



“LUA”

KAILUA



DNA Test Report

Test Date: September 22nd, 2023

embk.me/brookie48

BREED ANCESTRY



GENETIC STATS

Predicted adult weight: **56 lbs**

Life stage: **Puppy**

Based on your dog's date of birth provided.

TEST DETAILS

Kit number: EM-57304466

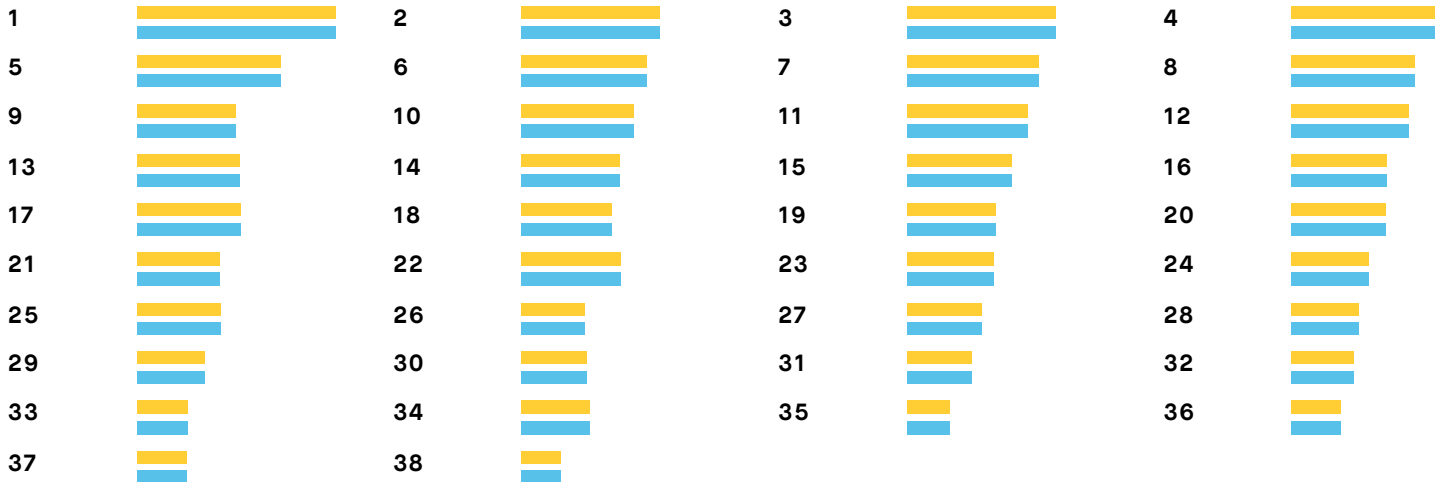
Swab number: 31220612402964

BREED ANCESTRY BY CHROMOSOME

Our advanced test identifies from where Lua inherited every part of the chromosome pairs in her genome.

Breed colors:

Border Collie Poodle (Standard)





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BORDER COLLIE



Fun Fact

Border Collies are known for possessing an incredibly intense stare used to intimidate livestock.

The Border Collie was bred in the border country between England and Scotland as a herding dog to control sheep. They were highly sought after dogs by local shepherds, who were fond of their energetic and intelligent nature. Sheepdog trials began in the late 1800s, in which this breed of sheepdog impressed and was bred further, developing the Border Collie we recognize today. Today the Border Collie is considered one of, if not the, best sheepherding dogs. The AKC recognized the Border Collie as an official breed in 1995. Border Collies have a high stamina level, matched by their desire to be kept busy. While being a loyal companion dog, the Border Collie mainly thrives on activity. If not given sufficient exercise, Border Collies can be difficult house dogs, directing their energy on less productive activities such as chasing anything that moves or digging. This work-oriented breed requires a high level of both physical and mental stimulation. Border Collies generally have a black and white double coat that sheds moderately. As you can imagine, this breed excels at many sports including obedience, agility and tracking. The Border Collie ranks as the 38th most popular breed.



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POODLE (STANDARD)



The Standard Poodle is a popular, water-loving dog used for centuries as a bird dog and popular pet. Poodles were established in Germany by the 15th century. Oddly enough, they are the national dog breed of France, and they were the most popular breed of dog in the United States throughout the 1960s and 70s. They're still quite popular today, owing to their intelligence, trainability, and non-shedding coats. Although well-known for their fancy fur, they're one of the most intelligent breeds of dog and require a lot of exercise and stimulation.

Fun Fact

From 1989 to 1991, John Suter raced a team of Poodles in the Iditarod. Although his teams placed in the back half of the pack, he managed to win \$2,000 in prize money before retiring his poodle team. The Iditarod has since changed its rules to specify that only northern dog breeds can compete.



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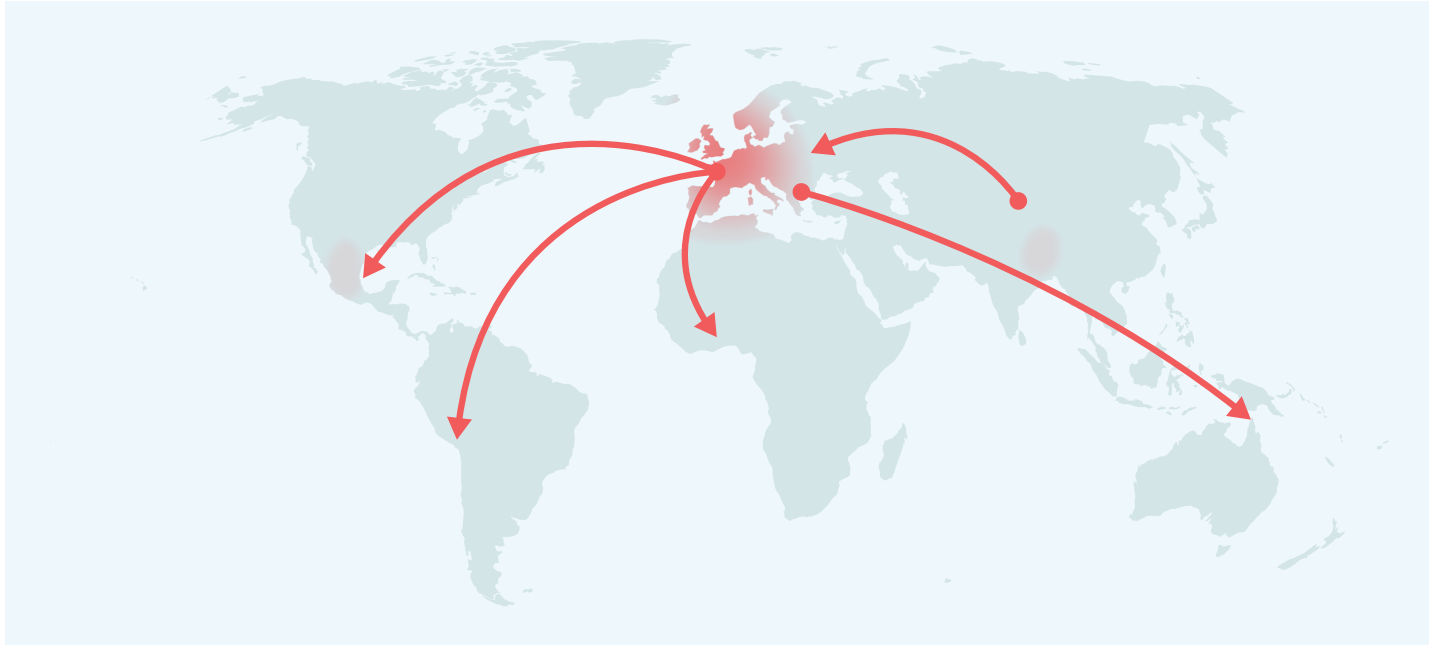


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MATERNAL LINE



Through Lua’s mitochondrial DNA we can trace her mother’s ancestry back to where dogs and people first became friends. This map helps you visualize the routes that her ancestors took to your home. Their story is described below the map.

