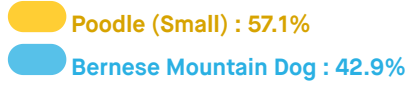


## BREED ANCESTRY



## GENETIC STATS

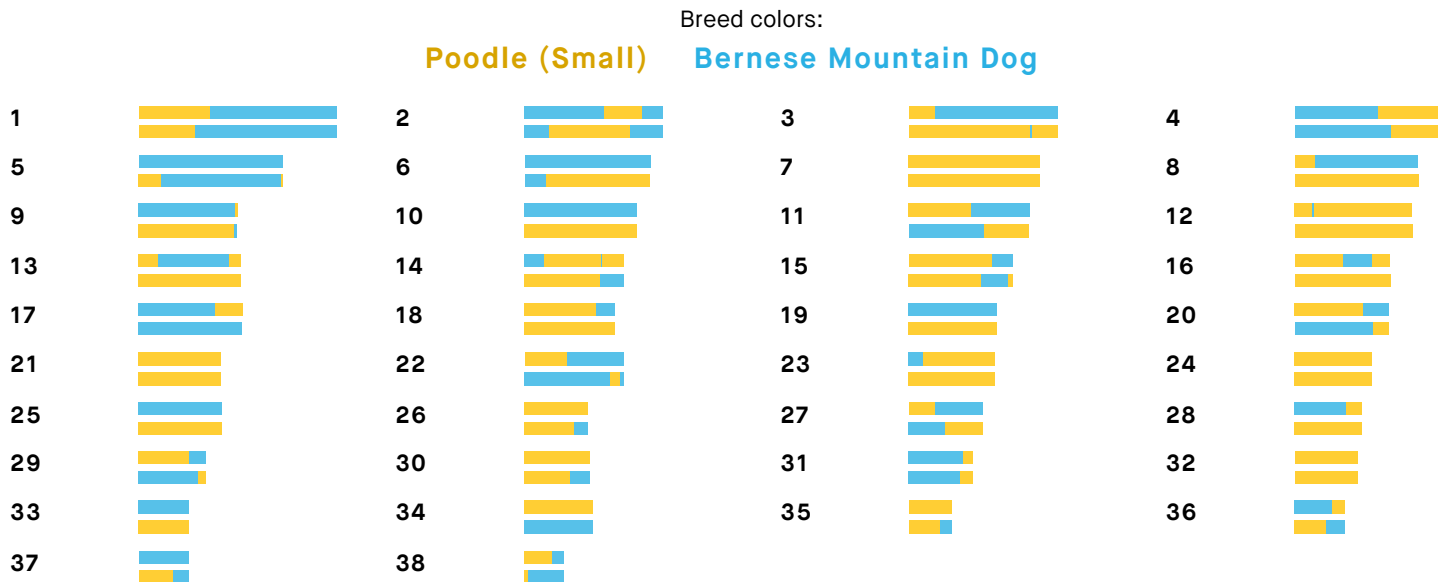
Predicted adult weight: **30 lbs**  
Life stage: **Puppy**  
Based on your dog's date of birth provided.

## TEST DETAILS

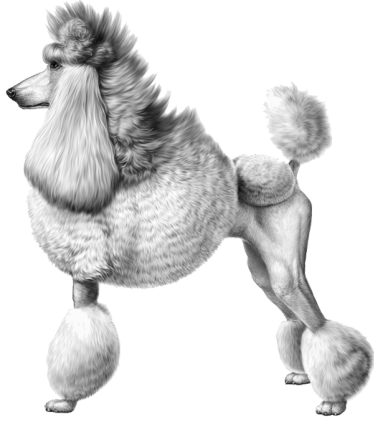
Kit number: EM-55408274  
Swab number: 31220612409299

## BREED ANCESTRY BY CHROMOSOME

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



## POODLE (SMALL)



Miniature and toy poodles are varieties of the poodle breed which originated in Germany in the 15th century. Unlike the larger standard poodle (>15 inches tall), these small poodles were not developed for hunting---except for truffles!---and were generally used as lap dogs and companions. Small poodles are frequently used to create designer dogs like Schnoodles and Maltipoos with low-shedding, hypoallergenic coats. All poodles are highly intelligent and energetic, and need daily exercise and stimulation. They are overall healthy dogs, although heritable eye disease, epilepsy and allergies are relatively common, and toy poodles also have a heightened risk of accidents/trauma due to their small size.

