

Coat Color and Trait Certificate

Call Name:	ROXI	Laboratory #:	157882
Registered Name:	Twin River Labradors Forever Legacy	Registration #:	SS13257201
Breed:	Labrador Retriever	Microchip #:	956000004571656
Sex:	Female	Certificate Date:	Jan. 7, 2020
DOB:	July 2019		

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

Coat Color/Trait Test	Gene	Genotype	Interpretation
B Locus (Brown)	<i>TYRP1</i>	B/B	Black coat, nose and foot pads
D Locus (Dilute)	<i>MLPH</i>	D/D	Non dilute
E Locus (Yellow/Red)	<i>MC1R</i>	E/e	Black (carries yellow/red)
K Locus (Dominant Black)	<i>CBD103</i>	K ^B /K ^B	No agouti expression allowed
L Locus (Long Hair/Fluffy)	<i>FGF5</i>	Sh/Sh	Shorthaired

Interpretation:

This dog carries two copies of **B** at all three of the b^c, b^d and b^s loci making the overall B locus genotype of this dog **B/B**. The overall B locus genotype for a dog is determined by the combination of the genotypes at the b^c, b^d, and b^s loci. The b^c, b^d, and b^s variants confer brown coat, nose, and foot pads when at least one of these DNA changes is present on both genes of the dog at the B locus. If the dog has one or no copies of **b** then the dog will have a black coat, nose, and foot pads. However, this dog's coat color is also dependent on the E, K, and A genes. This dog will pass on **B** to 100% of its offspring.

This dog carries two copies of **D** which does not result in the "dilution" or lightening of the black and yellow/red pigments that produce the dog's coat color. The base coat color of this dog will be primarily determined by the E, K, A, and B genes. This dog will pass on **D** to 100% of its offspring.

This dog carries one copy of **E** and one copy 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 **E** on to 50% of its offspring and **e** to 50% of its offspring, which can produce a yellow/red coat (including shades of white, cream, yellow, apricot or red) if inherited with another copy of **e**.

The K locus genotype for this dog is **K^B/K^B** 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^B** to 100% of its offspring.

This dog carries two copies of **Sh** which results in short hair. However, the overall coat type of this dog is dependent on the combination of this dog's genotypes at the L, Cu, and IC loci. This dog will pass **Sh** on 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.

**Note: The preliminary results for D Locus and K Locus and final results for all other tests were reported to the client via phone on Jan. 6, 2020.*