

Coat Color and Trait Certificate

Call Name:	Newton	Laboratory #:	183446
Registered Name:	-	Registration #:	-
Breed:	Goldendoodle	Microchip #:	981020025678228
Sex:	Male	Certificate Date:	Aug. 13, 2020
DOB:	Feb. 2019		

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

Coat Color/Trait Test	Gene	Genotype	Interpretation
A Locus (Agouti)	<i>ASIP</i>	a/a	Bicolor/solid
B Locus (Brown)	<i>TYRP1</i>	B/b	Black coat, nose and foot pads (carries brown)
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
E ^m Locus (Melanistic Mask)	<i>MC1R</i>	N/N	No melanistic mask
IC Locus (Improper Coat/Furnishings)	<i>RSP02</i>	F/IC	Furnishings (improper coat carrier)
K Locus (Dominant Black)	<i>CBD103</i>	K ^B /k ^y	No agouti expression allowed (carrier)
L Locus (Long Hair/Fluffy)	<i>FGF5</i>	Lh/Lh	Longhaired
M Locus (Merle)	<i>PMEL</i>	m/m	Non merle
S Locus (White Spotting, Parti, or Piebald)	<i>MITF</i>	S/s ^P	Limited white spotting, flash, parti, or piebald (carrier)
SD Locus (Shedding)	<i>MC5R</i>	sd/SD	Moderate shedding

Interpretation:

This dog carries two copies of **a** and will have a solid black or bicolor coat color and no tan points. However, this dog's coat color is dependent on the E, K, and B genes. This dog will pass on **a** to 100% of its offspring.

This dog carries one copy of **B** and at least one copy of **b** at the b^c, b^d or b^s locus 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 50% of its offspring and **b** to 50% 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 two copies of **N** which does not result in a melanistic mask on the muzzle of the dog. This dog will pass on **N** 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.

This dog carries one copy of **K^B** and one copy of **k^Y** 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 genes. This dog will pass on **K^B** to 50% of its offspring and **k^Y** to 50% 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 **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 one copy of **S** and one copy of **s^P** which results in limited white spotting, flash, parti, or piebald coat color due to the co-dominance of **S** and **s^P**. This dog will pass on one copy of **S** to 50% of its offspring and one copy of **s^P** to 50% of its offspring.

This dog carries one copy of **sd** and one copy of **SD** which has been associated with moderate 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 50% of its offspring and **sd** on to 50% 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.



Helen F Smith, PhD
Assistant Laboratory Director



Casey R Carl, DVM
Associate Medical Director

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