### Alternative Names

Toy Poodle, Miniature Poodle

### Fun Fact

Although Toy Poodles are the most popular dog breed in Japan, Poodles as a group are the eight most popular breed in the US, with miniature poodles being the most common variety.

## BERNESE MOUNTAIN DOG

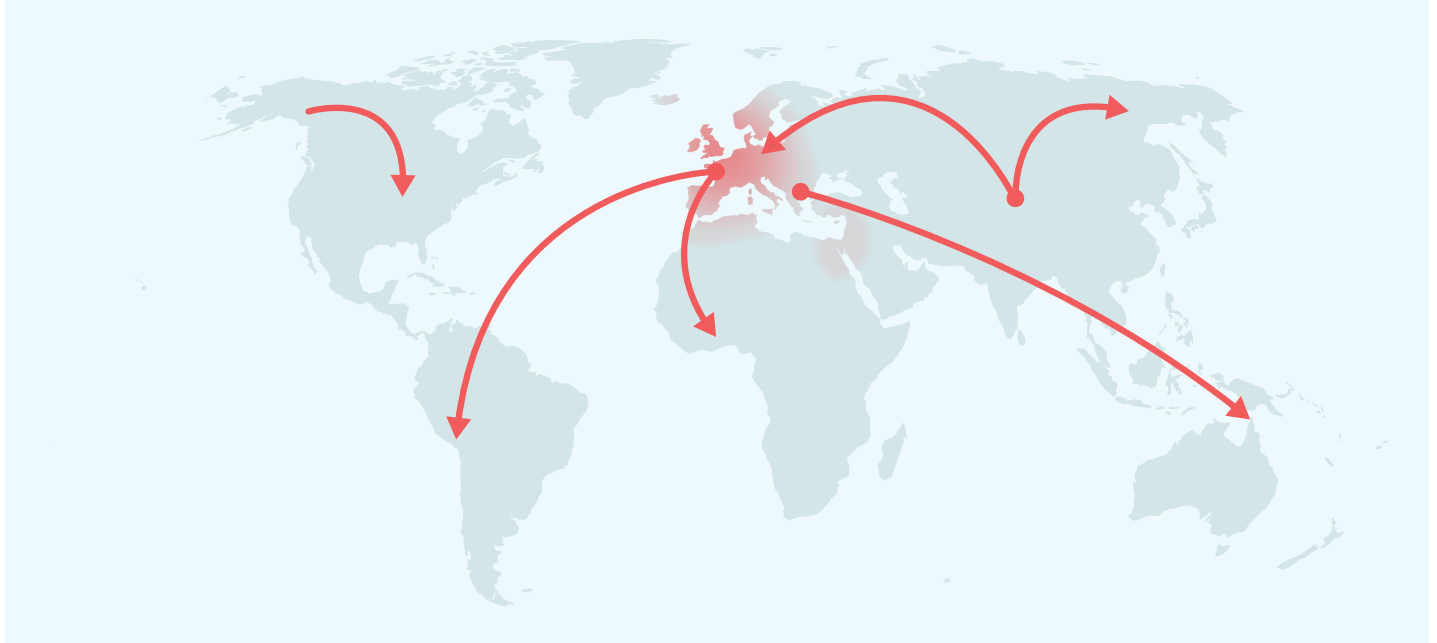


### Fun Fact

Berners can haul up to 1,000 pounds - 10 times their weight!

