Some diseases may demonstrate signs of what Geneticists call “genetic heterogeneity”. This is a term to describe an apparently single condition that may be caused by more than one mutation and/or gene.

**2)** It is possible that there exists more than one disease that presents in a similar fashion and segregates in a single breed. These conditions - although phenotypically similar - may be caused by separate mutations and/or genes.

**3)** It is possible that the disease affecting your breed may be what Geneticists call an “oligogenic disease”. This is a term to describe the existence of additional genes that may modify the action of a dominant gene associated with a disease. These modifier genes may for example give rise to a variable age of onset for a particular condition, or affect the penetrance of a particular mutation such that some animals may never develop the condition.

The range of hereditary diseases continues to increase and we see some that are relatively benign and others that can cause severe and/or fatal disease. Diagnosis of any disease should be based on pedigree history, clinical signs, history (incidence) of the disease and the specific genetic test for the disease.

Penetrance of a disease will always vary not only from breed to breed but within a breed, and will vary with different diseases. Factors that influence penetrance are genetics, nutrition and environment. Although genetic testing should be a priority for breeders, we strongly recommend that temperament and phenotype also be considered when breeding.

**Orivet Genetic Pet Care** aims to frequently update breeders with the latest research from the scientific literature. If breeders have any questions regarding a particular condition, please contact us on (03) 9534 1544 and we will be happy to work with you to answer any relevant questions.

*Join the Genetic Revolution*

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ORIVET GENETIC PET CARE PO BOX 110, ST KILDA 3182 VIC AUSTRALIA [orivet.com.au](http://orivet.com.au)

The logo for Orivet Genetic Pet Care features a stylized white outline of a dog's head and neck, positioned above the word "Orivet" in a large, elegant, white serif font. Below "Orivet" is the phrase "Genetic Pet Care" in a smaller, white, sans-serif font. The entire logo is set against a dark teal background.

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Genetic Pet Care