Paw Print Genetics
A division of Genetic Veterinary Sciences, Inc.

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Laboratory Report

Laboratory #:	322571	**Call Name:**	Micah
Order #:	145172	**Registered Name:**	-
Ordered By:	Mary Harvey Miller	**Breed:**	French Bulldog
Ordered:	Aug. 16, 2022	**Sex:**	Male
Received:	Sept. 6, 2022	**DOB:**	July 2022
Reported:	Sept. 14, 2022	**Registration #:**	-
		Microchip #:	900111881162525

Results:

Disease	Gene	Genotype	Interpretation
Cystinuria Type 3 (Bulldog Type Risk Factor) - Variant 2	*SLC3A1*	WT/WT	Normal (clear)
Cystinuria Type 3 (Bulldog Type Risk Factor) - Variant 3	*SLC7A9*	WT/WT	Normal (clear)
Hereditary Cataracts	*HSF4*	WT/WT	Normal (clear)
Multifocal Retinopathy 1	*BEST1*	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Cone-Rod Dystrophy 4	*RPGRIP1*	WT/WT	Normal (clear)

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

Interpretation:

Molecular genetic analysis was performed for five specific mutations reported to be associated with disease in dogs. We identified two normal copies of the DNA sequences in five mutations tested. Thus, this dog is not at an increased risk for the diseases associated with these five mutations.

Recommendations:

No mutations were identified. Thus, this dog is not at an increased risk for the diseases caused by or associated with the mutations tested. Because this dog is "clear" of these mutations, this dog will only pass the normal genes on to its offspring. 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. 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
Associate Laboratory Director

Christina J Ramirez, PhD, DVM, DACVP
Medical Director

Paw Print Genetics® performed the tests listed on this dog. 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 any 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.

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Coat Color and Trait Certificate

Call Name:	Micah	**Laboratory #:**	322571
Registered Name:	-	**Registration #:**	-
Breed:	French Bulldog	**Microchip #:**	900111881162525
Sex:	Male	**Certificate Date:**	Sept. 14, 2022
DOB:	July 2022		

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

Coat Color/Trait Test	Gene	Genotype	Interpretation
A Locus (Agouti)	*ASIP*	A^y/A^y	Sable/fawn
B Locus (Brown)	*TYRP1*	B/B	Black coat, nose and foot pads (does not carry brown)
Co Locus (Cocoa, French Bulldog Type)	*HPS3*	CO/CO	Black coat, nose and foot pads (does not carry cocoa)
D Locus (Dilute)	*MLPH*	d/d	Dilute (carries two copies of dilute)
E Locus - E^m (Melanistic Mask)	*MC1R*	E^m/E^m	Melanistic mask
E Locus - e (Apricot/Cream/Red/Yellow, Common Variant Found in Many Breeds)	*MC1R*	E/E	Black
I Locus (Intensity)	*MFSD12*	I/I	Normal intensity
K Locus (Dominant Black)	*CBD103*	K^B/k^y	No agouti expression allowed (carrier)
L Locus (Long Hair/Fluffy) - Lh^1 (Common Variant Found in Many Breeds)	*FGF5*	Sh/Lh	Shorthaired (carries one copy of long hair)
L Locus (Long Hair/Fluffy) - Lh^4 (Afghan Hound, Eurasier, French Bulldog Type)	*FGF5*	Sh/Sh	Shorthaired (does not carry long hair)
M Locus (Merle)	*PMEL*	m/M	*See detailed interpretation
S Locus (White Spotting, Parti, or Piebald)	*MITF*	S/s^p	Limited white spotting, flash, parti, or piebald (carrier)

Interpretation:

This dog carries two copies of **A^y** which results in a sable/fawn coat color. However, this dog's coat color is also dependent on the E, K, and B genes. The sable/fawn 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 which allows for agouti gene expression. This dog will pass on **A^y** to 100% of its offspring.

This dog does not carry any copies of the b^a, b^c, b^d or b^s 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 100% of its offspring and cannot produce b/b dogs.