The Bernese Mountain Dog, commonly referred to as a 'Berner', is a versatile working dog that is both visually pleasing and a loyal companion. The Bernese Mountain Dog was bred to herd cattle, pull carts and be a watchdog in the Swiss farmlands. The ancient 'Molosser' breed is considered the main contributor to Mastiff-type dogs, which include the Berner. It is likely that the Molosser bred with farm dogs from the Swiss Alps in the first century B.C., developing a number of Swiss Sennenhund ("mountain dog") breeds, including the Berner Sennenhund. It is thought that the Berner continued working on these Swiss farmlands for over 2,000 years, before their primary purpose switched from herding cattle to appearing as a show dog in the early 20th century. They were first classified as the Bernese Mountain Dog at this time by the Swiss Kennel Club. Following World War I, in which the breed nearly became extinct, Berners were exported to America before being accepted by the AKC as an official breed in 1937. Breed development faltered somewhat during World War II before Berners became an established and popular breed in the mid to late 20th century. This easygoing breed likes to be around their owners, where their calm and intelligent nature makes them a beloved family dog. Berners exhibit their working dog instincts in their willingness to learn and relative ease to be trained. Their heritage also often results in being protective and sometimes shy towards new people and dogs. Early socialization training allows the Bernese Mountain Dog to learn to overcome initial caution around new things. This breed is a large dog, weighing around 100 pounds, and likes to keep busy, so it is important training is conducted while young and manageable. While they are well-tempered dogs, they are slow to mature and often exhibit puppy behavior for a number of years before reaching full maturity. Due to their beautiful and thick double coat, Berners tend to shed generously, requiring frequent brushing to keep under control. Unfortunately, owing to their size and limited gene pool, Bernese Mountain Dogs are prone to health problems and have a life expectancy of between 6-8 years. Nonetheless, this lovable dog

## MATERNAL LINE



Through Kallie'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: A1e

This female lineage likely stems from some of the original Central Asian wolves that were domesticated into modern dogs starting about 15,000 years ago. It seemed to be a fairly rare dog line for most of dog history until the past 300 years, when the lineage seemed to "explode" out and spread quickly. What really separates this group from the pack is its presence in Alaskan village dogs and Samoyeds. It is possible that this was an indigenous lineage brought to the Americas from Siberia when people were first starting to make that trip themselves! We see this lineage pop up in overwhelming numbers of Irish Wolfhounds, and it also occurs frequently in popular large breeds like Bernese Mountain Dogs, Saint Bernards and Great Danes. Shetland Sheepdogs are also common members of this maternal line, and we see it a lot in Boxers, too. Though it may be all mixed up with European dogs thanks to recent breeding events, its origins in the Americas makes it a very exciting lineage for sure!

### HAPLOTYPE: A228

Part of the large A1e haplogroup, we have spotted this haplotype in village dogs in the Democratic Republic of the Congo and in the Dominican Republic. Among breeds, we see it frequently in big dogs like Saint Bernards, Leonbergers, and Great Danes. However, we also see it in small breeds including wire Fox Terriers and Rat Terriers. That's a pretty wide size range!

## 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").

**No dark mask or grizzle (EE)**

### K Locus (CBD103)

The K Locus **K<sup>B</sup>** allele "overrides" the A Locus, meaning that it prevents the A Locus genotype from affecting coat color. For this reason, the **K<sup>B</sup>** allele is referred to as the "dominant black" allele. As a result, dogs with at least one **K<sup>B</sup>** 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<sup>Y</sup>k<sup>Y</sup>** genotype will show a coat color pattern based on the genotype they have at the A Locus. Dogs who test as **K<sup>B</sup>k<sup>Y</sup>** may be brindle rather than black or brown.

**More likely to have a patterned haircoat (k<sup>Y</sup>k<sup>Y</sup>)**

## TRAITS: COAT COLOR (CONTINUED)

<b>TRAIT</b>	<b>RESULT</b>
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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.

**Any light hair likely apricot or red (Intense 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<sup>Y</sup>k<sup>Y</sup>** 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.

**Black/Brown and tan coat color pattern (a<sup>t</sup>a<sup>t</sup>)**

### 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)**

## TRAITS: COAT COLOR (CONTINUED)

TRAIT	RESULT
<p><b>Cocoa (HPS3)</b></p> <p>Dogs with the <b>coco</b> genotype will produce dark brown pigment instead of black in both their hair and skin. Dogs with the <b>Nco</b> genotype will produce black pigment, but can pass the <b>co</b> allele on to their puppies. Dogs that have the <b>coco</b> genotype as well as the <b>bb</b> genotype at the B locus are generally a lighter brown than dogs that have the <b>Bb</b> or <b>BB</b> genotypes at the B locus.</p>	<p><b>No co alleles, not expressed (NN)</b></p>
<p><b>B Locus (TYRP1)</b></p> <p>Dogs with two copies of the <b>b</b> allele produce brown pigment instead of black in both their hair and skin. Dogs with one copy of the <b>b</b> allele will produce black pigment, but can pass the <b>b</b> allele on to their puppies. E Locus <b>ee</b> dogs that carry two <b>b</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".</p>	<p><b>Black or gray hair and skin (BB)</b></p>
<p><b>Saddle Tan (RALY)</b></p> <p>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 <b>II</b> 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 <b>a<sup>t</sup></b> allele, so dogs that do not express <b>a<sup>t</sup></b> are not influenced by this gene.</p>	<p><b>Not saddle tan patterned (II)</b></p>
<p><b>S Locus (MITF)</b></p> <p>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.</p>	<p><b>Likely solid colored, but may have small amounts of white (Ssp)</b></p>

