



Canine Genetic Health Certificate™

| | | | |
|-------------------------|--------------------|--------------------------|-----------------------------|
| Call Name: | Murphy | Laboratory #: | 154631 |
| Registered Name: | RR MURPHYS LAW | Registration #: | UKCR282497 AKCSS06682307 |
| Breed: | Labrador Retriever | Certificate Date: | Nov. 26, 2019 |
| Sex: | Male | | |
| DOB: | June 2018 | | |

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

| Disease | Gene | Genotype | Interpretation |
|--|----------------|----------|----------------|
| Centronuclear Myopathy | <i>PTPLA</i> | WT/WT | Normal (clear) |
| Degenerative Myelopathy | <i>SOD1</i> | WT/WT | Normal (clear) |
| Exercise-Induced Collapse | <i>DNM1</i> | WT/WT | Normal (clear) |
| Hereditary Nasal Parakeratosis | <i>SUV39H2</i> | WT/WT | Normal (clear) |
| Progressive Retinal Atrophy, Progressive Rod-Cone Degeneration | <i>PRCD</i> | WT/WT | Normal (clear) |
| Retinal Dysplasia/Oculoskeletal Dysplasia 1 | <i>COL9A3</i> | WT/WT | Normal (clear) |
| Skeletal Dysplasia 2 | <i>COL11A2</i> | WT/WT | Normal (clear) |

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

Helen F Smith, PhD
Assistant Laboratory Director

Christina J Ramirez, PhD, DVM, DACVP
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.

Coat Color and Trait Certificate

| | | | |
|-------------------------|--------------------|--------------------------|-----------------------------|
| Call Name: | Murphy | Laboratory #: | 154631 |
| Registered Name: | RR MURPHYS LAW | Registration #: | UKCR282497 AKCSS06682307 |
| Breed: | Labrador Retriever | Certificate Date: | Dec. 29, 2021 |
| Sex: | Male | | |
| DOB: | June 2018 | | |

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

| Coat Color/Trait Test | Gene | Genotype | Interpretation |
|---|--------------|----------|--|
| B Locus (Brown) | <i>TYRP1</i> | B/b | Black coat, nose and foot pads (carries brown) |
| D Locus (Dilute) | <i>MLPH</i> | D/D | Non dilute |
| E Locus (Apricot/Yellow/Red) - e (Common Variant Found in Many Breeds) | <i>MC1R</i> | E/e | Black (carries yellow/red) |

Interpretation:

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 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 one copy of **E** and one copy 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 **E** on to 50% of its offspring and **e** to 50% of its offspring, which can produce a yellow/red coat (including shades of white, cream, yellow, apricot or red) if inherited with another copy of **e**.

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.



Blake C Ballif, PhD
Laboratory & Scientific 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.