HAPLOGROUP: B1

B1 is the second most common maternal lineage in breeds of European or American origin. It is the female line of the majority of Golden Retrievers, Basset Hounds, and Shih Tzus, and about half of Beagles, Pekingese and Toy Poodles. This lineage is also somewhat common among village dogs that carry distinct ancestry from these breeds. We know this is a result of B1 dogs being common amongst the European dogs that their conquering owners brought around the world, because nowhere on earth is it a very common lineage in village dogs. It even enables us to trace the path of (human) colonization: Because most Bichons are B1 and Bichons are popular in Spanish culture, B1 is now fairly common among village dogs in Latin America.

HAPLOTYPE: B84

Part of the large B1 haplogroup, this haplotype occurs most frequently in Golden Retrievers, Beagles, and Staffordshire Terriers.



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TRAITS: COAT COLOR

TRAIT

RESULT

E Locus (MC1R)

The E Locus determines if and where a dog can produce dark (black or brown) hair. Dogs with two copies of the recessive **e** allele do not produce dark hairs at all, and will be “red” over their entire body. The shade of red, which can range from a deep copper to yellow/gold to cream, is dependent on other genetic factors including the Intensity loci. In addition to determining if a dog can develop dark hairs at all, the E Locus can give a dog a black “mask” or “widow’s peak,” unless the dog has overriding coat color genetic factors. Dogs with one or two copies of the **Em** allele usually have a melanistic mask (dark facial hair as commonly seen in the German Shepherd and Pug). Dogs with no copies of **Em** but one or two copies of the **Eg** allele usually have a melanistic “widow’s peak” (dark forehead hair as commonly seen in the Afghan Hound and Borzoi, where it is called either “grizzle” or “domino”).

Can have a melanistic mask (E^mE)

K Locus (CBD103)

The K Locus **K^B** allele “overrides” the A Locus, meaning that it prevents the A Locus genotype from affecting coat color. For this reason, the **K^B** allele is referred to as the “dominant black” allele. As a result, dogs with at least one **K^B** allele will usually have solid black or brown coats (or red/cream coats if they are **ee** at the E Locus) regardless of their genotype at the A Locus, although several other genes could impact the dog’s coat and cause other patterns, such as white spotting. Dogs with the **k^Yk^Y** genotype will show a coat color pattern based on the genotype they have at the A Locus. Dogs who test as **K^Bk^Y** may be brindle rather than black or brown.

More likely to have a mostly solid black or brown coat (K^Bk^Y)



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TRAITS: COAT COLOR (CONTINUED)

TRAIT	RESULT
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Intensity Loci LINKAGE

Areas of a dog's coat where dark (black or brown) pigment is not expressed either contain red/yellow pigment, or no pigment at all. Five locations across five chromosomes explain approximately 70% of red pigmentation "intensity" variation across all dogs. Dogs with a result of **Intense Red Pigmentation** will likely have deep red hair like an Irish Setter or "apricot" hair like some Poodles, dogs with a result of **Intermediate Red Pigmentation** will likely have tan or yellow hair like a Soft-Coated Wheaten Terrier, and dogs with **Dilute Red Pigmentation** will likely have cream or white hair like a Samoyed. Because the mutations we test may not directly cause differences in red pigmentation intensity, we consider this to be a linkage test.

No impact on coat pattern (Intermediate Red Pigmentation)

A Locus (ASIP)

The A Locus controls switching between black and red pigment in hair cells, but it will only be expressed in dogs that are not **ee** at the E Locus and are **k^Yk^Y** at the K Locus. Sable (also called "Fawn") dogs have a mostly or entirely red coat with some interspersed black hairs. Agouti (also called "Wolf Sable") dogs have red hairs with black tips, mostly on their head and back. Black and tan dogs are mostly black or brown with lighter patches on their cheeks, eyebrows, chest, and legs. Recessive black dogs have solid-colored black or brown coats.

Not expressed (a⁺a⁺)

D Locus (MLPH)

The D locus result that we report is determined by two different genetic variants that can work together to cause diluted pigmentation. These are the common **d** allele, also known as "**d1**", and a less common allele known as "**d2**". Dogs with two **d** alleles, regardless of which variant, will have all black pigment lightened ("diluted") to gray, or brown pigment lightened to lighter brown in their hair, skin, and sometimes eyes. There are many breed-specific names for these dilute colors, such as "blue", "charcoal", "fawn", "silver", and "Isabella". Note that in certain breeds, dilute dogs have a higher incidence of Color Dilution Alopecia. Dogs with one **d** allele will not be dilute, but can pass the **d** allele on to their puppies. To view your dog's **d1** and **d2** test results, click the "SEE DETAILS" link in the upper right hand corner of the "Base Coat Color" section of the Traits page, and then click the "VIEW SUBLOCUS RESULTS" link at the bottom of the page.

Dark areas of hair and skin are not lightened (DD)



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TRAITS: COAT COLOR (CONTINUED)

TRAIT	RESULT
Cocoa (HPS3) Dogs with the coco genotype will produce dark brown pigment instead of black in both their hair and skin. Dogs with the Nco genotype will produce black pigment, but can pass the co allele on to their puppies. Dogs that have the coco genotype as well as the bb genotype at the B locus are generally a lighter brown than dogs that have the Bb or BB genotypes at the B locus.	No co alleles, not expressed (NN)
B Locus (TYRP1) Dogs with two copies of the b allele produce brown pigment instead of black in both their hair and skin. Dogs with one copy of the b allele will produce black pigment, but can pass the b allele on to their puppies. E Locus ee dogs that carry two b alleles will have red or cream coats, but have brown noses, eye rims, and footpads (sometimes referred to as "Dudley Nose" in Labrador Retrievers). "Liver" or "chocolate" is the preferred color term for brown in most breeds; in the Doberman Pinscher it is referred to as "red".	Brown hair and skin (bb)
Saddle Tan (RALY) The "Saddle Tan" pattern causes the black hairs to recede into a "saddle" shape on the back, leaving a tan face, legs, and belly, as a dog ages. The Saddle Tan pattern is characteristic of breeds like the Corgi, Beagle, and German Shepherd. Dogs that have the II genotype at this locus are more likely to be mostly black with tan points on the eyebrows, muzzle, and legs as commonly seen in the Doberman Pinscher and the Rottweiler. This gene modifies the A Locus a^t allele, so dogs that do not express a^t are not influenced by this gene.	Not expressed (II)
S Locus (MITF) The S Locus determines white spotting and pigment distribution. MITF controls where pigment is produced, and an insertion in the MITF gene causes a loss of pigment in the coat and skin, resulting in white hair and/or pink skin. Dogs with two copies of this variant will likely have breed-dependent white patterning, with a nearly white, parti, or piebald coat. Dogs with one copy of this variant will have more limited white spotting and may be considered flash, parti or piebald. This MITF variant does not explain all white spotting patterns in dogs and other variants are currently being researched. Some dogs may have small amounts of white on the paws, chest, face, or tail regardless of their S Locus genotype.	Likely to have little to no white in coat (SS)



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TRAITS: COAT COLOR (CONTINUED)

TRAIT RESULT

M Locus (PMEL)

Merle coat patterning is common to several dog breeds including the Australian Shepherd, Catahoula Leopard Dog, and Shetland Sheepdog, among many others. Merle arises from an unstable SINE insertion (which we term the "M*" allele) that disrupts activity of the pigmentary gene PMEL, leading to mottled or patchy coat color. Dogs with an **M*m** result are likely to be phenotypically merle or could be "non-expressing" merle, meaning that the merle pattern is very subtle or not at all evident in their coat. Dogs with an **M*M*** result are likely to be phenotypically merle or double merle. Dogs with an **mm** result have no merle alleles and are unlikely to have a merle coat pattern.