## TRAITS: COAT COLOR (CONTINUED)

TRAIT	RESULT
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### 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.

No merle alleles (mm)

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)

## TRAITS: OTHER COAT TRAITS

TRAIT	RESULT
<p><b>Furnishings (RSPO2) LINKAGE</b></p> <p>Dogs with one or two copies of the <b>F</b> allele have “furnishings”: the mustache, beard, and eyebrows characteristic of breeds like the Schnauzer, Scottish Terrier, and Wire Haired Dachshund. A dog with two <b>I</b> 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.</p>	<p><b>Likely furnished (mustache, beard, and/or eyebrows) (FF)</b></p>
<p><b>Coat Length (FGF5)</b></p> <p>The FGF5 gene is known to affect hair length in many different species, including cats, dogs, mice, and humans. In dogs, the <b>T</b> allele confers a long, silky haircoat as observed in the Yorkshire Terrier and the Long Haired Whippet. The ancestral <b>G</b> 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.”</p>	<p><b>Likely long coat (TT)</b></p>
<p><b>Shedding (MC5R)</b></p> <p>Dogs with at least one copy of the ancestral <b>C</b> allele, like many Labradors and German Shepherd Dogs, are heavy or seasonal shedders, while those with two copies of the <b>T</b> 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.</p>	<p><b>Likely light shedding (TT)</b></p>
<p><b>Hairlessness (FOXI3) LINKAGE</b></p> <p>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 <b>NDup</b> genotype are likely to be hairless while dogs with the <b>NN</b> genotype are likely to have a normal coat. The <b>DupDup</b> 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.</p>	<p><b>Very unlikely to be hairless (NN)</b></p>
<p><b>Hairlessness (SGK3)</b></p> <p>Hairlessness in the American Hairless Terrier arises from a mutation in the SGK3 gene. Dogs with the <b>DD</b> result are likely to be hairless. Dogs with the <b>ND</b> genotype will have a normal coat, but can pass the <b>D</b></p>	<p><b>Very unlikely to be hairless (NN)</b></p>

## TRAITS: OTHER COAT TRAITS (CONTINUED)

TRAIT	RESULT
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### 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 (CC)

## TRAITS: OTHER BODY FEATURES

**TRAIT** **RESULT**

### Muzzle Length (BMP3)

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.

**Likely medium or long muzzle (AC)**

### Tail Length (T)

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.

**Likely normal-length tail (CC)**

### Hind Dewclaws (LMBR1)

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.

**Unlikely to have hind dew claws (CC)**

## 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)**

## TRAITS: BODY SIZE

TRAIT	RESULT
<b>Body Size (IGF1)</b> The I allele is associated with smaller body size.	<b>Smaller (II)</b>
<b>Body Size (IGFR1)</b> The A allele is associated with smaller body size.	<b>Intermediate (GA)</b>
<b>Body Size (STC2)</b> The A allele is associated with smaller body size.	<b>Larger (TT)</b>
<b>Body Size (GHR - E191K)</b> The A allele is associated with smaller body size.	<b>Smaller (AA)</b>
<b>Body Size (GHR - P177L)</b> The T allele is associated with smaller body size.	<b>Larger (CC)</b>

## TRAITS: PERFORMANCE

TRAIT	RESULT
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### 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)**

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### 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)**

## HEALTH REPORT

### How to interpret Kallie's genetic health results:

If Kallie 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 Kallie 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

Kallie is not at increased risk for the genetic health conditions that Embark tests.







