

Coat Color and Trait Certificate

Call Name:	PHOENIX	Laboratory #:	438111
Registered Name:	IRONGATE'S MYSTIC PHOENIX	Registration #:	PR27452601
Breed:	Poodle	Microchip #:	990000006916615
Sex:	Male	Certificate Date:	March 1, 2024
DOB:	Aug. 2023		

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

Coat Color/Trait Test	Gene	Genotype	Interpretation
A Locus (Agouti)	ASIP	a ^t /a ^t	Tricolor, black and tan
A ^S Locus (Saddle Tan)	RALY	N/N	No saddle tan/creeping tan
B Locus (Brown)	TYRP1	B/b	Black coat, nose and foot pads (carries one copy of brown)
Chondrodysplasia (CDPA)	CFA18 FGF4	cd/cd	No Leg Shortening Associated with CDPA
E Locus	MC1R	E/e ¹	Black - Carrier (Yellow/Red)
K Locus (Dominant Black)	CBD103	k ^Y /k ^Y	Agouti expression allowed
S Locus (White Spotting, Parti, or Piebald)	MITF	s ^P /s ^P	Nearly solid white, parti, or piebald

Interpretation:

This dog carries two copies of **a^t** 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 100% of its offspring.

This dog carries two copies of the **N** allele, which is not associated with a saddle tan coat color. This dog's coat color is also dependent on the E, A, and K genes, among others. This dog will pass **N** to 100% 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.

Two genetic mutations are associated with shortened legs in dogs. Both mutations consist of copied sections (duplication) of the canine *FGF4* gene (called an *FGF4*-retrotransposon) that have been inserted into two aberrant locations in the genome; one in chromosome 12 (*CFA12 FGF4*; associated with CDDY and IVDD risk) and one in chromosome 18 (*CFA18 FGF4*; associated with chondrodysplasia [CDPA], but not associated with IVDD). Appropriate breeding decisions regarding dogs which have inherited the *CFA12 FGF4* mutation (WT/M or M/M) need to address both the potential loss of genetic diversity in a population which would occur if dogs with this mutation were prohibited from breeding as well as the loss of the short-legged appearance that is a defining physical characteristic for some breeds. In breeds which inherit both mutations, breeders may use genetic testing results to selectively breed for the CDPA (*CFA18 FGF4*) mutation while breeding away from the CDDY and IVDD risk (*CFA12 FGF4*) mutation to reduce IVDD risk and retain the short-legged appearance. However, the frequency of



Canine Genetic Health Certificate™

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

Disease	Gene	Genotype	Interpretation
Chondrodystrophy with Intervertebral Disc Disease Risk Factor (CDDY with IVDD)	CFA12 FGF4	WT/WT	Normal (Clear) - No CDDY or Increased IVDD Risk
Congenital Methemoglobinemia	CYB5R3	WT/WT	Normal (Clear)
Degenerative Myelopathy (Common Variant)	SOD1	WT/M	Carrier
Osteochondrodysplasia	SLC13A1	WT/WT	Normal (Clear)
Progressive Retinal Atrophy, Progressive Rod-Cone Degeneration	PRCD	WT/WT	Normal (Clear)
Progressive Retinal Atrophy, Rod-Cone Dysplasia 4	C2orf71	WT/WT	Normal (Clear)

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

Paw Print Genetics® performed the testing on the dog listed on this certificate. 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. 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 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.