

## Laboratory Report

<b>Laboratory #:</b>	330745	<b>Call Name:</b>	Laurs
<b>Order #:</b>	182717	<b>Registered Name:</b>	Serenity's Laurus Nobilis
<b>Ordered By:</b>	Margaret Black	<b>Breed:</b>	Labrador Retriever
<b>Ordered:</b>	April 19, 2023	<b>Sex:</b>	Male
<b>Received:</b>	April 20, 2023	<b>DOB:</b>	Jan. 2022
<b>Reported:</b>	April 28, 2023	<b>Registration #:</b>	SS31782110
		<b>Microchip #:</b>	956000014084929

### Results:

Disease	Gene	Genotype	Interpretation
Centronuclear Myopathy	PTPLA	WT/WT	Normal (clear)
Congenital Myasthenic Syndrome (Labrador Retriever Type)	COLQ	WT/WT	Normal (clear)
Exercise-Induced Collapse	DNM1	WT/WT	Normal (clear)
Hereditary Nasal Parakeratosis (Labrador Retriever Type)	SUV39H2	WT/WT	Normal (clear)
Macular Corneal Dystrophy (Labrador Retriever Type)	CHST6	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Golden Retriever 2	TTC8	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Progressive Rod-Cone Degeneration	PRCD	WT/WT	Normal (clear)
Retinal Dysplasia/Oculoskeletal Dysplasia 1	COL9A3	WT/WT	Normal (clear)
Skeletal Dysplasia 2	COL11A2	WT/WT	Normal (clear)
Stargardt Disease	ABCA4	WT/WT	Normal (clear)

WT, wild type (normal); M, mutant; Y, Y chromosome (male)

### Interpretation:

Molecular genetic analysis was performed for 10 specific mutations reported to be associated with disease in dogs. We identified two normal copies of the DNA sequences in 10 mutations tested. Thus, this dog is not at an increased risk for the diseases associated with these 10 mutations.

### Recommendations:

No mutations were identified. Thus, this dog is not at an increased risk for the diseases caused by or associated with the mutations tested. Because this dog is "clear" of these mutations, this dog will only pass the normal genes on to its offspring. Normal results do not exclude inherited mutations not tested in these or other genes that may cause medical problems or may be passed on to offspring. Paw Print Genetics® has genetic counseling available to you at no additional charge to answer any questions about these test results, their implications and potential outcomes in breeding this dog.



**Blake C Ballif, PhD**  
Laboratory & Scientific Director



**Christina J Ramirez, PhD, DVM, DACVP**  
Medical Director

Paw Print Genetics® performed the tests listed on this dog. The genes/diseases reported here were selected by the client. Normal results do not exclude inherited mutations not tested in these or other genes that may cause medical problems or may be passed on to offspring. The results included in this report relate only to the items tested using the sample provided. These tests were developed and their performance determined by Paw Print Genetics. This laboratory has established and verified the test(s)' accuracy and precision with >99.9% sensitivity and specificity. The presence of mosaicism may not be detected by this test. Non-paternity may lead to unexpected results. This is not a breed identification test. Because all tests performed are DNA-based, rare genomic variations may interfere with the performance of some tests producing false results. If you think any results are in error, please contact the laboratory immediately for further evaluation. In the event of a valid dispute of results claim, Paw Print Genetics will do its best to resolve such a claim to the customer's satisfaction. If no resolution is possible after investigation by Paw Print Genetics with the cooperation of the customer, the extent of the customer's sole remedy is a refund of the fee paid. In no event shall Paw Print Genetics be liable for indirect, consequential or incidental damages of any kind. Any claim must be asserted within 60 days of the report of the test results.

## Coat Color and Trait Certificate

<b>Call Name:</b>	Laurs	<b>Laboratory #:</b>	330745
<b>Registered Name:</b>	Serenity's Laurus Nobilis	<b>Registration #:</b>	SS31782110
<b>Breed:</b>	Labrador Retriever	<b>Microchip #:</b>	956000014084929
<b>Sex:</b>	Male	<b>Certificate Date:</b>	April 17, 2023
<b>DOB:</b>	Jan. 2022		

This canine's DNA showed the following genotype(s):

Coat Color/Trait Test	Gene	Genotype	Interpretation
B Locus (Brown)	TYRP1	B/B	Black coat, nose and foot pads (does not carry brown)
D Locus (Dilute)	MLPH	D/D	Non-dilute (does not carry dilute)
E Locus - e (Apricot/Cream/Red/Yellow, Common Variant Found in Many Breeds)	MC1R	E/E	Black
K Locus (Dominant Black)	CBD103	K <sup>B</sup> /K <sup>B</sup>	No agouti expression allowed
L Locus (Long Hair/Fluffy) - Lh <sup>1</sup> (Common Variant Found in Many Breeds)	FGF5	Sh/Sh	Shorthaired (does not carry long hair)

### Interpretation:

This dog does not carry any copies of the b<sup>a</sup>, b<sup>c</sup>, b<sup>d</sup> or b<sup>s</sup> mutations and has a B locus genotype of **B/B**. Thus, this dog typically will have a black coat, nose, and foot pads. However, this dog's coat color is dependent on the genotypes of many other genes. This dog will pass one copy of **B** to 100% of its offspring and cannot produce b/b dogs.

This dog does not carry any copies of the d<sup>1</sup> or d<sup>2</sup> mutations and has a D locus genotype of **D/D** which does not result in the "dilution" or lightening of the pigments that produce the dog's coat color. This dog will pass one copy of **D** to 100% of its offspring and cannot produce d/d dogs.

This dog carries two copies of **E** which allows for the production of black pigment. However, this dog's coat color is also dependent on the K, A, and B genes. This dog will pass on **E** to 100% of its offspring.

The K locus genotype for this dog is **K<sup>B</sup>/K<sup>B</sup>** which prevents expression of the agouti gene (A locus) and allows for solid eumelanin (black pigment) production in pigmented areas of the dog. However, this dog's coat color is also dependent on its genotypes at the E and B loci. This dog will pass on **K<sup>B</sup>** to 100% of its offspring.

This dog carries two copies of **Sh** which results in short hair. This dog will pass on **Sh** to 100% of its offspring.

Paw Print Genetics® has genetic counseling available to you at no additional charge to answer any questions about these test results, their implications and potential outcomes in breeding this dog.



**Blake C Ballif, PhD**  
Laboratory & Scientific Director



**Christina J Ramirez, PhD, DVM, DACVP**  
Medical Director

Paw Print Genetics® performed the testing on the dog listed on this certificate. The genes/traits reported here were selected by the client. Normal results do not exclude inherited mutations not tested in these or other genes that may cause variation in traits, medical problems or may be passed on to offspring. The results included in this report relate only to the items tested using the sample provided. These tests were developed and their performance determined by Paw Print Genetics. This laboratory has established and verified the test(s)' accuracy and precision with >99.9% sensitivity and specificity. The presence of mosaicism may not be detected by this test. Non-paternity may lead to unexpected results. This is not a breed identification test. Because all tests performed are DNA-based, rare genomic variations may interfere with the performance of some tests producing false results. If you think any results are in error, please contact the laboratory immediately for further evaluation. In the event of a valid dispute of results claim, Paw Print Genetics will do its best to resolve such a claim to the customer's satisfaction. If no resolution is possible after investigation by Paw Print Genetics with the cooperation of the customer, the extent of the customer's sole remedy is a refund of the fee paid. In no event shall Paw Print Genetics be liable for indirect, consequential or incidental damages of any kind. Any claim must be asserted within 60 days of the report of the test results.