### Clear results

**Breed-relevant** (7)

**Other** (248)



















## BREED-RELEVANT RESULTS

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



















 Degenerative Myelopathy, DM (SOD1A)	Clear
 GM2 Gangliosidosis (HEXB, Poodle Variant)	Clear
 Intervertebral Disc Disease (Type I) (FGF4 retrogene - CFA12)	Clear
 Neonatal Encephalopathy with Seizures, NEWS (ATF2)	Clear
 Osteochondrodysplasia (SLC13A1, Poodle Variant)	Clear
 Progressive Retinal Atrophy, prcd (PRCD Exon 1)	Clear
 Von Willebrand Disease Type I, Type I vWD (VWF)	Clear

## OTHER RESULTS



















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

 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
 ALT Activity (GPT)	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

## OTHER RESULTS

 Canine Multiple System Degeneration (SERAC1 Exon 4, Chinese Crested Variant)	Clear
 Canine Multiple System Degeneration (SERAC1 Exon 15, Kerry Blue Terrier Variant)	Clear
 Cardiomyopathy and Juvenile Mortality (YARS2)	Clear
 Centronuclear Myopathy, CNM (PTPLA)	Clear
 Cerebellar Hypoplasia (VLDLR, Eurasier Variant)	Clear
 Chondrodystrophy (ITGA10, Norwegian Elkhound and Karelian Bear Dog Variant)	Clear
 Cleft Lip and/or Cleft Palate (ADAMTS20, Nova Scotia Duck Tolling Retriever Variant)	Clear
 Cleft Palate, CP1 (DLX6 intron 2, Nova Scotia Duck Tolling Retriever Variant)	Clear
 Cobalamin Malabsorption (CUBN Exon 8, Beagle Variant)	Clear
 Cobalamin Malabsorption (CUBN Exon 53, Border Collie Variant)	Clear
 Collie Eye Anomaly (NHEJ1)	Clear
 Complement 3 Deficiency, C3 Deficiency (C3)	Clear
 Congenital Cornification Disorder (NSDHL, Chihuahua Variant)	Clear
 Congenital Hypothyroidism (TPO, Rat, Toy, Hairless Terrier Variant)	Clear
 Congenital Hypothyroidism (TPO, Tenterfield Terrier Variant)	Clear
 Congenital Hypothyroidism with Goiter (TPO Intron 13, French Bulldog Variant)	Clear
 Congenital Hypothyroidism with Goiter (SLC5A5, Shih Tzu Variant)	Clear
 Congenital Macrothrombocytopenia (TUBB1 Exon 1, Cairn and Norfolk Terrier Variant)	Clear

## OTHER RESULTS

 Congenital Myasthenic Syndrome, CMS (COLQ, Labrador Retriever Variant)	Clear
 Congenital Myasthenic Syndrome, CMS (COLQ, Golden Retriever Variant)	Clear
 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



















## OTHER RESULTS

- |  |       |
|--|-------|
| <input checked="" type="checkbox"/> Diffuse Cystic Renal Dysplasia and Hepatic Fibrosis (INPP5E Intron 9, Norwich Terrier Variant) | Clear |
| <input checked="" type="checkbox"/> Dilated Cardiomyopathy, DCM (RBM20, Schnauzer Variant)   | Clear |
| <input checked="" type="checkbox"/> Dilated Cardiomyopathy, DCM1 (PDK4, Doberman Pinscher Variant 1)                               | Clear |
| <input checked="" type="checkbox"/> Dilated Cardiomyopathy, DCM2 (TTN, Doberman Pinscher Variant 2)                                | Clear |
| <input checked="" type="checkbox"/> Disproportionate Dwarfism (PRKG2, Dogo Argentino Variant)                                      | Clear |
| <input checked="" type="checkbox"/> Dry Eye Curly Coat Syndrome (FAM83H Exon 5)  | Clear |
| <input checked="" type="checkbox"/> Dystrophic Epidermolysis Bullosa (COL7A1, Central Asian Shepherd Dog Variant)                  | Clear |
| <input checked="" type="checkbox"/> Dystrophic Epidermolysis Bullosa (COL7A1, Golden Retriever Variant)                            | Clear |
| <input checked="" type="checkbox"/> Early Bilateral Deafness (LOXHD1 Exon 38, Rottweiler Variant)                                  | Clear |
| <input checked="" type="checkbox"/> Early Onset Adult Deafness, EOAD (EPS8L2 Deletion, Rhodesian Ridgeback Variant)                | Clear |
| <input checked="" type="checkbox"/> Early Onset Cerebellar Ataxia (SEL1L, Finnish Hound Variant)                                   | Clear |
| <input checked="" type="checkbox"/> Ehlers Danlos (ADAMTS2, Doberman Pinscher Variant)   | Clear |
| <input checked="" type="checkbox"/> Enamel Hypoplasia (ENAM Deletion, Italian Greyhound Variant)                                   | Clear |
| <input checked="" type="checkbox"/> Enamel Hypoplasia (ENAM SNP, Parson Russell Terrier Variant)                                   | Clear |
| <input checked="" type="checkbox"/> Episodic Falling Syndrome (BCAN)   | Clear |
| <input checked="" type="checkbox"/> Exercise-Induced Collapse, EIC (DNM1)  | Clear |
| <input checked="" type="checkbox"/> Factor VII Deficiency (F7 Exon 5)  | Clear |
| <input checked="" type="checkbox"/> Factor XI Deficiency (F11 Exon 7, Kerry Blue Terrier Variant)                                  | Clear |



















## OTHER RESULTS

- |  |       |
|--|-------|
| <input checked="" type="checkbox"/> Familial Nephropathy (COL4A4 Exon 3, Cocker Spaniel Variant)   | Clear |
| <input checked="" type="checkbox"/> Familial Nephropathy (COL4A4 Exon 30, English Springer Spaniel Variant)  | Clear |
| <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, Phosphofruktokinase Deficiency, PFK Deficiency (PFKM, Whippet and English Springer Spaniel Variant) | Clear |
| <input checked="" type="checkbox"/> Glycogen storage disease Type VII, Phosphofruktokinase 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"/> Goniodysgenesis and Glaucoma, Pectinate Ligament Dysplasia, PLD (OLFM3)  | Clear |



















## OTHER RESULTS

 Hemophilia A (F8 Exon 11, German Shepherd Variant 1)	Clear
 Hemophilia A (F8 Exon 1, German Shepherd Variant 2)	Clear
 Hemophilia A (F8 Exon 10, Boxer Variant)	Clear
 Hemophilia B (F9 Exon 7, Terrier Variant)	Clear
 Hemophilia B (F9 Exon 7, Rhodesian Ridgeback Variant)	Clear
 Hereditary Ataxia, Cerebellar Degeneration (RAB24, Old English Sheepdog and Gordon Setter Variant)	Clear
 Hereditary Cataracts (HSF4 Exon 9, Australian Shepherd Variant)	Clear
 Hereditary Footpad Hyperkeratosis (FAM83G, Terrier and Kromfohrlander Variant)	Clear
 Hereditary Footpad Hyperkeratosis (DSG1, Rottweiler Variant)	Clear
 Hereditary Nasal Parakeratosis (SUV39H2 Intron 4, Greyhound Variant)	Clear
 Hereditary Nasal Parakeratosis, HNPk (SUV39H2)	Clear
 Hereditary Vitamin D-Resistant Rickets (VDR)	Clear
 Hypocatalasia, Acatlasemia (CAT)	Clear
 Hypomyelination and Tremors (FNIP2, Weimaraner Variant)	Clear
 Hypophosphatasia (ALPL Exon 9, Karelian Bear Dog Variant)	Clear
 Ichthyosis (NIPAL4, American Bulldog Variant)	Clear
 Ichthyosis (ASPRV1 Exon 2, German Shepherd Variant)	Clear
 Ichthyosis (SLC27A4, Great Dane Variant)	Clear

