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

220 E. Rowan, Suite 220
Spokane, Washington 99207
www.pawprintgenetics.com
(509) 483-5950

Laboratory Report

**** Amended Report ****

Laboratory #:	123870	**Call Name:**	Dapper Jr
Order #:	60546	**Registered Name:**	Ch. Empress Your're Looking Very Dapper Too JH JH
Ordered By:	Dawn Nacey	**Breed:**	Labrador Retriever
Ordered:	May 26, 2019	**Sex:**	Male
Received:	May 28, 2019	**DOB:**	Jan. 2018
Reported:	June 4, 2019	**Registration #:**	ss04159201
Amended:	Oct. 30, 2023	**Microchip #:**	956000009952145

Results:

Disease	Gene	Genotype	Interpretation
Centronuclear Myopathy	*PTPLA*	WT/WT	Normal (Clear)
Congenital Myasthenic Syndrome (Labrador Retriever Type)	*COLQ*	WT/WT	Normal (Clear)
Copper Toxicosis (Labrador Retriever Type) ATP7A	*ATP7A*	M/Y	Carrier Male
Copper Toxicosis (Labrador Retriever Type) ATP7B	*ATP7B*	WT/WT	Normal (Clear)
Degenerative Myelopathy (Common Variant)	*SOD1*	WT/WT	Normal (Clear)
Exercise-Induced Collapse	*DNM1*	WT/WT	Normal (Clear)
Hereditary Nasal Parakeratosis (Labrador Retriever Type)	*SUV39H2*	WT/WT	Normal (Clear)
Progressive Retinal Atrophy, Progressive Rod-Cone Degeneration	*PRCD*	WT/WT	Normal (Clear)
Retinal Dysplasia/Oculoskeletal Dysplasia 1	*COL9A3*	WT/WT	Normal (Clear)
Skeletal Dysplasia 2	*COL11A2*	WT/WT	Normal (Clear)

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

Interpretation:

Molecular genetic analysis was performed for 10 specific mutations reported to be associated with disease in dogs (nine deleterious mutations and one protective mutation). We identified two normal copies of the DNA sequences in the nine deleterious mutations tested. We identified one mutant copy of the DNA sequence for *ATP7A* on the X chromosome. Thus, this dog carries one copy of the protective mutation for Copper Toxicosis (Labrador Retriever Type) ATP7A.

Recommendations:

No deleterious 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.

This dog was also tested for a genetic mutation of the canine *ATP7A* gene which partially protects against copper toxicosis in dogs that have inherited the *ATP7B* mutation described above. This dog carries one copy of the *ATP7A* gene mutation. The *ATP7A* gene mutation is more effective at decreasing the risk of copper toxicosis in male dogs than females. However, since multiple factors (both genetic and environmental) play a role in causing copper toxicosis, the *ATP7A* mutation is not completely protective in either sex. Note: The *ATP7A* mutation is located on the X chromosome. Since males only have a single X chromosome they can only inherit a single copy of this mutation. 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.

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.

NOTE: The following fields were adjusted at the client's request on Oct 30, 2023: Registration ID, Registered Name, Microchip Id

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Laboratory Report

**** Amended Report ****

Laboratory #:	123870	**Call Name:**	Dapper Jr
Order #:	112758	**Registered Name:**	Ch. Empress Your're Looking Very Dapper Too JH JH
Ordered By:	Dawn Nacey	**Breed:**	Labrador Retriever
Ordered:	July 7, 2021	**Sex:**	Male
Received:	Aug. 20, 2021	**DOB:**	Jan. 2018
Reported:	Aug. 30, 2021	**Registration #:**	ss04159201
Amended:	Oct. 30, 2023	**Microchip #:**	956000009952145

Results:

Disease	Gene	Genotype	Interpretation
Stargardt Disease	*ABCA4*	WT/WT	Normal (Clear)

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

Interpretation:

Molecular genetic analysis was performed for a specific mutation reported to be associated with Stargardt Disease in dogs. We identified two normal copies of the DNA sequences in the *ABCA4* gene tested. Thus, this dog is not at an increased risk for Stargardt Disease.

Recommendations:

No mutations were identified. Thus, this dog is not at an increased risk for the disease caused by or associated with the mutation tested. Because this dog is "clear" of this mutation, this dog will only pass the normal gene on to its offspring. Normal results do not exclude inherited mutations not tested in this gene 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.

