

## LABRADOR RETRIEVER GENETIC HEALTH PANEL TEST REPORT

<b>Provided Information:</b> <b>Name:</b> GREAT LAKES BELLE <b>Registration:</b> SS07832705	<b>Case:</b> <b>NCD227497</b> <b>Date Received:</b> 25-Sep-2023 <b>Report Issue Date:</b> 04-Oct-2023 <b>Report ID:</b> 1629-0170-7042-9073 <p style="text-align: center; font-size: small;">Verify report at <a href="http://www.vgl.ucdavis.edu/verify">www.vgl.ucdavis.edu/verify</a></p>
<b>DOB:</b> 08/20/2018 <b>Sex:</b> Female <b>Breed:</b> Labrador Retriever <b>Microchip:</b> 956000010035613 <b>Color:</b> Yellow	
<b>Call Name:</b> Bee	

### RESULT

### INTERPRETATION

Condition	Result	Interpretation
Centronuclear Myopathy (CNM)	N/N	No copies of the CNM mutation detected. Dog is normal.
Congenital Myasthenic Syndrome (CMS)	N/N	No copies of the CMS mutation detected. Dog is normal.
Copper Toxicosis	<b>ATP7A</b> N/N	No copies of the ATP7A and ATP7B variants.
	<b>ATP7B</b> N/N	
Cystinuria Type I-A	N/N	No copies of the cystinuria type I-A mutation detected. Dog is normal.
Exercise Induced Collapse (EIC)	N/N	No copies of the EIC mutation detected. Dog is normal.
Degenerative Myelopathy (DM)	N/N	No copies of the DM mutation.
Hereditary Nasal Parakeratosis (HNPK)	N/N	No copies of the HNPK mutation detected. Dog is normal.
Hyperuricosuria	N/N	No copies of the hyperuricosuria mutation detected. Dog is normal.
Narcolepsy	N/N	Normal. Dog does not carry the Labrador narcolepsy associated variant.
Pyruvate Kinase Deficiency (PKDef)	N/N	No copies of the PKDef mutation. Dog is normal.
Stargardt Disease	N/N	Normal. No copies of the Labrador Retriever Stargardt disease variant detected.
Skeletal Dysplasia 2 (SD2)	N/N	No copies of the SD2 mutation detected. Dog is normal.
X-Linked Myotubular Myopathy (XLMTM)	N/N	No copies of the MTM1 mutation detected. Female is normal.
Progressive Rod-Cone Degeneration (PRCD)	N/N	Normal. Dog does not have the variant associated with PRCD.
DILUTE (D LOCUS)	D/D	No known dilution variants present.

## Canine Genetic Health Certificate™

<b>Call Name:</b>	Belle	<b>Laboratory #:</b>	116315
<b>Registered Name:</b>	Great Lakes Belle	<b>Registration #:</b>	SS07832705
<b>Breed:</b>	Labrador Retriever	<b>Microchip #:</b>	956000010035613
<b>Sex:</b>	Female	<b>Certificate Date:</b>	Jan. 9, 2019
<b>DOB:</b>	Aug. 2018		

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

Disease	Gene	Genotype	Interpretation
Centronuclear Myopathy	<i>PTPLA</i>	WT/WT	Normal (clear)
Copper Toxicosis (Labrador Retriever Type) ATP7A	<i>ATP7A</i>	WT/WT	Normal/Clear Female
Copper Toxicosis (Labrador Retriever Type) ATP7B	<i>ATP7B</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)
Pyruvate Kinase Deficiency (Labrador Retriever Type)	<i>PKLR</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)



**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.



## Coat Color and Trait Certificate

<b>Call Name:</b>	Belle	<b>Laboratory #:</b>	116315
<b>Registered Name:</b>	Great Lakes Belle	<b>Registration #:</b>	SS07832705
<b>Breed:</b>	Labrador Retriever	<b>Microchip #:</b>	956000010035613
<b>Sex:</b>	Female	<b>Certificate Date:</b>	Jan. 9, 2019
<b>DOB:</b>	Aug. 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 or b/b	Carries brown and may have brown or black coat, nose and foot pads
E Locus (Yellow/Red)	<i>MC1R</i>	e/e	Yellow/red

### Interpretation:

The overall B locus genotype for a dog is determined by the combination of genotypes present at the  $b^c$ ,  $b^d$ , and  $b^s$  loci. The  $b^c$ ,  $b^d$ , and  $b^s$  variants confer brown when at least one of these DNA changes is present on both genes of the dog at the B locus. This dog carries two copies of **B** at the  $b^s$  locus. In addition, this dog carries one copy of **B** and one copy of **b** at both the  $b^c$  and  $b^d$  loci. The presence of both these variants on a single copy of the gene cannot be excluded. Thus, due to the particular combination of variants detected, the overall B locus genotype of this dog is **B/b** or **b/b** and cannot be determined without additional testing of parental samples. Therefore, this dog carries brown and may have brown or black coat, nose and foot pads.

If the  $b^c$  and  $b^d$  variants each occur on separate copies of the B locus, the dog will be brown (**b/b**). However, if these variants occur on the same copy of the gene, the dog will be black (**B/b**). Therefore, the final B locus genotype for this dog can be inferred by evaluating the color of this dog's nose. If this dog's nose is brown, the final B locus genotype of this dog is **b/b** and this dog will pass on **b** to 100% of its offspring. If this dog's nose is black, the final B locus genotype of this dog is **B/b** and this dog will pass on **b** to 50% of its offspring. If this dog is B/b it can produce offspring with a black or brown coat, nose and foot pads. However, this dog's coat color is also dependent on the E, K, and A genes.

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.

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.