## OTHER RESULTS

 Ichthyosis, Epidermolytic Hyperkeratosis (KRT10, Terrier Variant)	Clear
 Ichthyosis, ICH1 (PNPLA1, Golden Retriever Variant)	Clear
 Inflammatory Myopathy (SLC25A12)	Clear
 Inherited Myopathy of Great Danes (BIN1)	Clear
 Inherited Selected Cobalamin Malabsorption with Proteinuria (CUBN, Komondor Variant)	Clear
 Intestinal Lipid Malabsorption (ACSL5, Australian Kelpie)	Clear
 Junctional Epidermolysis Bullosa (LAMA3 Exon 66, Australian Cattle Dog Variant)	Clear
 Junctional Epidermolysis Bullosa (LAMB3 Exon 11, Australian Shepherd Variant)	Clear
 Juvenile Epilepsy (LGI2)	Clear
 Juvenile Laryngeal Paralysis and Polyneuropathy (RAB3GAP1, Rottweiler Variant)	Clear
 Juvenile Myoclonic Epilepsy (DIRAS1)	Clear
 L-2-Hydroxyglutaricaciduria, L2HGA (L2HGDH, Staffordshire Bull Terrier Variant)	Clear
 Lagotto Storage Disease (ATG4D)	Clear
 Laryngeal Paralysis (RAPGEF6, Miniature Bull Terrier Variant)	Clear
 Late Onset Spinocerebellar Ataxia (CAPN1)	Clear
 Late-Onset Neuronal Ceroid Lipofuscinosis, NCL 12 (ATP13A2, Australian Cattle Dog Variant)	Clear
 Leonberger Polyneuropathy 1 (LPN1, ARHGEF10)	Clear
 Leonberger Polyneuropathy 2 (GJA9)	Clear



















## OTHER RESULTS

 Lethal Acrodermatitis, LAD (MKLN1)	Clear
 Leukodystrophy (TSEN54 Exon 5, Standard Schnauzer Variant)	Clear
 Ligneous Membranitis, LM (PLG)	Clear
 Limb Girdle Muscular Dystrophy (SGCD, Boston Terrier Variant)	Clear
 Limb-Girdle Muscular Dystrophy 2D (SGCA Exon 3, Miniature Dachshund Variant)	Clear
 Long QT Syndrome (KCNQ1)	Clear
 Lunde hund Syndrome (LEPREL1)	Clear
 Macular Corneal Dystrophy, MCD (CHST6)	Clear
 Malignant Hyperthermia (RYR1)	Clear
 May-Hegglin Anomaly (MYH9)	Clear
 Methemoglobinemia (CYB5R3, Pit Bull Terrier Variant)	Clear
 Methemoglobinemia (CYB5R3)	Clear
 Microphthalmia (RBP4 Exon 2, Soft Coated Wheaten Terrier Variant)	Clear
 Mucopolysaccharidosis IIIB, Sanfilippo Syndrome Type B, MPS IIIB (NAGLU, Schipperke Variant)	Clear
 Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6, Dachshund Variant)	Clear
 Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6, New Zealand Huntaway Variant)	Clear
 Mucopolysaccharidosis Type VI, Maroteaux-Lamy Syndrome, MPS VI (ARSB Exon 5, Miniature Pinscher Variant)	Clear
 Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 3, German Shepherd Variant)	Clear



















## OTHER RESULTS

- |   |       |
|---|-------|
| <input checked="" type="checkbox"/> Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 5, Terrier Brasileiro Variant) | Clear |
| <input checked="" type="checkbox"/> Multiple Drug Sensitivity (ABCB1)   | 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 |
| <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 23, Australian Cattle Dog 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 |



















## OTHER RESULTS

 Neuronal Ceroid Lipofuscinosis 2, NCL 2 (TPP1 Exon 4, Dachshund Variant 2)	Clear
 Neuronal Ceroid Lipofuscinosis 5, NCL 5 (CLN5 Exon 4 SNP, Border Collie Variant)	Clear
 Neuronal Ceroid Lipofuscinosis 5, NCL 5 (CLN5 Exon 4 Deletion, Golden Retriever Variant)	Clear
 Neuronal Ceroid Lipofuscinosis 6, NCL 6 (CLN6 Exon 7, Australian Shepherd Variant)	Clear
 Neuronal Ceroid Lipofuscinosis 7, NCL 7 (MFSD8, Chihuahua and Chinese Crested Variant)	Clear
 Neuronal Ceroid Lipofuscinosis 8, NCL 8 (CLN8, Australian Shepherd Variant)	Clear
 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



















## OTHER RESULTS

 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
 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 Lens Luxation (ADAMTS17)	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

