

## Coat Color and Trait Certificate

**Call Name:** Lucky Lad  
**Registered Name:** Lucky Lad  
**Breed:** Standard Poodle  
**Sex:** Male  
**DOB:** Feb. 2020

**Laboratory #:** 226909  
**Registration #:** PR22533204  
**Microchip #:** 956000013736970  
**Certificate Date:** April 13, 2021

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

Coat Color/Trait Test	Gene	Genotype	Interpretation
A Locus (Agouti)	<i>ASIP</i>	$a^t/a$	Tricolor, black and tan (carries bicolor/solid)
B Locus (Brown)	<i>TYRP1</i>	B/b	Black coat, nose and foot pads (carries one copy of brown)
D Locus (Dilute)	<i>MLPH</i>	D/D	Non-dilute (does not carry dilute)
E Locus (Yellow/Red)	<i>MC1R</i>	E/E	Black
E <sup>m</sup> Locus (Melanistic Mask)	<i>MC1R</i>	E <sup>m</sup> /N	Melanistic mask (carrier)
I Locus (Intensity)	<i>MFSD12</i>	I/i	Normal intensity (carrier)
K Locus (Dominant Black)	<i>CBD103</i>	K <sup>B</sup> /K <sup>B</sup>	No agouti expression allowed
M Locus (Merle)	<i>PMEL</i>	m/m	Non merle
S Locus (White Spotting, Parti, or Piebald)	<i>MITF</i>	s <sup>P</sup> /s <sup>P</sup>	Nearly solid white, parti, or piebald

### Interpretation:

This dog carries one copy of **a<sup>t</sup>** and one copy of **a** which results in tan points and can also present as a black and tan or tricolor coat color. However, this dog's coat color is also dependent on the E, K, and B genes. The tan point coat color is only expressed if the dog is also E/E or E/e at the E locus and k<sup>Y</sup>/k<sup>Y</sup> at the K locus. This dog will pass on **a<sup>t</sup>** to 50% of its offspring and **a** to 50% of its offspring.

This dog carries one copy of one of the b 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 50% of its offspring and one copy of **b** to 50% of its offspring. This dog can produce b/b offspring if bred to a dog that is also a carrier of a b mutation (B/b or b/b). Depending on the breed, b/b dogs may be referred to as brown, chocolate, liver or red.

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.

This dog carries one copy of **E<sup>m</sup>** and one copy of **N** which results in a melanistic mask on the muzzle of the dog. However, a melanistic mask may be unrecognizable on a dog with a dark coat color. This dog will pass on **E<sup>m</sup>** to 50% of its offspring and **N** to 50% of its offspring.

This dog carries one copy of the *i* mutation and has an *I* locus genotype of **I/i** which does not result in the lightening of the light, phaeomelanin pigments that produce the dog's coat color in an *e/e* dog. This dog will pass one copy of **I** to 50% of its offspring and one copy of **i** to 50% of its offspring. This dog can produce *i/i* offspring if bred to a dog that is also a carrier of an *i* mutation (*I/i* or *i/i*).

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 **m**, the non-merle, wild-type allele of the *PMEL* gene, and, therefore, does not have a merle coat color/pattern. This dog will pass on one copy of the **m** allele to 100% of its offspring.

This dog carries two copies of **s<sup>P</sup>** which results in a nearly solid white, parti, or piebald coat color. This dog will pass on one copy of **s<sup>P</sup>** 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: At the client's request, this certificate was amended on April 13, 2021 to update the microchip number for this dog.*



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



**Casey R Carl, DVM**  
Associate Medical Director

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. These tests were developed and their performance determined by Paw Print Genetics®. This laboratory has established and verified the tests' accuracy and precision. Because all tests performed are DNA-based, rare genomic variations may interfere with the performance of some tests producing false results. If you think these 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.