One merle allele; may express merle (M*m)

Note: This locus includes several alleles. At the time this dog was genotyped Embark we could not distinguish all of the possible alleles.

Note that Embark does not currently distinguish between the recently described cryptic, atypical, atypical+, classic, and harlequin merle alleles. Our merle test only detects the presence, but not the length of the SINE insertion. We do not recommend making breeding decisions on this result alone. Please pursue further testing for allelic distinction prior to breeding decisions.

R Locus (USH2A) LINKAGE

The R Locus regulates the presence or absence of the roan coat color pattern. Partial duplication of the USH2A gene is strongly associated with this coat pattern. Dogs with at least one **R** allele will likely have roaning on otherwise uniformly unpigmented white areas. Roan appears in white areas controlled by the S Locus but not in other white or cream areas created by other loci, such as the E Locus with **ee** along with Dilute Red Pigmentation by I Locus (for example, in Samoyeds). Mechanisms for controlling the extent of roaning are currently unknown, and roaning can appear in a uniform or non-uniform pattern. Further, non-uniform roaning may appear as ticked, and not obviously roan. The roan pattern can appear with or without ticking.

Likely no impact on coat pattern (rr)

H Locus (Harlequin)

This pattern is recognized in Great Danes and causes dogs to have a white coat with patches of darker pigment. A dog with an **Hh** result will be harlequin if they are also **M*m** or **M*M*** at the M Locus and are not **ee** at the E locus. Dogs with a result of **hh** will not be harlequin. This trait is thought to be homozygous lethal; a living dog with an **HH** genotype has never been found.

No harlequin alleles (hh)



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TRAITS: OTHER COAT TRAITS

TRAIT	RESULT
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Furnishings (RSPO2) LINKAGE

Dogs with one or two copies of the **F** allele have “furnishings”: the mustache, beard, and eyebrows characteristic of breeds like the Schnauzer, Scottish Terrier, and Wire Haired Dachshund. A dog with two **I** alleles will not have furnishings, which is sometimes called an “improper coat” in breeds where furnishings are part of the breed standard. The mutation is a genetic insertion which we measure indirectly using a linkage test highly correlated with the insertion.

**Likely furnished
(mustache, beard,
and/or eyebrows) (F1)**

Coat Length (FGF5)

The FGF5 gene is known to affect hair length in many different species, including cats, dogs, mice, and humans. In dogs, the **T** allele confers a long, silky haircoat as observed in the Yorkshire Terrier and the Long Haired Whippet. The ancestral **G** allele causes a shorter coat as seen in the Boxer or the American Staffordshire Terrier. In certain breeds (such as Corgi), the long haircoat is described as “fluff.”

Likely long coat (TT)

Shedding (MC5R)

Dogs with at least one copy of the ancestral **C** allele, like many Labradors and German Shepherd Dogs, are heavy or seasonal shedders, while those with two copies of the **T** allele, including many Boxers, Shih Tzus and Chihuahuas, tend to be lighter shedders. Dogs with furnished/wire-haired coats caused by RSPO2 (the furnishings gene) tend to be low shedders regardless of their genotype at this gene.

**Likely light shedding
(CT)**

Hairlessness (FOXI3) LINKAGE

A duplication in the FOXI3 gene causes hairlessness over most of the body as well as changes in tooth shape and number. This mutation occurs in Peruvian Inca Orchid, Xoloitzcuintli (Mexican Hairless), and Chinese Crested (other hairless breeds have different mutations). Dogs with the **NDup** genotype are likely to be hairless while dogs with the **NN** genotype are likely to have a normal coat. The **DupDup** genotype has never been observed, suggesting that dogs with that genotype cannot survive to birth. Please note that this is a linkage test, so it may not be as predictive as direct tests of the mutation in some lines.

**Very unlikely to be
hairless (NN)**

Hairlessness (SGK3)

Hairlessness in the American Hairless Terrier arises from a mutation in the SGK3 gene. Dogs with the **DD** result are likely to be hairless. Dogs with the **ND** genotype will have a normal coat, but can pass the **D**

**Very unlikely to be
hairless (NN)**



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TRAITS: OTHER COAT TRAITS (CONTINUED)

TRAIT

RESULT

Oculocutaneous Albinism Type 2 (SLC45A2) LINKAGE

Dogs with two copies **DD** of this deletion in the SLC45A2 gene have oculocutaneous albinism (OCA), also known as Doberman Z Factor Albinism, a recessive condition characterized by severely reduced or absent pigment in the eyes, skin, and hair. Affected dogs sometimes suffer from vision problems due to lack of eye pigment (which helps direct and absorb ambient light) and are prone to sunburn. Dogs with a single copy of the deletion **ND** will not be affected but can pass the mutation on to their offspring. This particular mutation can be traced back to a single white Doberman Pinscher born in 1976, and it has only been observed in dogs descended from this individual. Please note that this is a linkage test, so it may not be as predictive as direct tests of the mutation in some lines.

Likely not albino (NN)

Coat Texture (KRT71)

Dogs with a long coat and at least one copy of the **T** allele have a wavy or curly coat characteristic of Poodles and Bichon Frises. Dogs with two copies of the ancestral **C** allele are likely to have a straight coat, but there are other factors that can cause a curly coat, for example if they at least one **F** allele for the Furnishings (RSPO2) gene then they are likely to have a curly coat. Dogs with short coats may carry one or two copies of the **T** allele but still have straight coats.

Likely wavy coat (CT)



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TRAITS: OTHER BODY FEATURES

TRAIT	RESULT
<p>Muzzle Length (BMP3)</p> <p>Dogs in medium-length muzzle (mesocephalic) breeds like Staffordshire Terriers and Labradors, and long muzzle (dolichocephalic) breeds like Whippet and Collie have one, or more commonly two, copies of the ancestral C allele. Dogs in many short-length muzzle (brachycephalic) breeds such as the English Bulldog, Pug, and Pekingese have two copies of the derived A allele. At least five different genes affect muzzle length in dogs, with BMP3 being the only one with a known causal mutation. For example, the skull shape of some breeds, including the dolichocephalic Scottish Terrier or the brachycephalic Japanese Chin, appear to be caused by other genes. Thus, dogs may have short or long muzzles due to other genetic factors that are not yet known to science.</p>	<p>Likely medium or long muzzle (CC)</p>
<p>Tail Length (T)</p> <p>Whereas most dogs have two C alleles and a long tail, dogs with one G allele are likely to have a bobtail, which is an unusually short or absent tail. This mutation causes natural bobtail in many breeds including the Pembroke Welsh Corgi, the Australian Shepherd, and the Brittany Spaniel. Dogs with GG genotypes have not been observed, suggesting that dogs with the GG genotype do not survive to birth. Please note that this mutation does not explain every natural bobtail! While certain lineages of Boston Terrier, English Bulldog, Rottweiler, Miniature Schnauzer, Cavalier King Charles Spaniel, and Parson Russell Terrier, and Dobermans are born with a natural bobtail, these breeds do not have this mutation. This suggests that other unknown genetic mutations can also lead to a natural bobtail.</p>	<p>Likely normal-length tail (CC)</p>
<p>Hind Dewclaws (LMBR1)</p> <p>Common in certain breeds such as the Saint Bernard, hind dewclaws are extra, nonfunctional digits located midway between a dog's paw and hock. Dogs with at least one copy of the T allele have about a 50% chance of having hind dewclaws. Note that other (currently unknown to science) mutations can also cause hind dewclaws, so some CC or TC dogs will have hind dewclaws.</p>	<p>Unlikely to have hind dew claws (CC)</p>