## OTHER RESULTS

 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
 Protein Losing Nephropathy, PLN (NPHS1)	Clear
 Pyruvate Dehydrogenase Deficiency (PDP1, Spaniel Variant)	Clear
 Pyruvate Kinase Deficiency (PKLR Exon 5, Basenji Variant)	Clear
 Pyruvate Kinase Deficiency (PKLR Exon 7, Beagle Variant)	Clear
 Pyruvate Kinase Deficiency (PKLR Exon 10, Terrier Variant)	Clear
 Pyruvate Kinase Deficiency (PKLR Exon 7, Labrador Retriever Variant)	Clear
 Pyruvate Kinase Deficiency (PKLR Exon 7, Pug Variant)	Clear
 Raine Syndrome (FAM20C)	Clear
 Recurrent Inflammatory Pulmonary Disease, RIPD (AKNA, Rough Collie Variant)	Clear
 Renal Cystadenocarcinoma and Nodular Dermatofibrosis (FLCN Exon 7)	Clear
 Retina Dysplasia and/or Optic Nerve Hypoplasia (SIX6 Exon 1, Golden Retriever Variant)	Clear

## OTHER RESULTS

 Sensory Neuropathy (FAM134B, Border Collie Variant)	Clear
 Severe Combined Immunodeficiency, SCID (PRKDC, Terrier Variant)	Clear
 Severe Combined Immunodeficiency, SCID (RAG1, Wetterhoun Variant)	Clear
 Shaking Puppy Syndrome (PLP1, English Springer Spaniel Variant)	Clear
 Shar-Pei Autoinflammatory Disease, SPAID, Shar-Pei Fever (MTBP)	Clear
 Skeletal Dysplasia 2, SD2 (COL11A2, Labrador Retriever Variant)	Clear
 Skin Fragility Syndrome (PKP1, Chesapeake Bay Retriever Variant)	Clear
 Spinocerebellar Ataxia (SCN8A, Alpine Dachsbracke Variant)	Clear
 Spinocerebellar Ataxia with Myokymia and/or Seizures (KCNJ10)	Clear
 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
 Trapped Neutrophil Syndrome, TNS (VPS13B)	Clear
 Ullrich-like Congenital Muscular Dystrophy (COL6A3 Exon 10, Labrador Retriever Variant)	Clear

## OTHER RESULTS

- |  |       |
|--|-------|
| <input checked="" type="checkbox"/> Ullrich-like Congenital Muscular Dystrophy (COL6A1 Exon 3, Landseer Variant)                     | Clear |
| <input checked="" type="checkbox"/> Unilateral Deafness and Vestibular Syndrome (PTPRQ Exon 39, Doberman Pinscher)                   | Clear |
| <input checked="" type="checkbox"/> Urate Kidney & Bladder Stones (SLC2A9)   | Clear |
| <input checked="" type="checkbox"/> Von Willebrand Disease Type II, Type II vWD (VWF, Pointer Variant)                               | Clear |
| <input checked="" type="checkbox"/> Von Willebrand Disease Type III, Type III vWD (VWF Exon 4, Terrier Variant)                      | Clear |
| <input checked="" type="checkbox"/> Von Willebrand Disease Type III, Type III vWD (VWF Intron 16, Nederlandse Kooikerhondje Variant) | Clear |
| <input checked="" type="checkbox"/> Von Willebrand Disease Type III, Type III vWD (VWF Exon 7, Shetland Sheepdog Variant)            | Clear |
| <input checked="" type="checkbox"/> X-Linked Hereditary Nephropathy, XLHN (COL4A5 Exon 35, Samoyed Variant 2)                        | Clear |
| <input checked="" type="checkbox"/> X-Linked Myotubular Myopathy (MTM1, Labrador Retriever Variant)                                  | Clear |
| <input checked="" type="checkbox"/> X-Linked Progressive Retinal Atrophy 1, XL-PRA1 (RPGR)   | Clear |
| <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"/> $\beta$ -Mannosidosis (MANBA Exon 16, Mixed-Breed Variant)                                       | Clear |

## INBREEDING AND DIVERSITY

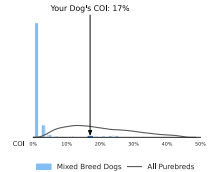
### CATEGORY

### 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.

17%

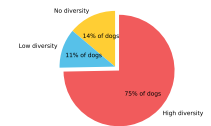


#### MHC Class II - DLA DRB1

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:

