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

Coat Color and Trait Certificate

Call Name:	Macey	**Laboratory #:**	131180
Registered Name:	5 Stars macey	**Registration #:**	NP45804703
Breed:	French Bulldog	**Microchip #:**	900115000082996
Sex:	Female	**Certificate Date:**	May 24, 2019
DOB:	March 2017		

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
E Locus (Yellow/Red)	*MC1R*	E/E	Black
E^m Locus (Melanistic Mask)	*MC1R*	E^m/E^m	Melanistic mask
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 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 two copies of **E^m** 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^m** to 100% of its offspring and will produce only puppies with a melanistic mask.

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.

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.

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Canine Genetic Health Certificate™

Call Name:	Macey	**Laboratory #:**	131180
Registered Name:	5 Stars macey	**Registration #:**	NP45804703
Breed:	French Bulldog	**Microchip #:**	900115000082996
Sex:	Female	**Certificate Date:**	May 24, 2019
DOB:	March 2017		

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

Disease	Gene	Genotype	Interpretation
Degenerative Myelopathy	*SOD1*	WT/WT	Normal (clear)
Hereditary Cataracts	*HSF4*	WT/WT	Normal (clear)
Hyperuricosuria	*SLC2A9*	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)

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.

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Laboratory Report

Laboratory #:	131180	**Call Name:**	Macey
Order #:	57678	**Registered Name:**	5 Stars macey
Ordered By:	Mary Miller	**Breed:**	French Bulldog
Ordered:	April 1, 2019	**Sex:**	Female
Received:	May 13, 2019	**DOB:**	March 2017
Reported:	May 24, 2019	**Registration #:**	NP45804703
		Microchip #:	900115000082996

Results:

Disease	Gene	Genotype	Interpretation
Degenerative Myelopathy	*SOD1*	WT/WT	Normal (clear)
Hereditary Cataracts	*HSF4*	WT/WT	Normal (clear)
Hyperuricosuria	*SLC2A9*	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 the mutations tested.

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.

Christina J Ramirez, PhD, DVM, DACVP
Medical Director

Casey R Carl, DVM
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