NOTE: The following fields were adjusted at the client's request on Oct 30, 2023: Registration ID, Registered Name, Microchip Id

Coat Color and Trait Certificate

Call Name:	Dapper Jr	**Laboratory #:**	123870
Registered Name:	Ch. Empress Your're Looking Very Dapper Too JH JH	**Registration #:**	ss04159201
		Microchip #:	956000009952145
Breed:	Labrador Retriever	**Certificate Date:**	Oct. 30, 2023
Sex:	Male		
DOB:	Jan. 2018		

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

Coat Color/Trait Test	Gene	Genotype	Interpretation
B Locus (Brown) - b^a, b^c, b^d, b^s	*TYRP1*	B/B	Black coat, nose and foot pads

Interpretation:

This dog carries two copies of **B** at all three of the b^c, b^d and b^s loci 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 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.

**Note: The preliminary result for B Locus was reported to the client via phone on March 06, 2019.*

NOTE: The following fields were adjusted at the client's request on Oct 30, 2023: Registration ID, Registered Name, Microchip Id

Orivet
POWERED BY PAW PRINT GENETICS

Single Report

Animal Name: Dap Jr.

Owner:
Dawn Nacey
Membership Number : Not assigned
Member Body/Breed Club: Not assigned

Approved Collection Method: No

Orivet
POWERED BY PAW PRINT GENETICS

Single Report

Scan to authenticate this Report online

Owner's details

Name:	Dawn Nacey

Animal's Details

Registered Name :	Empress You're Looking Very Dapper Too
Pet Name :	Dap Jr.
Registration Number :	SS041592/01
Breed: :	Labrador Retriever
Microchip Number :	956000009952145
Sex: :	Intact Male
Date of Birth :	14th Jan 2018
Colour :	yellow

Sample Collection Details

Case Number :	19221591
Collected By :	
Approved Collection :	No
Sample Type :	SWAB

Test Details

Test Requested :	Macular Corneal Dystrophy (Labrador Type)
Pet Name :	Dap Jr.
Date of Test :	24th Dec 2019

Authorisation

Sample with Lab ID Number 19221591 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported:

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Orivet Genetic Analyst

Orivet
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Single Report

Scan to authenticate this Report online

Animal's Details

Registered Name :	**Empress You're Looking Very Dapper Too**
Pet Name :	**Dap Jr.**
Registration Number :	**SS041592/01**
Breed: :	**Labrador Retriever**
Microchip Number :	**956000009952145**
Sex: :	**Intact Male**
Date of Birth :	**14th Jan 2018**
Colour :	**yellow**

Sample with Lab ID Number 19221591 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : MACULAR CORNEAL DYSTROPHY (LABRADOR TYPE)

Result : NORMAL (N/N) - [NO VARIANT DETECTED] [1]

Gene : CHST6

Variant Detected : chr5:75279762 (canFam3): C>A

Interpretation: DNA analysis indicates that this animal is Normal (Clear) at the tested locus. No copies of the disease-associated variant (mutation) were detected. The genotype result is described as Negative, NN, –/–, "wild type (WT/WT)", or homozygous negative. Implications: This dog does not have the genetic mutation associated with the condition. It will not develop the associated disease due to this mutation. It cannot pass on the disease-causing variant to its offspring. Summary: The animal is genetically clear for the tested condition.

Clarification of Genetic Testing

Genetic inheritance is not a simple process, and may be complicated by several factors. Below is some information to help clarify these factors.

1) Some diseases may demonstrate signs of what Geneticists call "genetic heterogeneity". This is a term to describe an apparently single condition that may be caused by more than one mutation and/or gene

2) It is possible that there exists more than one disease that presents in a similar fashion and segregates in a single breed. These conditions - although phenotypically similar - may be caused by separate mutations and/or genes.

3) It is possible that the disease affecting your breed may be what Geneticists call an "oligogenic disease". This is a term to describe the existence of additional genes that may modify the action of a dominant gene associated with a disease. These modifier genes may for example give rise to a variable age of onset for a particular condition, or affect the penetrance of a particular mutation such that some animals may never develop the condition.

The range of hereditary diseases continues to increase and we see some that are relatively benign and others that can cause severe and/or fatal disease. Diagnosis of any disease should be based on pedigree history, clinical signs, history (incidence) of the disease and the specific genetic test for the disease. Penetrance of a disease will always vary not only from breed to breed but within a breed, and will vary with different diseases. Factors that influence penetrance are genetics, nutrition and environment. Although genetic testing should be a priority for breeders, we strongly recommend that temperament and phenotype also be considered when breeding.