

## Coat Color and Trait Certificate

<b>Call Name:</b>	Nala	<b>Laboratory #:</b>	113500
<b>Registered Name:</b>	-	<b>Registration #:</b>	-
<b>Breed:</b>	Goldendoodle	<b>Certificate Date:</b>	Jan. 14, 2019
<b>Sex:</b>	Female		
<b>DOB:</b>	April 2018		

**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
Cu Locus (Curly Hair)	<i>KRT71</i>	$Cu/Cu^C$	Wavy/Curly coat (carrier)
D Locus (Dilute)	<i>MLPH</i>	D/D	Non dilute
E Locus (Yellow/Red)	<i>MC1R</i>	e/e	Yellow/red
IC Locus (Improper Coat/Furnishings)	<i>RSP02</i>	F/IC	Furnishings (improper coat carrier)
K Locus (Dominant Black)	<i>CBD103</i>	$K^B/K^B$	No agouti expression allowed
L Locus (Long Hair/Fluffy)	<i>FGF5</i>	Lh/Lh	Longhaired
S Locus (White Spotting, Parti, or Piebald)	<i>MITF</i>	S/S	No white spotting, flash, parti, or piebald
SD Locus (Shedding)	<i>MC5R</i>	SD/SD	High shedding

**Interpretation:**

This dog carries one copy of  $a^t$  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  $k^Y/k^Y$  at the K locus. This dog will pass on  $a^t$  to 50% of its offspring and **a** to 50% of its offspring.

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 one copy of  $Cu^C$  and one copy of **Cu** which results in a wavy or curly coat. 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  $Cu^C$  on to 50% of its offspring and **Cu** to 50% 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 two copies of **e** which inhibits production of black pigment. The coat color of this dog will be yellow/red (including shades of white, cream, yellow, apricot or red). This dog will pass **e** on to 100% of its offspring.

This dog carries one copy of the mutation for improper coat (**IC**) and one copy of **F** and will therefore have furnishings (proper coat). 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 **IC** (improper coat) on to 50% of its offspring and **F** (furnishings, proper coat) to 50% of its offspring. Therefore, this dog can produce puppies with improper coat if bred with a dog that carries one copy (**F/IC**) or two copies (**IC/IC**) of the mutation for improper coat.

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 **Lh** which results in long 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 **Lh** on to 100% of its offspring.

This dog carries two copies of **S** which results in a solid coat with no white spotting, flash, parti, or piebald coat color. This dog will pass on one copy of **S** to 100% of its offspring.

This dog carries two copies of **SD** which has been associated with higher shedding. However, the overall degree of shedding for this dog is dependent on the combination of this dog's genotypes at the SD and IC loci. This dog will pass **SD** 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.



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

Standard  
by Smith

## Canine Genetic Health Certificate™

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<b>Registered Name:</b>	-	<b>Registration #:</b>	-
<b>Breed:</b>	Goldendoodle	<b>Certificate Date:</b>	Jan. 14, 2019
<b>Sex:</b>	Female		
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**This canine's DNA showed the following genotype(s):**

Disease	Gene	Genotype	Interpretation
Degenerative Myelopathy	<i>SOD1</i>	WT/WT	Normal (clear)
Ichthyosis (Golden Retriever Type)	<i>PNPLA1</i>	WT/WT	Normal (clear)
Neonatal Encephalopathy with Seizures	<i>ATF2</i>	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Golden Retriever 1	<i>SLC4A3</i>	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Golden Retriever 2	<i>TTC8</i>	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Progressive Rod-Cone Degeneration	<i>PRCD</i>	WT/WT	Normal (clear)
Von Willebrand Disease I	<i>VWF</i>	WT/WT	Normal (clear)

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

Sugardoodles

by Smith



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



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

Paw Print Genetics® performed the tests listed on this dog. See the Laboratory Report for interpretation and recommendations based on these findings. 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. 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. Genetic counseling is available at Paw Print Genetics.