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TRAITS: OTHER BODY FEATURES (CONTINUED)

TRAIT

RESULT

Blue Eye Color (ALX4) LINKAGE

Embark researchers discovered this large duplication associated with blue eyes in Arctic breeds like Siberian Husky as well as tri-colored (non-merle) Australian Shepherds. Dogs with at least one copy of the duplication (**Dup**) are more likely to have at least one blue eye. Some dogs with the duplication may have only one blue eye (complete heterochromia) or may not have blue eyes at all; nevertheless, they can still pass the duplication and the trait to their offspring. **NN** dogs do not carry this duplication, but may have blue eyes due to other factors, such as merle. Please note that this is a linkage test, so it may not be as predictive as direct tests of the mutation in some lines.

Less likely to have blue eyes (**NN**)

Back Muscling & Bulk, Large Breed (ACSL4)

The **T** allele is associated with heavy muscling along the back and trunk in characteristically "bulky" large-breed dogs including the Saint Bernard, Bernese Mountain Dog, Greater Swiss Mountain Dog, and Rottweiler. The "bulky" **T** allele is absent from leaner shaped large breed dogs like the Great Dane, Irish Wolfhound, and Scottish Deerhound, which are fixed for the ancestral **C** allele. Note that this mutation does not seem to affect muscling in small or even mid-sized dog breeds with notable back muscling, including the American Staffordshire Terrier, Boston Terrier, and the English Bulldog.

Likely normal muscling (**CC**)



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TRAITS: BODY SIZE

TRAIT	RESULT
Body Size (IGF1) The I allele is associated with smaller body size.	Intermediate (NI)
Body Size (IGFR1) The A allele is associated with smaller body size.	Larger (GG)
Body Size (STC2) The A allele is associated with smaller body size.	Larger (TT)
Body Size (GHR - E191K) The A allele is associated with smaller body size.	Larger (GG)
Body Size (GHR - P177L) The T allele is associated with smaller body size.	Larger (CC)



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TRAITS: PERFORMANCE

TRAIT

RESULT

Altitude Adaptation (EPAS1)

This mutation causes dogs to be especially tolerant of low oxygen environments (hypoxia), such as those found at high elevations. Dogs with at least one **A** allele are less susceptible to "altitude sickness." This mutation was originally identified in breeds from high altitude areas such as the Tibetan Mastiff.

Normal altitude tolerance (GG)

Appetite (POMC) LINKAGE

This mutation in the POMC gene is found primarily in Labrador and Flat Coated Retrievers. Compared to dogs with no copies of the mutation (**NN**), dogs with one (**ND**) or two (**DD**) copies of the mutation are more likely to have high food motivation, which can cause them to eat excessively, have higher body fat percentage, and be more prone to obesity. Read more about the genetics of POMC, and learn how you can contribute to research, in our blog post (<https://embarkvet.com/resources/blog/pomc-dogs/>). We measure this result using a linkage test.

Normal food motivation (NN)



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HEALTH REPORT

How to interpret Lua's genetic health results:

If Lua 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 Lua 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.

Summary

Of the 255 genetic health risks we analyzed, we found 1 result that you should learn about.

Notable results (1)

ALT Activity

Clear results

Breed-relevant (17)

Other (237)



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BREED-RELEVANT RESULTS

Research studies indicate that these results are more relevant to dogs like Lua, and may influence her chances of developing certain health conditions.

<input checked="" type="checkbox"/> Cobalamin Malabsorption (CUBN Exon 53, Border Collie Variant)	Clear
<input checked="" type="checkbox"/> Collie Eye Anomaly (NHEJ1)	Clear
<input checked="" type="checkbox"/> Degenerative Myelopathy, DM (SOD1A)	Clear
<input checked="" type="checkbox"/> GM2 Gangliosidosis (HEXB, Poodle Variant)	Clear
<input checked="" type="checkbox"/> Goniodysgenesis and Glaucoma, Pectinate Ligament Dysplasia, PLD (OLFM3)	Clear
<input checked="" type="checkbox"/> Intervertebral Disc Disease (Type I) (FGF4 retrogene - CFA12)	Clear
<input checked="" type="checkbox"/> Multiple Drug Sensitivity (ABCB1)	Clear
<input checked="" type="checkbox"/> Myotonia Congenita (CLCN1 Exon 23, Australian Cattle Dog Variant)	Clear
<input checked="" type="checkbox"/> Neonatal Encephalopathy with Seizures, NEWS (ATF2)	Clear
<input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 5, NCL 5 (CLN5 Exon 4 SNP, Border Collie Variant)	Clear
<input checked="" type="checkbox"/> Osteochondrodysplasia (SLC13A1, Poodle Variant)	Clear
<input checked="" type="checkbox"/> Primary Lens Luxation (ADAMTS17)	Clear
<input checked="" type="checkbox"/> Progressive Retinal Atrophy, prcd (PRCD Exon 1)	Clear
<input checked="" type="checkbox"/> Raine Syndrome (FAM20C)	Clear
<input checked="" type="checkbox"/> Sensory Neuropathy (FAM134B, Border Collie Variant)	Clear
<input checked="" type="checkbox"/> Trapped Neutrophil Syndrome, TNS (VPS13B)	Clear
<input checked="" type="checkbox"/> Von Willebrand Disease Type I, Type I vWD (VWF)	Clear



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OTHER RESULTS

Research has not yet linked these conditions to dogs with similar breeds to Lua. Review any increased risk or notable results to understand her potential risk and recommendations.

 ALT Activity (GPT)	Notable
 2-DHA Kidney & Bladder Stones (APRT)	Clear
 Acral Mutilation Syndrome (GDNF-AS, Spaniel and Pointer Variant)	Clear
 Alaskan Husky Encephalopathy (SLC19A3)	Clear
 Alaskan Malamute Polyneuropathy, AMPN (NDRG1 SNP)	Clear
 Alexander Disease (GFAP)	Clear
 Anhidrotic Ectodermal Dysplasia (EDA Intron 8)	Clear
 Autosomal Dominant Progressive Retinal Atrophy (RHO)	Clear
 Bald Thigh Syndrome (IGFBP5)	Clear
 Bernard-Soulier Syndrome, BSS (GP9, Cocker Spaniel Variant)	Clear
 Bully Whippet Syndrome (MSTN)	Clear
 Canine Elliptocytosis (SPTB Exon 30)	Clear
 Canine Fucosidosis (FUCA1)	Clear
 Canine Leukocyte Adhesion Deficiency Type I, CLAD I (ITGB2, Setter Variant)	Clear
 Canine Leukocyte Adhesion Deficiency Type III, CLAD III (FERMT3, German Shepherd Variant)	Clear
 Canine Multifocal Retinopathy, cmr1 (BEST1 Exon 2)	Clear
 Canine Multifocal Retinopathy, cmr2 (BEST1 Exon 5, Coton de Tulear Variant)	Clear
 Canine Multifocal Retinopathy, cmr3 (BEST1 Exon 10 Deletion, Finnish and Swedish Lapphund, Lapponian Herder Variant)	Clear



