KODA

Veterinary Report by Embark

embarkvet.com

Test Date: January 22nd, 2020

Customer-supplied information

Owner Name: Callie Brown

Dog Name: Koda

Sex: Male (intact)

Date of birth: 12/31/19

Breed type: n/a

Breed: Goldendoodle

Breed registration: n/a

Microchip: n/a

Genetic summary

Genetic breed identification:
Goldendoodle

Breed ancestry:

- Poodle (Standard): 48.1%
- Golden Retriever: 33.3%
- Poodle (Small): 18.6%

Predicted adult weight: **47 lbs**
Calculated from 17 size genes.

Genetic age: **26 human years**

Human equivalent age based on size, date of birth provided, and other factors

Karyogram (Chromosome painting)

Clinical Tools

These clinical genetic tools can inform clinical decisions and diagnoses. These tools do not predict increased risk for disease.

Alanine Aminotransferase Activity (GPT)

✅ Koda's baseline ALT level is likely to be Normal

What is Alanine Aminotransferase Activity?
Alanine aminotransferase (ALT) is a clinical tool that can be used by veterinarians to better monitor liver health. This result is not associated with liver disease. ALT is one of several values veterinarians measure on routine blood work to evaluate the liver. It is a naturally occurring enzyme located in liver cells that helps break down protein. When the liver is damaged or inflamed, ALT is released into the bloodstream.

How vets diagnose this condition
Genetic testing is the only way to provide your veterinarian with this clinical tool.

How this condition is treated
Veterinarians may recommend blood work to establish a baseline ALT value for healthy dogs with one or two copies of this variant.

Health Report

How to interpret Koda's genetic health results:
If Koda inherited any of the variants that we tested, they will be listed at the top of the Health Report section, along with a description of how to interpret this result. We also include all of the variants that we tested Koda for that we did not detect the risk variant for.

A genetic test is not a diagnosis
This genetic test does not diagnose a disease. Please talk to your vet about your dog's genetic results, or if you think that your pet may have a health condition or disease.

⊙ **Koda inherited one variant that you should learn more about.**

Ichthyosis, ICH1	⊙

Breed-Relevant Genetic Conditions	13 variants not detected	✓
Additional Genetic Conditions	181 variants not detected	✓

Health Report

Ichthyosis, ICH1 (PNPLA1, Golden Retriever Variant)

○ GDF's Stanley Bear inherited one copy of the
variant we tested

What does this result mean?
This result should not impact Koda's health but it could have consequences for siblings or other related dogs if they inherited two copies of the variant. We recommend discussing this result with their owners or breeders if you are in contact.

Impact on Breeding
Your dog carries this variant and will pass it on to ~50% of his offspring.

What is Ichthyosis, ICH1?
This skin disorder gets its name from the thick, darkly pigmented scales of skin ("ichthys" is Greek for "fish") that affected dogs display on their noses, paw pads, and muzzles.

When signs & symptoms develop in affected dogs
As puppies, affected dogs can show signs of scaling. This disease tends to worsen with age.

How vets diagnose this condition
Examining the characteristic lesions is the first step in diagnosing Ichthyosis. Confirmatory genetic testing and/or skin biopsies can also be performed.

How this condition is treated
There is no definitive treatment for ichthyosis: typically, ichthyotic dogs are maintained on a continuous treatment of mild anti-dandruff shampoos and moisturizing rinses. This is a chronic and frustrating condition to manage.

Actions to take if your dog is affected
• Following your veterinarian's advice on skin care and nutrition is the best way to manage ichthyosis.

Breed-Relevant Conditions Tested

✅ **Koda did not have the variants that we tested for, that are relevant to his breeds:**

- ✅ Von Willebrand Disease Type I, Type I vWD (VWF)

- ✅ Progressive Retinal Atrophy, prcd (PRCD Exon 1)

- ✅ Golden Retriever Progressive Retinal Atrophy 1, GR-PRA1 (SLC4A3)

- ✅ Golden Retriever Progressive Retinal Atrophy 2, GR-PRA2 (TTC8)

- ✅ Neuronal Ceroid Lipofuscinosis 5, NCL 5 (CLN5 Exon 4 Deletion, Golden Retriever Variant)

- ✅ GM2 Gangliosidosis (HEXB, Poodle Variant)

- ✅ Degenerative Myelopathy, DM (SOD1A)

- ✅ Neonatal Encephalopathy with Seizures, NEWS (ATF2)

- ✅ Muscular Dystrophy (DMD, Golden Retriever Variant)

- ✅ Dystrophic Epidermolysis Bullosa (COL7A1, Golden Retriever Variant)

- ✅ Osteogenesis Imperfecta, Brittle Bone Disease (COL1A1, Golden Retriever Variant)

- ✅ Osteochondrodysplasia, Skeletal Dwarfism (SLC13A1, Poodle Variant)

- ✅ Chondrodystrophy and Intervertebral Disc Disease, CDDY/IVDD, Type I IVDD (FGF4 retrogene - CFA12)

Explore the genetics behind your dog's appearance and size.

Coat Color

E Locus (MC1R)	No dark mask or grizzle (Ee) (/members/results/traits-category/coat-color#MC1R)
K Locus (CBD103)	More likely to have a mostly solid black or brown coat ($K^B k^y$) (/members/results/traits-category/coat-color#CBD103_K)
A Locus (ASIP)	Not expressed ($a^t a$) (/members/results/traits-category/coat-color#ASIP)
D Locus (MLPH)	Dark areas of hair and skin are not lightened (DD) (/members/results/traits-category/coat-color#MLPH_D)
B Locus (TYRP1)	Black or gray hair and skin (BB) (/members/results/traits-category/coat-color#TYRP1)
Saddle Tan (RALY)	Not expressed (NI) (/members/results/traits-category/coat-color#RALY_Saddle_trait_gene)
S Locus (MITF)	Likely to have little to no white in coat (SS) (/members/results/traits-category/coat-color#MITF)
M Locus (PMEL)	No merle alleles (mm) (/members/results/traits-category/coat-color#PMEL_Merle)
H Locus (Harlequin)	No harlequin alleles (hh) (/members/results/traits-category/coat-color#PSMB7_H)

Other Coat Traits

Furnishings (RSPO2) LINKAGE	Likely furnished (mustache, beard, and/or eyebrows) (FF) (/members/results/traits-category/other-coat-traits#RSPO2_moustache)
Coat Length (FGF5)	Likely long coat (TT) (/members/results/traits-category/other-coat-traits#FGF5)
Shedding (MC5R)	Likely light shedding (CT) (/members/results/traits-category/other-coat-traits#MC5R_shedding)

Coat Texture (KRT71)	Likely wavy coat (CT) (/members/results/traits-category/other-coat-traits#KRT71_CurlyCoat)
Hairlessness (FOXI3) LINKAGE	Very unlikely to be hairless (NN) (/members/results/traits-category/other-coat-traits#FOXI3_Hairless_Linkage)
Hairlessness (SGK3)	Very unlikely to be hairless (NN) (/members/results/traits-category/other-coat-traits#SGK3_Hairless)
Oculocutaneous Albinism Type 2 (SLC45A2) LINKAGE	Likely not albino (NN) (/members/results/traits-category/other-coat-traits#SLC45A2_oculocutaneous_albinism_type_2_doberman_Z_factor)

🐕 Other Body Features

Muzzle Length (BMP3)	Likely medium or long muzzle (CC) (/members/results/traits-category/other-body-features#BMP3_Muzzle)
Tail Length (T)	Likely normal-length tail (CC) (/members/results/traits-category/other-body-features#T_C189G_Bobtail)
Hind Dewclaws (LMBR1)	Unlikely to have hind dew claws (CC) (/members/results/traits-category/other-body-features#LMBR1_Claw)
Blue Eye Color (ALX4) LINKAGE	Less likely to have blue eyes (NN) (/members/results/traits-category/other-body-features#ALX4_Blue_Eyes_Linkage)
Back Muscling & Bulk, Large Breed (ACSL4)	Likely normal muscling (CC) (/members/results/traits-category/other-body-features#ACSL4_Bulky_trait_gene)

📏 Body Size

Body Size (IGF1)	Intermediate (NI) (/members/results/traits-category/body-size#IGF1_size)
Body Size (IGFR1)	Larger (GG) (/members/results/traits-category/body-size#IGFR1_toy)
Body Size (STC2)	Intermediate (TA) (/members/results/traits-category/body-size#STC2_size)
Body Size (GHR - E191K)	Intermediate (GA) (/members/results/traits-category/body-size#GHR_size1)
Body Size (GHR - P177L)	Larger (CC) (/members/results/traits-category/body-size#GHR_size2)

Performance

Altitude Adaptation (EPAS1)

Normal altitude tolerance (GG) (/members/results/traits-category/performance#EPAS1_altitude)

Appetite (POMC) LINKAGE

Normal food motivation (NN) (/members/results/traits-category/performance#POMC_appetite_linkage)