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OTHER RESULTS

<input checked="" type="checkbox"/> Canine Multiple System Degeneration (SERAC1 Exon 4, Chinese Crested Variant)	Clear
<input checked="" type="checkbox"/> Canine Multiple System Degeneration (SERAC1 Exon 15, Kerry Blue Terrier Variant)	Clear
<input checked="" type="checkbox"/> Cardiomyopathy and Juvenile Mortality (YARS2)	Clear
<input checked="" type="checkbox"/> Centronuclear Myopathy, CNM (PTPLA)	Clear
<input checked="" type="checkbox"/> Cerebellar Hypoplasia (VLDLR, Eurasier Variant)	Clear
<input checked="" type="checkbox"/> Chondrodystrophy (ITGA10, Norwegian Elkhound and Karelian Bear Dog Variant)	Clear
<input checked="" type="checkbox"/> Cleft Lip and/or Cleft Palate (ADAMTS20, Nova Scotia Duck Tolling Retriever Variant)	Clear
<input checked="" type="checkbox"/> Cleft Palate, CP1 (DLX6 intron 2, Nova Scotia Duck Tolling Retriever Variant)	Clear
<input checked="" type="checkbox"/> Cobalamin Malabsorption (CUBN Exon 8, Beagle Variant)	Clear
<input checked="" type="checkbox"/> Complement 3 Deficiency, C3 Deficiency (C3)	Clear
<input checked="" type="checkbox"/> Congenital Cornification Disorder (NSDHL, Chihuahua Variant)	Clear
<input checked="" type="checkbox"/> Congenital Hypothyroidism (TPO, Rat, Toy, Hairless Terrier Variant)	Clear
<input checked="" type="checkbox"/> Congenital Hypothyroidism (TPO, Tenterfield Terrier Variant)	Clear
<input checked="" type="checkbox"/> Congenital Hypothyroidism with Goiter (TPO Intron 13, French Bulldog Variant)	Clear
<input checked="" type="checkbox"/> Congenital Hypothyroidism with Goiter (SLC5A5, Shih Tzu Variant)	Clear
<input checked="" type="checkbox"/> Congenital Macrothrombocytopenia (TUBB1 Exon 1, Cairn and Norfolk Terrier Variant)	Clear
<input checked="" type="checkbox"/> Congenital Myasthenic Syndrome, CMS (COLQ, Labrador Retriever Variant)	Clear
<input checked="" type="checkbox"/> Congenital Myasthenic Syndrome, CMS (COLQ, Golden Retriever Variant)	Clear



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OTHER RESULTS

- | | |
|--|-------|
| ✓ Congenital Myasthenic Syndrome, CMS (CHAT, Old Danish Pointing Dog Variant) | Clear |
| ✓ Congenital Myasthenic Syndrome, CMS (CHRNE, Jack Russell Terrier Variant) | Clear |
| ✓ Congenital Stationary Night Blindness (LRIT3, Beagle Variant) | Clear |
| ✓ Congenital Stationary Night Blindness (RPE65, Briard Variant) | Clear |
| ✓ Craniomandibular Osteopathy, CMO (SLC37A2) | Clear |
| ✓ Craniomandibular Osteopathy, CMO (SLC37A2 Intron 16, Basset Hound Variant) | Clear |
| ✓ Cystinuria Type I-A (SLC3A1, Newfoundland Variant) | Clear |
| ✓ Cystinuria Type II-A (SLC3A1, Australian Cattle Dog Variant) | Clear |
| ✓ Cystinuria Type II-B (SLC7A9, Miniature Pinscher Variant) | Clear |
| ✓ Day Blindness (CNGB3 Deletion, Alaskan Malamute Variant) | Clear |
| ✓ Day Blindness (CNGA3 Exon 7, German Shepherd Variant) | Clear |
| ✓ Day Blindness (CNGA3 Exon 7, Labrador Retriever Variant) | Clear |
| ✓ Day Blindness (CNGB3 Exon 6, German Shorthaired Pointer Variant) | Clear |
| ✓ Deafness and Vestibular Syndrome of Dobermans, DVDob, DINGS (MYO7A) | Clear |
| ✓ Demyelinating Polyneuropathy (SBF2/MTRM13) | Clear |
| ✓ Dental-Skeletal-Retinal Anomaly (MIA3, Cane Corso Variant) | Clear |
| ✓ Diffuse Cystic Renal Dysplasia and Hepatic Fibrosis (INPP5E Intron 9, Norwich Terrier Variant) | Clear |
| ✓ Dilated Cardiomyopathy, DCM (RBM20, Schnauzer Variant) | Clear |



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OTHER RESULTS

- | | |
|---|-------|
| ✔ Dilated Cardiomyopathy, DCM1 (PDK4, Doberman Pinscher Variant 1) | Clear |
| ✔ Dilated Cardiomyopathy, DCM2 (TTN, Doberman Pinscher Variant 2) | Clear |
| ✔ Disproportionate Dwarfism (PRKG2, Dogo Argentino Variant) | Clear |
| ✔ Dry Eye Curly Coat Syndrome (FAM83H Exon 5) | Clear |
| ✔ Dystrophic Epidermolysis Bullosa (COL7A1, Central Asian Shepherd Dog Variant) | Clear |
| ✔ Dystrophic Epidermolysis Bullosa (COL7A1, Golden Retriever Variant) | Clear |
| ✔ Early Bilateral Deafness (LOXHD1 Exon 38, Rottweiler Variant) | Clear |
| ✔ Early Onset Adult Deafness, EOAD (EPS8L2 Deletion, Rhodesian Ridgeback Variant) | Clear |
| ✔ Early Onset Cerebellar Ataxia (SEL1L, Finnish Hound Variant) | Clear |
| ✔ Ehlers Danlos (ADAMTS2, Doberman Pinscher Variant) | Clear |
| ✔ Enamel Hypoplasia (ENAM Deletion, Italian Greyhound Variant) | Clear |
| ✔ Enamel Hypoplasia (ENAM SNP, Parson Russell Terrier Variant) | Clear |
| ✔ Episodic Falling Syndrome (BCAN) | Clear |
| ✔ Exercise-Induced Collapse, EIC (DNM1) | Clear |
| ✔ Factor VII Deficiency (F7 Exon 5) | Clear |
| ✔ Factor XI Deficiency (F11 Exon 7, Kerry Blue Terrier Variant) | Clear |
| ✔ Familial Nephropathy (COL4A4 Exon 3, Cocker Spaniel Variant) | Clear |
| ✔ Familial Nephropathy (COL4A4 Exon 30, English Springer Spaniel Variant) | Clear |



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OTHER RESULTS

- | | |
|--|-------|
| <input checked="" type="checkbox"/> Fanconi Syndrome (FAN1, Basenji Variant) | Clear |
| <input checked="" type="checkbox"/> Fetal-Onset Neonatal Neuroaxonal Dystrophy (MFN2, Giant Schnauzer Variant) | Clear |
| <input checked="" type="checkbox"/> Glanzmann's Thrombasthenia Type I (ITGA2B Exon 13, Great Pyrenees Variant) | Clear |
| <input checked="" type="checkbox"/> Glanzmann's Thrombasthenia Type I (ITGA2B Exon 12, Otterhound Variant) | Clear |
| <input checked="" type="checkbox"/> Globoid Cell Leukodystrophy, Krabbe disease (GALC Exon 5, Terrier Variant) | Clear |
| <input checked="" type="checkbox"/> Glycogen Storage Disease Type IA, Von Gierke Disease, GSD IA (G6PC, Maltese Variant) | Clear |
| <input checked="" type="checkbox"/> Glycogen Storage Disease Type IIIA, GSD IIIA (AGL, Curly Coated Retriever Variant) | Clear |
| <input checked="" type="checkbox"/> Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM, Whippet and English Springer Spaniel Variant) | Clear |
| <input checked="" type="checkbox"/> Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM, Wachtelhund Variant) | Clear |
| <input checked="" type="checkbox"/> GM1 Gangliosidosis (GLB1 Exon 2, Portuguese Water Dog Variant) | Clear |
| <input checked="" type="checkbox"/> GM1 Gangliosidosis (GLB1 Exon 15, Shiba Inu Variant) | Clear |
| <input checked="" type="checkbox"/> GM1 Gangliosidosis (GLB1 Exon 15, Alaskan Husky Variant) | Clear |
| <input checked="" type="checkbox"/> GM2 Gangliosidosis (HEXA, Japanese Chin Variant) | Clear |
| <input checked="" type="checkbox"/> Golden Retriever Progressive Retinal Atrophy 1, GR-PRA1 (SLC4A3) | Clear |
| <input checked="" type="checkbox"/> Golden Retriever Progressive Retinal Atrophy 2, GR-PRA2 (TTC8) | Clear |
| <input checked="" type="checkbox"/> Hemophilia A (F8 Exon 11, German Shepherd Variant 1) | Clear |
| <input checked="" type="checkbox"/> Hemophilia A (F8 Exon 1, German Shepherd Variant 2) | Clear |
| <input checked="" type="checkbox"/> Hemophilia A (F8 Exon 10, Boxer Variant) | Clear |



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OTHER RESULTS

- | | |
|--|-------|
| <input checked="" type="checkbox"/> Hemophilia B (F9 Exon 7, Terrier Variant) | Clear |
| <input checked="" type="checkbox"/> Hemophilia B (F9 Exon 7, Rhodesian Ridgeback Variant) | Clear |
| <input checked="" type="checkbox"/> Hereditary Ataxia, Cerebellar Degeneration (RAB24, Old English Sheepdog and Gordon Setter Variant) | Clear |
| <input checked="" type="checkbox"/> Hereditary Cataracts (HSF4 Exon 9, Australian Shepherd Variant) | Clear |
| <input checked="" type="checkbox"/> Hereditary Footpad Hyperkeratosis (FAM83G, Terrier and Kromfohrlander Variant) | Clear |
| <input checked="" type="checkbox"/> Hereditary Footpad Hyperkeratosis (DSG1, Rottweiler Variant) | Clear |
| <input checked="" type="checkbox"/> Hereditary Nasal Parakeratosis (SUV39H2 Intron 4, Greyhound Variant) | Clear |
| <input checked="" type="checkbox"/> Hereditary Nasal Parakeratosis, HNPk (SUV39H2) | Clear |
| <input checked="" type="checkbox"/> Hereditary Vitamin D-Resistant Rickets (VDR) | Clear |
| <input checked="" type="checkbox"/> Hypocatalasia, Acatalasemia (CAT) | Clear |
| <input checked="" type="checkbox"/> Hypomyelination and Tremors (FNIP2, Weimaraner Variant) | Clear |
| <input checked="" type="checkbox"/> Hypophosphatasia (ALPL Exon 9, Karelian Bear Dog Variant) | Clear |
| <input checked="" type="checkbox"/> Ichthyosis (NIPAL4, American Bulldog Variant) | Clear |
| <input checked="" type="checkbox"/> Ichthyosis (ASPRV1 Exon 2, German Shepherd Variant) | Clear |
| <input checked="" type="checkbox"/> Ichthyosis (SLC27A4, Great Dane Variant) | Clear |
| <input checked="" type="checkbox"/> Ichthyosis, Epidermolytic Hyperkeratosis (KRT10, Terrier Variant) | Clear |
| <input checked="" type="checkbox"/> Ichthyosis, ICH1 (PNPLA1, Golden Retriever Variant) | Clear |
| <input checked="" type="checkbox"/> Inflammatory Myopathy (SLC25A12) | Clear |



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OTHER RESULTS

<input checked="" type="checkbox"/> Inherited Myopathy of Great Danes (BIN1)	Clear
<input checked="" type="checkbox"/> Inherited Selected Cobalamin Malabsorption with Proteinuria (CUBN, Komondor Variant)	Clear
<input checked="" type="checkbox"/> Intestinal Lipid Malabsorption (ACSL5, Australian Kelpie)	Clear
<input checked="" type="checkbox"/> Junctional Epidermolysis Bullosa (LAMA3 Exon 66, Australian Cattle Dog Variant)	Clear
<input checked="" type="checkbox"/> Junctional Epidermolysis Bullosa (LAMB3 Exon 11, Australian Shepherd Variant)	Clear
<input checked="" type="checkbox"/> Juvenile Epilepsy (LGI2)	Clear
<input checked="" type="checkbox"/> Juvenile Laryngeal Paralysis and Polyneuropathy (RAB3GAP1, Rottweiler Variant)	Clear
<input checked="" type="checkbox"/> Juvenile Myoclonic Epilepsy (DIRAS1)	Clear
<input checked="" type="checkbox"/> L-2-Hydroxyglutaricaciduria, L2HGA (L2HGDH, Staffordshire Bull Terrier Variant)	Clear
<input checked="" type="checkbox"/> Lagotto Storage Disease (ATG4D)	Clear
<input checked="" type="checkbox"/> Laryngeal Paralysis (RAPGEF6, Miniature Bull Terrier Variant)	Clear
<input checked="" type="checkbox"/> Late Onset Spinocerebellar Ataxia (CAPN1)	Clear
<input checked="" type="checkbox"/> Late-Onset Neuronal Ceroid Lipofuscinosis, NCL 12 (ATP13A2, Australian Cattle Dog Variant)	Clear
<input checked="" type="checkbox"/> Leonberger Polyneuropathy 1 (LPN1, ARHGEF10)	Clear
<input checked="" type="checkbox"/> Leonberger Polyneuropathy 2 (GJA9)	Clear
<input checked="" type="checkbox"/> Lethal Acrodermatitis, LAD (MKLN1)	Clear
<input checked="" type="checkbox"/> Leukodystrophy (TSEN54 Exon 5, Standard Schnauzer Variant)	Clear
<input checked="" type="checkbox"/> Ligneous Membranitis, LM (PLG)	Clear



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OTHER RESULTS

<input checked="" type="checkbox"/> Limb Girdle Muscular Dystrophy (SGCD, Boston Terrier Variant)	Clear
<input checked="" type="checkbox"/> Limb-Girdle Muscular Dystrophy 2D (SGCA Exon 3, Miniature Dachshund Variant)	Clear
<input checked="" type="checkbox"/> Long QT Syndrome (KCNQ1)	Clear
<input checked="" type="checkbox"/> Lundehund Syndrome (LEPREL1)	Clear
<input checked="" type="checkbox"/> Macular Corneal Dystrophy, MCD (CHST6)	Clear
<input checked="" type="checkbox"/> Malignant Hyperthermia (RYR1)	Clear
<input checked="" type="checkbox"/> May-Hegglin Anomaly (MYH9)	Clear
<input checked="" type="checkbox"/> Methemoglobinemia (CYB5R3, Pit Bull Terrier Variant)	Clear
<input checked="" type="checkbox"/> Methemoglobinemia (CYB5R3)	Clear
<input checked="" type="checkbox"/> Microphthalmia (RBP4 Exon 2, Soft Coated Wheaten Terrier Variant)	Clear
<input checked="" type="checkbox"/> Mucopolysaccharidosis IIIB, Sanfilippo Syndrome Type B, MPS IIIB (NAGLU, Schipperke Variant)	Clear
<input checked="" type="checkbox"/> Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6, Dachshund Variant)	Clear
<input checked="" type="checkbox"/> Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6, New Zealand Huntaway Variant)	Clear
<input checked="" type="checkbox"/> Mucopolysaccharidosis Type VI, Maroteaux-Lamy Syndrome, MPS VI (ARSB Exon 5, Miniature Pinscher Variant)	Clear
<input checked="" type="checkbox"/> Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 3, German Shepherd Variant)	Clear
<input checked="" type="checkbox"/> Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 5, Terrier Brasileiro Variant)	Clear
<input checked="" type="checkbox"/> Muscular Dystrophy (DMD, Cavalier King Charles Spaniel Variant 1)	Clear
<input checked="" type="checkbox"/> Muscular Dystrophy (DMD, Golden Retriever Variant)	Clear



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OTHER RESULTS

<input checked="" type="checkbox"/> Musladin-Lueke Syndrome, MLS (ADAMTSL2)	Clear
<input checked="" type="checkbox"/> Myasthenia Gravis-Like Syndrome (CHRNE, Heideterrier Variant)	Clear
<input checked="" type="checkbox"/> Myotonia Congenita (CLCN1 Exon 7, Miniature Schnauzer Variant)	Clear
<input checked="" type="checkbox"/> Narcolepsy (HCRTR2 Exon 1, Dachshund Variant)	Clear
<input checked="" type="checkbox"/> Narcolepsy (HCRTR2 Intron 4, Doberman Pinscher Variant)	Clear
<input checked="" type="checkbox"/> Narcolepsy (HCRTR2 Intron 6, Labrador Retriever Variant)	Clear
<input checked="" type="checkbox"/> Nemaline Myopathy (NEB, American Bulldog Variant)	Clear
<input checked="" type="checkbox"/> Neonatal Cerebellar Cortical Degeneration (SPTBN2, Beagle Variant)	Clear
<input checked="" type="checkbox"/> Neonatal Interstitial Lung Disease (LAMP3)	Clear
<input checked="" type="checkbox"/> Neuroaxonal Dystrophy, NAD (VPS11, Rottweiler Variant)	Clear
<input checked="" type="checkbox"/> Neuroaxonal Dystrophy, NAD (TECPR2, Spanish Water Dog Variant)	Clear
<input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 1, NCL 1 (PPT1 Exon 8, Dachshund Variant 1)	Clear
<input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 10, NCL 10 (CTSD Exon 5, American Bulldog Variant)	Clear
<input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 2, NCL 2 (TPP1 Exon 4, Dachshund Variant 2)	Clear
<input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 5, NCL 5 (CLN5 Exon 4 Deletion, Golden Retriever Variant)	Clear
<input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 6, NCL 6 (CLN6 Exon 7, Australian Shepherd Variant)	Clear
<input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 7, NCL 7 (MFSD8, Chihuahua and Chinese Crested Variant)	Clear
<input checked="" type="checkbox"/> Neuronal Ceroid Lipofuscinosis 8, NCL 8 (CLN8, Australian Shepherd Variant)	Clear



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OTHER RESULTS

- ✓ Neuronal Ceroid Lipofuscinosis 8, NCL 8 (CLN8 Exon 2, English Setter Variant) Clear
- ✓ Neuronal Ceroid Lipofuscinosis 8, NCL 8 (CLN8 Insertion, Saluki Variant) Clear
- ✓ Neuronal Ceroid Lipofuscinosis, Cerebellar Ataxia, NCL4A (ARSG Exon 2, American Staffordshire Terrier Variant) Clear
- ✓ Oculocutaneous Albinism, OCA (SLC45A2 Exon 6, Bullmastiff Variant) Clear
- ✓ Oculocutaneous Albinism, OCA (SLC45A2, Small Breed Variant) Clear
- ✓ Oculoskeletal Dysplasia 2 (COL9A2, Samoyed Variant) Clear
- ✓ Osteogenesis Imperfecta (COL1A2, Beagle Variant) Clear
- ✓ Osteogenesis Imperfecta (SERPINH1, Dachshund Variant) Clear
- ✓ Osteogenesis Imperfecta (COL1A1, Golden Retriever Variant) Clear
- ✓ P2Y12 Receptor Platelet Disorder (P2Y12) Clear
- ✓ Pachyonychia Congenita (KRT16, Dogue de Bordeaux Variant) Clear
- ✓ Paroxysmal Dyskinesia, PxD (PIGN) Clear
- ✓ Persistent Mullerian Duct Syndrome, PMDS (AMHR2) Clear
- ✓ Pituitary Dwarfism (POU1F1 Intron 4, Karelian Bear Dog Variant) Clear
- ✓ Platelet Factor X Receptor Deficiency, Scott Syndrome (TMEM16F) Clear
- ✓ Polycystic Kidney Disease, PKD (PKD1) Clear
- ✓ Pompe's Disease (GAA, Finnish and Swedish Lapphund, Lapponian Herder Variant) Clear
- ✓ Prekallikrein Deficiency (KLKB1 Exon 8) Clear



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OTHER RESULTS

- | | |
|---|-------|
| ✓ Primary Ciliary Dyskinesia, PCD (NME5, Alaskan Malamute Variant) | Clear |
| ✓ Primary Ciliary Dyskinesia, PCD (CCDC39 Exon 3, Old English Sheepdog Variant) | Clear |
| ✓ Primary Hyperoxaluria (AGXT) | Clear |
| ✓ Primary Open Angle Glaucoma (ADAMTS17 Exon 11, Basset Fauve de Bretagne Variant) | Clear |
| ✓ Primary Open Angle Glaucoma (ADAMTS10 Exon 17, Beagle Variant) | Clear |
| ✓ Primary Open Angle Glaucoma (ADAMTS10 Exon 9, Norwegian Elkhound Variant) | Clear |
| ✓ Primary Open Angle Glaucoma and Primary Lens Luxation (ADAMTS17 Exon 2, Chinese Shar-Pei Variant) | Clear |
| ✓ Progressive Retinal Atrophy (SAG) | Clear |
| ✓ Progressive Retinal Atrophy (IFT122 Exon 26, Lapponian Herder Variant) | Clear |
| ✓ Progressive Retinal Atrophy, Bardet-Biedl Syndrome (BBS2 Exon 11, Shetland Sheepdog Variant) | Clear |
| ✓ Progressive Retinal Atrophy, CNGA (CNGA1 Exon 9) | Clear |
| ✓ Progressive Retinal Atrophy, crd1 (PDE6B, American Staffordshire Terrier Variant) | Clear |
| ✓ Progressive Retinal Atrophy, crd4/cord1 (RPGRIP1) | Clear |
| ✓ Progressive Retinal Atrophy, PRA1 (CNGB1) | Clear |
| ✓ Progressive Retinal Atrophy, PRA3 (FAM161A) | Clear |
| ✓ Progressive Retinal Atrophy, rcd1 (PDE6B Exon 21, Irish Setter Variant) | Clear |
| ✓ Progressive Retinal Atrophy, rcd3 (PDE6A) | Clear |
| ✓ Proportionate Dwarfism (GH1 Exon 5, Chihuahua Variant) | Clear |



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OTHER RESULTS

<input checked="" type="checkbox"/> Protein Losing Nephropathy, PLN (NPHS1)	Clear
<input checked="" type="checkbox"/> Pyruvate Dehydrogenase Deficiency (PDP1, Spaniel Variant)	Clear
<input checked="" type="checkbox"/> Pyruvate Kinase Deficiency (PKLR Exon 5, Basenji Variant)	Clear
<input checked="" type="checkbox"/> Pyruvate Kinase Deficiency (PKLR Exon 7, Beagle Variant)	Clear
<input checked="" type="checkbox"/> Pyruvate Kinase Deficiency (PKLR Exon 10, Terrier Variant)	Clear
<input checked="" type="checkbox"/> Pyruvate Kinase Deficiency (PKLR Exon 7, Labrador Retriever Variant)	Clear
<input checked="" type="checkbox"/> Pyruvate Kinase Deficiency (PKLR Exon 7, Pug Variant)	Clear
<input checked="" type="checkbox"/> Recurrent Inflammatory Pulmonary Disease, RIPD (AKNA, Rough Collie Variant)	Clear
<input checked="" type="checkbox"/> Renal Cystadenocarcinoma and Nodular Dermatofibrosis (FLCN Exon 7)	Clear
<input checked="" type="checkbox"/> Retina Dysplasia and/or Optic Nerve Hypoplasia (SIX6 Exon 1, Golden Retriever Variant)	Clear
<input checked="" type="checkbox"/> Severe Combined Immunodeficiency, SCID (PRKDC, Terrier Variant)	Clear
<input checked="" type="checkbox"/> Severe Combined Immunodeficiency, SCID (RAG1, Wetterhoun Variant)	Clear
<input checked="" type="checkbox"/> Shaking Puppy Syndrome (PLP1, English Springer Spaniel Variant)	Clear
<input checked="" type="checkbox"/> Shar-Pei Autoinflammatory Disease, SPAID, Shar-Pei Fever (MTBP)	Clear
<input checked="" type="checkbox"/> Skeletal Dysplasia 2, SD2 (COL11A2, Labrador Retriever Variant)	Clear
<input checked="" type="checkbox"/> Skin Fragility Syndrome (PKP1, Chesapeake Bay Retriever Variant)	Clear
<input checked="" type="checkbox"/> Spinocerebellar Ataxia (SCN8A, Alpine Dachsbracke Variant)	Clear
<input checked="" type="checkbox"/> Spinocerebellar Ataxia with Myokymia and/or Seizures (KCNJ10)	Clear



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OTHER RESULTS

- ✓ Spongy Degeneration with Cerebellar Ataxia 1 (KCNJ10) Clear
- ✓ Spongy Degeneration with Cerebellar Ataxia 2 (ATP1B2) Clear
- ✓ Stargardt Disease (ABCA4 Exon 28, Labrador Retriever Variant) Clear
- ✓ Succinic Semialdehyde Dehydrogenase Deficiency (ALDH5A1 Exon 7, Saluki Variant) Clear
- ✓ Thrombopathia (RASGRP1 Exon 5, American Eskimo Dog Variant) Clear
- ✓ Thrombopathia (RASGRP1 Exon 5, Basset Hound Variant) Clear
- ✓ Thrombopathia (RASGRP1 Exon 8, Landseer Variant) Clear
- ✓ Ullrich-like Congenital Muscular Dystrophy (COL6A3 Exon 10, Labrador Retriever Variant) Clear
- ✓ Ullrich-like Congenital Muscular Dystrophy (COL6A1 Exon 3, Landseer Variant) Clear
- ✓ Unilateral Deafness and Vestibular Syndrome (PTPRQ Exon 39, Doberman Pinscher) Clear
- ✓ Urate Kidney & Bladder Stones (SLC2A9) Clear
- ✓ Von Willebrand Disease Type II, Type II vWD (VWF, Pointer Variant) Clear
- ✓ Von Willebrand Disease Type III, Type III vWD (VWF Exon 4, Terrier Variant) Clear
- ✓ Von Willebrand Disease Type III, Type III vWD (VWF Intron 16, Nederlandse Kooikerhondje Variant) Clear
- ✓ Von Willebrand Disease Type III, Type III vWD (VWF Exon 7, Shetland Sheepdog Variant) Clear
- ✓ X-Linked Hereditary Nephropathy, XLHN (COL4A5 Exon 35, Samoyed Variant 2) Clear
- ✓ X-Linked Myotubular Myopathy (MTM1, Labrador Retriever Variant) Clear
- ✓ X-Linked Progressive Retinal Atrophy 1, XL-PRA1 (RPGR) Clear



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OTHER RESULTS

- | | |
|--|-----------------------|
| <input checked="" type="checkbox"/> X-linked Severe Combined Immunodeficiency, X-SCID (IL2RG Exon 1, Basset Hound Variant) | Clear |
| <input checked="" type="checkbox"/> X-linked Severe Combined Immunodeficiency, X-SCID (IL2RG, Corgi Variant) | Clear |
| <input checked="" type="checkbox"/> Xanthine Urolithiasis (XDH, Mixed Breed Variant) | Clear |
| <input checked="" type="checkbox"/> β -Mannosidosis (MANBA Exon 16, Mixed-Breed Variant) | Clear |





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HEALTH REPORT

⊖ Notable result

ALT Activity

Kailua inherited one copy of the variant we tested for Alanine Aminotransferase Activity

Why is this important to your vet?

Lua has one copy of a variant associated with reduced ALT activity as measured on veterinary blood chemistry panels. Please inform your veterinarian that Lua has this genotype, as ALT is often used as an indicator of liver health and Lua is likely to have a lower than average resting ALT activity. As such, an increase in Lua's ALT activity could be evidence of liver damage, even if it is within normal limits by standard ALT reference ranges.

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.



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INBREEDING AND DIVERSITY

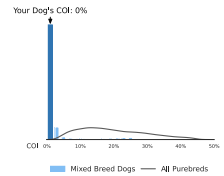
CATEGORY

RESULT

Coefficient Of Inbreeding

Our genetic COI measures the proportion of your dog's genome where the genes on the mother's side are identical by descent to those on the father's side.

0%

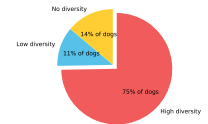


MHC Class II - DLA DRB1

A Dog Leukocyte Antigen (DLA) gene, DRB1 encodes a major histocompatibility complex (MHC) protein involved in the immune response. Some studies have shown associations between certain DRB1 haplotypes and autoimmune diseases such as Addison's disease (hypoadrenocorticism) in certain dog breeds, but these findings have yet to be scientifically validated.

High Diversity

How common is this amount of diversity in mixed breed dogs:



MHC Class II - DLA DQA1 and DQB1

DQA1 and DQB1 are two tightly linked DLA genes that code for MHC proteins involved in the immune response. A number of studies have shown correlations of DQA-DQB1 haplotypes and certain autoimmune diseases; however, these have not yet been scientifically validated.

High Diversity

How common is this amount of diversity in mixed breed dogs:

