AUGGIE

DNA Test Report | Test Date: June 25th, 2026 | embk.me/auggie1269

BREED MIX

Labrador Retriever : 100.0%

GENETIC STATS

Wolfiness: 0.3 % **LOW**
Predicted adult weight: **83 lbs**
Life stage: **Mature adult**
Based on your dog's date of birth provided.

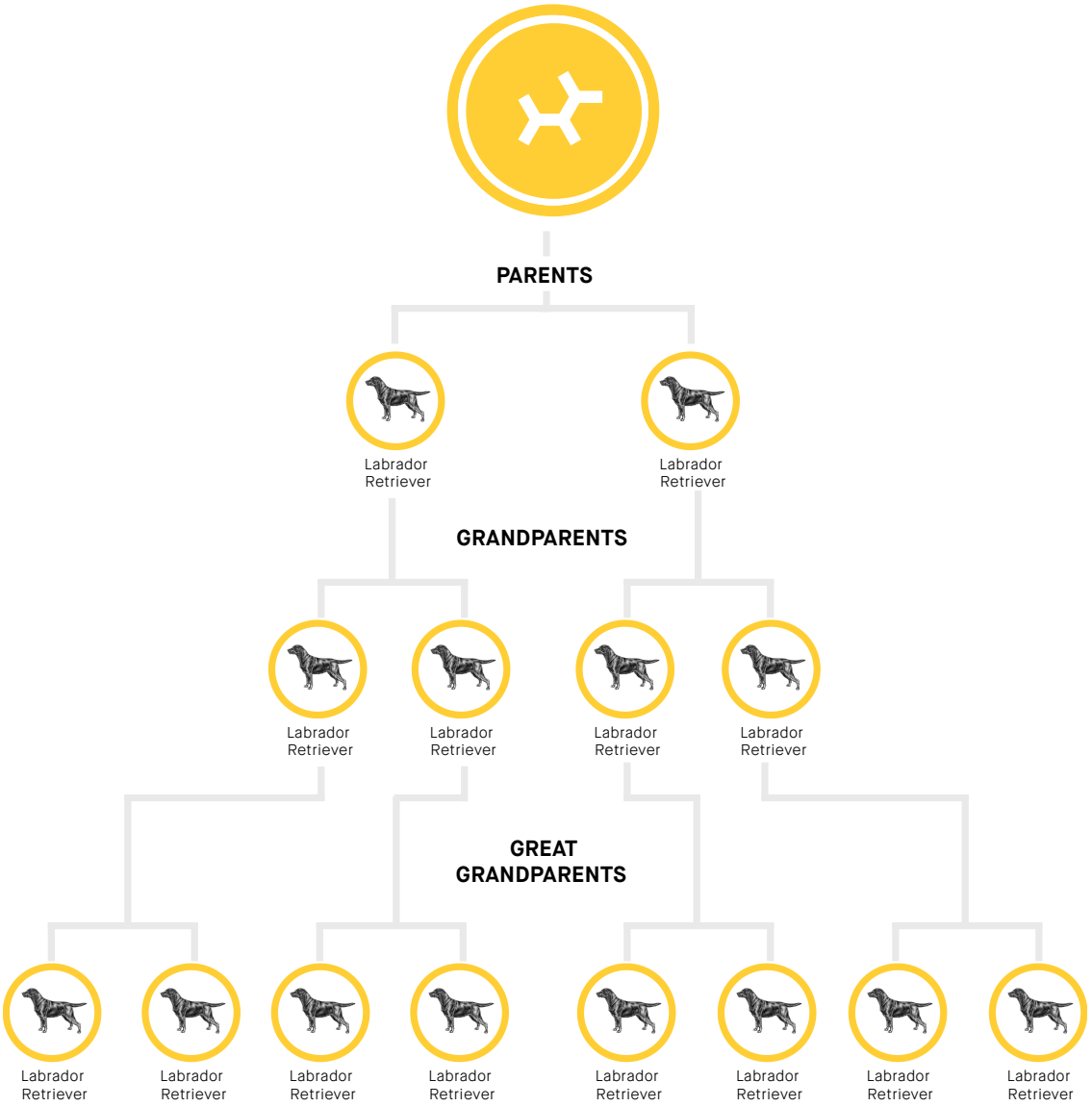
TEST DETAILS

Kit number: EM-60029848
Swab number: 31250760728347

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FAMILY TREE



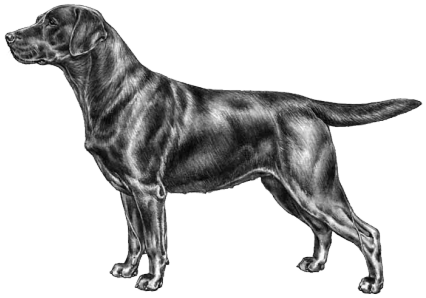
Replay Auggie's breed reveal!



(https://app.embarkvet.com/pet/61c3a987-152c-49f3-9f7f-9e8b56cc067c/breed-reveal)

embark

AUGGIE



LABRADOR RETRIEVER

The Labrador Retriever has been the most popular AKC breed in the United States every year for the past 25 years. Their origins have been traced to the St. John's dog, named for the capital city of the Canadian province "Newfoundland and Labrador." The St. John's was developed from imported European dogs for fishing and hunting on the island of Newfoundland in the 18th century. During the 19th century St John's were bred in England and developed into the Labradors we know and love. Labradors were recognized as a breed by the British Kennel Club in 1903 and by the AKC in 1917. With their friendly dispositions and weatherproof build, they are terrific family dogs and outdoor companions. Most Labradors are very active with an appetite to match, and need plenty of exercise. Labradors often love to swim. Their double-coated weather-resistant fur can cause heavy shedding. Great hunting dogs and popular household companions, Labrador Retrievers are also employed as guide dogs and search-and-rescue dogs.

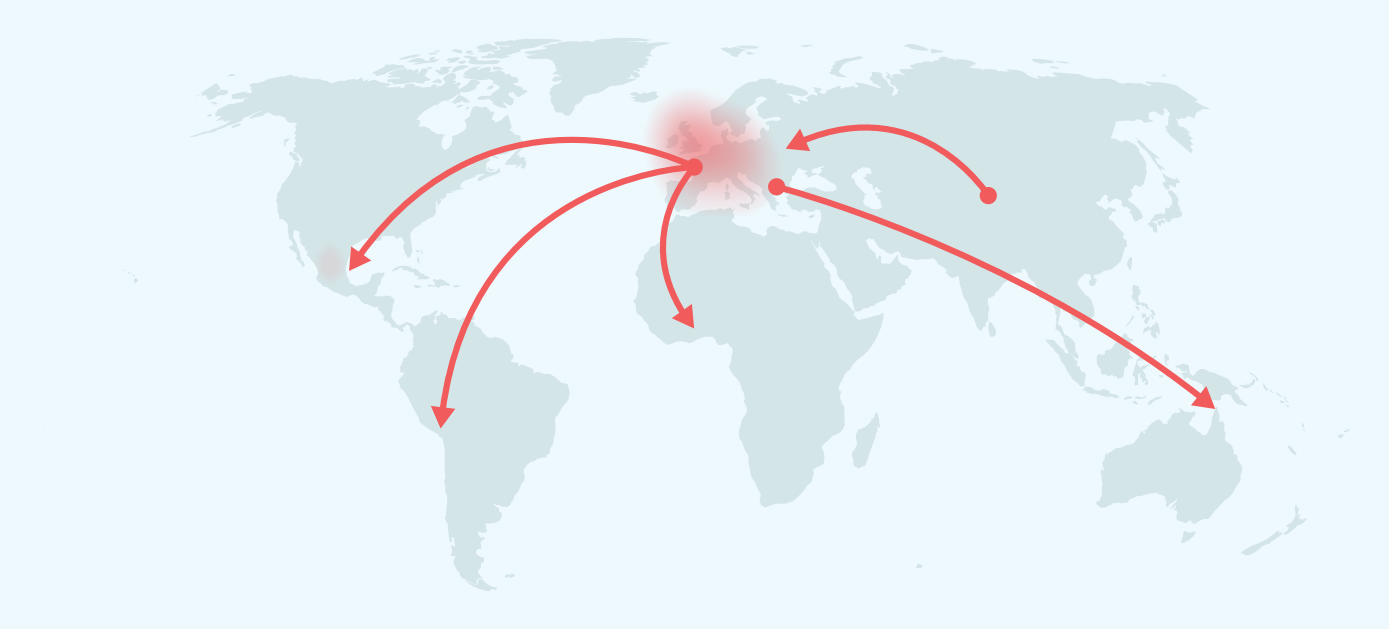
Fun Fact

We're pretty sure Labradors came from the island of Newfoundland, and many experts believe that the Newfoundland breed was developed in neighboring Labrador! By our calculations, there are 10 times as many Labradors in North America than there are people living in Labrador and Newfoundland.

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MATERNAL LINE



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

HAPLOGROUP: A1b

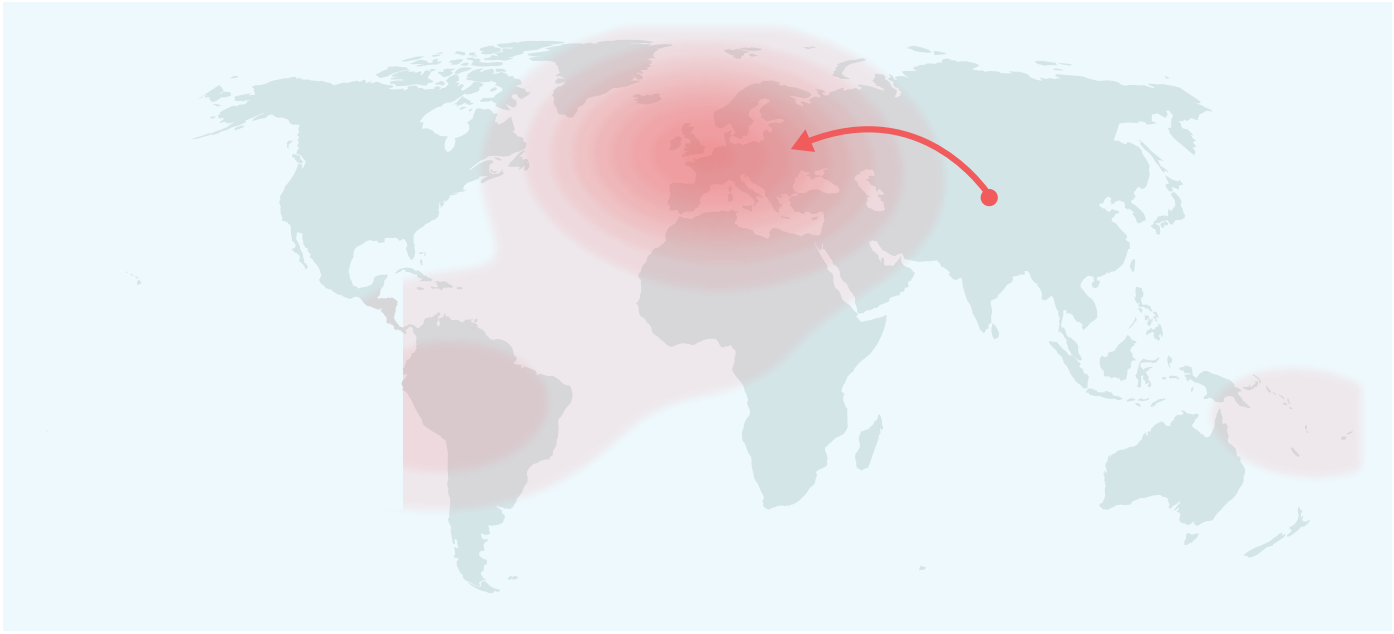
This female lineage was very likely one of the original lineages in the wolves that were first domesticated into dogs in Central Asia about 15,000 years ago. Since then, the lineage has been very successful and travelled the globe! Dogs from this group are found in ancient Bronze Age fossils in the Middle East and southern Europe. By the end of the Bronze Age, it became exceedingly common in Europe. These dogs later became many of the dogs that started some of today's most popular breeds, like German Shepherds, Pugs, Whippets, English Sheepdogs and Miniature Schnauzers. During the period of European colonization, the lineage became even more widespread as European dogs followed their owners to far-flung places like South America and Oceania. It's now found in many popular breeds as well as village dogs across the world!

HAPLOTYPE: A268

Part of the large A1b haplogroup, this uncommon haplotype occurs most frequently in Labrador Retrievers and has been spotted less often in Golden Retrievers, Poodles, and Chihuahuas.

AUGGIE

PATERNAL LINE



Through Auggie's Y chromosome we can trace his father's ancestry back to where dogs and people first became friends. This map helps you visualize the routes that his ancestors took to your home. Their story is described below the map.

HAPLOGROUP: A2b

A2b appears to have split a few times in succession, which means that some of the Central Asian male ancestors of this lineage went their separate ways before their respective Y chromosomes made their rounds. There is not much diversity in this lineage, meaning that it has only begun to take off recently. Two iconic breeds, the Dachshund and Bloodhound, represent this lineage well. Over half of Rottweilers are A2b, as are the majority of Labrador Retrievers and Cavalier King Charles Spaniels. While A2a is restricted mostly to East Asia, this paternal line is also found among European breeds.

HAPLOTYPE: Hc.17

Part of the A2b haplogroup, this haplotype occurs most frequently in mixed breed dogs.

AUGGIE

TRAITS: BASE COAT COLOR

TRAIT	RESULT
Dark or Light Fur | *E (Extension) Locus* | *Gene: Melanocortin Receptor 1 (MC1R)* | Genetic Result: **ee** This gene helps determine whether a dog can produce dark (black or brown) hairs or lighter yellow or red hairs. Any result except for **ee** means that the dog can produce dark hairs. An **ee** result means that the dog does not produce dark hairs and will have lighter yellow or red hairs all over its entire body. The overall MC1R genetic result is influenced by more subloci than those presented in this section. Additional MC1R subloci results can be found under the **Coat Color Modifiers** > **Facial Fur Pattern** section below. **Did You Know?** If a dog has an **ee** result, then the fur's actual shade can range from a deep copper to white - the exact color cannot be predicted solely from this result and will depend on other genetic factors, including the red pigment intensity test.	**Light colored fur (cream to red)**
Dark brown pigment | *Cocoa* | *Gene: HPS3* | Genetic Result: **NN** 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** variant 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. **Did You Know?** The **co** variant and the dark brown "cocoa" coat color have only been documented in French Bulldogs. Dogs with the cocoa coat color are sometimes born with light brown coats that darken as they reach maturity.	**No impact on skin color**
Red Pigment Intensity | *I (Intensity) Loci* | Genetic Result: **Intermediate Red Pigmentation** Intensity refers to the concentration of red pigment in the coat. Dogs with more densely concentrated (intense) pigment will be a deeper red, while dogs with less concentrated (dilute) pigment will be tan, yellow, cream, or white. Five locations in the dog genome explain approximately 70% of red pigmentation intensity variation across all dogs. Because the locations we test may not directly cause differences in red pigmentation intensity, we consider this to be a linkage test. **Did You Know?** One of the genes that influences pigment intensity in dogs, TYR, is also responsible for intensity variation in domestic mice, cats, cattle, rabbits, and llamas. In dogs and humans, more genes are involved.	**Any pigmented fur likely yellow or tan**

TRAITS: BASE COAT COLOR (CONTINUED)

TRAIT	RESULT
Brown or Black Pigment | *B (Brown) Locus* | *Gene: Tyrosinase Related Protein 1 (TYRP1)* | Genetic Result: **BB** This gene helps determine whether a dog produces brown or black pigments. Dogs with a **bb** result produce brown pigment instead of black in both their hair and skin, while dogs with a **Bb** or **BB** result produce black pigment. Dogs that have **ee** at the E (Extension) Locus and **bb** at this B (Brown) Locus are likely to have red or cream coats and brown noses, eye rims, and footpads, which is sometimes referred to as "Dudley Nose" in Labrador Retrievers. **Did You Know?** "Liver" or "chocolate" is the preferred color term for brown in most breeds; in the Doberman Pinscher it is referred to as "red".	**Likely black colored nose/feet**
Color Dilution | *D (Dilute) Locus* | *Gene: Melanophilin (MLPH)* | Genetic Result: **DD** This gene helps determine whether a dog has lighter "diluted" pigment. A dog with a **Dd** or **DD** result will not be dilute. A dog with a **dd** result will have all their black or brown pigment lightened ("diluted") to gray or light brown, and may lighten red pigment to cream. This affects their fur, skin, and sometimes eye color. The D locus result that we report is determined by three different genetic variants that can work together to cause diluted pigmentation. These are the common **d** allele, also known as "**d1**", and the less common alleles known as "**d2**" and "**d3**". Dogs with two **d** alleles, regardless of which variant, are typically dilute. **Did You Know?** There are many breed-specific names for these dilute colors, such as "blue", "charcoal", "fawn", "silver", and "Isabella". Dilute dogs, especially in certain breeds, have a higher incidence of Color Dilution Alopecia which causes hair loss in some patches.	**Dark (non-dilute) skin**

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TRAITS: COAT COLOR MODIFIERS

TRAIT	RESULT
Hidden Patterning | *K (Dominant Black) Locus* | *Gene: Canine Beta-Defensin 103 (CBD103)* | Genetic Result: **K^BK^y** This gene helps determine whether the dog has a black coat. Dogs with a **k^yk^y** result will show a coat color pattern based on the result they have at the A (Agouti) Locus. A **K^BK^B** or **K^Bk^y** result means the dog is dominant black, which overrides the fur pattern that would otherwise be determined by the A (Agouti) Locus. These dogs will usually have solid black or brown coats, or if they have **ee** at the E (Extension) Locus then red/cream coats, regardless of their result at the A (Agouti) Locus. Dogs who test as **K^Bk^y** may be brindle rather than black or brown. **Did You Know?** Even if a dog is "dominant black" several other genes could still impact the dog's fur and cause other patterns, such as white spotting.	**No impact on coat color**
Body Pattern | *A (Agouti) Locus* | *Gene: Agouti Signalling Protein (ASIP)* | Genetic Result: **a^ya^t** This gene is responsible for causing different coat patterns. It only affects the fur of dogs that do not have **ee** at the E (Extension) Locus and do have **k^yk^y** at the K (Dominant Black) Locus. It controls switching between black and red pigment in hair cells, which means that it can cause a dog to have hairs that have sections of black and sections of red/cream, or hairs with different colors on different parts of the dog's body. Sable or Fawn dogs have a mostly or entirely red coat with some interspersed black hairs. Agouti or 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. **Did You Know?** The ASIP gene causes interesting coat patterns in many other species of animals as well as dogs.	**No impact on coat pattern**

TRAITS: COAT COLOR MODIFIERS (CONTINUED)

TRAIT	RESULT
Facial Fur Pattern | *E (Extension) Locus* | *Gene: Melanocortin Receptor 1 (MC1R)* | Genetic Result: **ee** This gene determines whether a dog can have dark hair and can give it a black "mask" or "widow's peak," unless the dog has overriding coat color genetic factors. Dogs with one or two copies of $\mathbf{E^m}$ in their result may have a mask, which is dark facial fur as seen in the German Shepherd Dog and Pug. Dogs with no $\mathbf{E^m}$ in their result but one or two copies of the $\mathbf{E^g}$, $\mathbf{E^a}$, or $\mathbf{E^h}$ variants can instead have a "widow's peak", which is dark forehead fur. **Did You Know?** The "widow's peak" is seen in the Afghan Hound and Borzoi, and is called either "grizzle" or "domino." In the absence of $\mathbf{E^m}$, dogs with the $\mathbf{E^g}$ variant can have a "widow's peak" phenotype. In the absence of both $\mathbf{E^m}$ and **E** variants, dogs with the $\mathbf{E^a}$ or $\mathbf{E^h}$ variants can express the "widow's peak" phenotype. Additionally, a dog with any combination of two of the $\mathbf{E^g}$, $\mathbf{E^a}$, or $\mathbf{E^h}$ variants (example: $\mathbf{E^gE^a}$) is also expected to express the grizzle phenotype.	**No dark fur anywhere**
Saddle Tan | *Gene: RALY* | Genetic Result: **NI** 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 $\mathbf{a^t}$ allele, so dogs that do not express $\mathbf{a^t}$ are not influenced by this gene. **Did You Know?** The Saddle Tan pattern is characteristic of breeds like the Corgi, Beagle, and German Shepherd.	**No impact on coat pattern**

TRAITS: COAT COLOR MODIFIERS (CONTINUED)

TRAIT	RESULT
White Spotting | *S (White Spotting) Locus* | *Gene: MITF* | Genetic Result: **SS** This gene is responsible for most of the white spotting observed in dogs. Dogs with a result of **spsp** will have a nearly white coat or large patches of white in their coat. Dogs with a result of **Ssp** will have more limited white spotting that is breed-dependent. A result of **SS** means that a dog likely has no white or minimal white in their coat. The S Locus does not explain all white spotting patterns in dogs and other causes are currently being researched. Some dogs may have small amounts of white on the paws, chest, face, or tail regardless of their result at this gene. **Did You Know?** Any dog can have white spotting regardless of coat color. The colored sections of the coat will reflect the dog's other genetic coat color results.	**Likely to have little to no white in coat**
Roan | *R (Roan) Locus* | *Gene: USH2A* | Genetic Result: **rr** This gene, along with the S Locus, regulates whether a dog will have roaning. Dogs with at least one copy of **R** will likely have roaning on otherwise uniformly unpigmented white areas created by the S Locus. Roan may not be visible if white spotting is limited to small areas, such as the paws, chest, face, or tail. The extent of roaning varies from uniform roaning to non-uniform roaning, and patchy, non-uniform roaning may look similar to ticking. Roan does not appear in white areas created by other genes, such as a combination of the E Locus and I Locus (for example, Samoyeds). The roan pattern can appear with or without ticking. **Did You Know?** Roan, tick, and Dalmatians' spots become visible a few weeks after birth. The R Locus is probably involved in the development of Dalmatians' spots.	**Likely no impact on coat pattern**
Merle | *M (Merle) Locus* | *Gene: PMEL* | Genetic Result: **mm** This gene is responsible for mottled or patchy coat color in some dogs. Dogs with an **M*m** result are likely to appear 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 have merle or double merle coat patterning. Dogs with an **mm** result are unlikely to have a merle coat pattern. **Did You Know?** Merle coat patterning is common to several dog breeds including the Australian Shepherd, Catahoula Leopard Dog, and Shetland Sheepdog.	**No impact on coat color**

TRAITS: COAT COLOR MODIFIERS (CONTINUED)

TRAIT	RESULT
Harlequin | *Gene: PSMB* | Genetic Result: **hh** This gene, along with the M Locus, determines whether a dog will have harlequin patterning. 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. **Did You Know?** While many harlequin dogs are white with black patches, some dogs have grey, sable, or brindle patches of color, depending on their genotypes at other coat color genes.	**No impact on coat pattern**
Panda White Spotting | *Gene: KIT* | Genetic Result: **NN** Panda White Spotting originated in a line of German Shepherd Dogs and causes a mostly symmetrical white spotting of the head and/or body. This is a dominant variant of the KIT gene, which has a role in pigmentation. Dogs with one copy of the **I** allele will exhibit this white spotting. Dogs with two copies of the **I** allele have never been observed, as two copies of the variant is suspected to be lethal to the developing embryo. Dogs with the **NN** result will not exhibit white spotting due to this variant. **Did You Know?** A de novo mutation (a genetic mutation not inherited from the parents) occurred in a female German Shepherd Dog named Lewcinka's Franka von Phenom. She was born in 2000, and all Panda Shepherds can trace their bloodline back to her.	**Not expected to display Panda pattern**

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TRAITS: OTHER COAT TRAITS

TRAIT	RESULT
Furnishings | *Gene: RSPO2* | Genetic Result: **II** This gene is responsible for "furnishings", which is another name for the mustache, beard, and eyebrows that are characteristic of breeds like the Schnauzer, Scottish Terrier, and Wire Haired Dachshund. A dog with an **FF** or **FI** result is likely to have furnishings. A dog with an **II** result will not have furnishings. We measure this result using a linkage test. **Did You Know?** In breeds that are expected to have furnishings, dogs without furnishings are the exception - this is sometimes called an "improper coat".	**Likely unfurnished (no mustache, beard, and/or eyebrows)**
Coat Length | *Gene: FGF5* | Genetic Result: **ShSh** This gene affects hair length in many species, including cats, dogs, mice, and humans. In dogs, an **Lh** allele confers a long, silky hair coat across many breeds, including Yorkshire Terriers, Cocker Spaniels, and Golden Retrievers. An **ShSh** or **ShLh** result is likely to mean a shorter coat, like in the Boxer or the American Staffordshire Terrier. The coat length determined by FGF5, as reported by us, is influenced by four genetic variants that work together to promote long hair. The most common of these is the **Lh1** variant (G/T, CanFam3.1, chr32, g.4509367) and the less common ones are **Lh2** (C/T, CanFam3.1, chr32, g.4528639), **Lh3** (16bp deletion, CanFam3.1, chr32, g.4528616), and **Lh4** (GG insertion, CanFam3.1, chr32, g.4528621). The FGF5_Lh1 variant is found across many dog breeds. The less common variants, FGF5_Lh2 have been found in the Akita, Samoyed, and Siberian Husky, FGF5_Lh3 have been found in the Eurasier, and FGF5_Lh4 have been found in the Afghan Hound, Eurasier, and French Bulldog. The **Lh** alleles have a recessive mode of inheritance, meaning that two copies of the **Lh** alleles are required to have long hair. The presence of two Lh alleles at any of these FGF5 loci is expected to result in long hair. One copy each of **Lh1** and **Lh2** have been found in Samoyeds, one copy each of **Lh1** and **Lh3** have been found in Eurasiers and one copy each of **Lh1** and **Lh4** have been found in Afghan Hounds and Eurasiers. **Did You Know?** In certain breeds, such as Pembroke Welsh Corgi and French Bulldog, the long coat is described as "fluffy."	**Likely short or mid-length coat**

TRAITS: OTHER COAT TRAITS (CONTINUED)

TRAIT	RESULT
Shedding | *Gene: MC5R* | Genetic Result: **CT** This gene affects how much a dog sheds. Dogs with furnishings or wire-haired coats tend to be low shedders regardless of their result for this gene. In other dogs, a **CC** or **CT** result indicates heavy or seasonal shedding, like many Labradors and German Shepherd Dogs. Dogs with a **TT** result tend to be lighter shedders, like Boxers, Shih Tzus and Chihuahuas.	**Likely heavy/seasonal shedding**
Coat Texture | *Gene: KRT71* | Genetic Result: **CC** For dogs with long fur, dogs with a **TT** or **CT** result will likely have a wavy or curly coat like the coat of Poodles and Bichon Frises. Dogs with a **CC** result will likely have a straight coat—unless the dog has a "Likely Furnished" result for the Furnishings trait, since this can also make the coat more curly. **Did You Know?** Dogs with short coats may have straight coats, whatever result they have for this gene.	**Likely straight coat**
Hairlessness (Xolo type) | *Gene: FOXI3* | Genetic Result: **NN** This gene can cause hairlessness over most of the body as well as changes in tooth shape and number. This particular gene occurs in Peruvian Inca Orchid, Xoloitzcuintli (Mexican Hairless), and Chinese Crested; other hairless breeds are due to different genes. Dogs with the **NDup** result are likely to be hairless while dogs with the **NN** result are likely to have a normal coat. We measure this result using a linkage test. **Did You Know?** The **DupDup** result has never been observed, suggesting that dogs with that genotype cannot survive to birth.	**Very unlikely to be hairless**
Hairlessness (Terrier type) | *Gene: SGK3* | Genetic Result: **NN** This gene is responsible for Hairlessness in the American Hairless Terrier. 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** variant on to their offspring.	**Very unlikely to be hairless**

Oculocutaneous Albinism Type 2 | *Gene: SLC45A2* | Genetic Result: **NN**

This gene causes oculocutaneous albinism (OCA), also known as Doberman Z Factor Albinism. Dogs with a **DD** result will have OCA. Effects include severely reduced or absent pigment in the eyes, skin, and hair, and sometimes vision problems due to lack of eye pigment (which helps direct and absorb ambient light) and are prone to sunburn. Dogs with a **ND** result will not be affected, but can pass the mutation on to their offspring. We measure this result using a linkage test.

Did You Know? 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.

Likely not albino

AUGGIE

TRAITS: OTHER BODY FEATURES

TRAIT	RESULT
Muzzle Length | *Gene: BMP3* | Genetic Result: **CC** This gene affects muzzle length. A dog with a **AC** or **CC** result is likely to have a medium-length muzzle like a Staffordshire Terrier or Labrador, or a long muzzle like a Whippet or Collie. A dog with a **AA** result is likely to have a short muzzle, like an English Bulldog, Pug, or Pekingese. **Did You Know?** At least five different genes affect snout length in dogs, with BMP3 being the only one with a known causal mutation. For example, the muzzle length of some breeds, including the long-snouted Scottish Terrier or the short-snouted Japanese Chin, appear to be caused by other genes. This means your dog may have a long or short snout due to other genetic factors. Embark is working to figure out what these might be.	**Likely medium or long muzzle**
Tail Length | *Gene: T* | Genetic Result: **CC** This is one of the genes that can cause a short bobtail. Most dogs have a **CC** result and a long tail. Dogs with a **CG** result are likely to have a bobtail, which is an unusually short or absent tail. This can be seen in many "natural bobtail" 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 such a result do not survive to birth. **Did You Know?** 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, it is not always caused by this gene. This suggests that other unknown genetic effects can also lead to a natural bobtail.	**Likely normal-length tail**
Hind Dew Claws | *Gene: LMBR1* | Genetic Result: **CC** This is one of the genes that can cause hind dew claws, which are extra, nonfunctional digits located midway between a dog's paw and hock. Dogs with a **CT** or **TT** result have about a 50% chance of having hind dewclaws. Hind dew claws can also be caused by other, still unknown, genes. Embark is working to figure those out. **Did You Know?** Hind dew claws are commonly found in certain breeds such as the Saint Bernard.	**Unlikely to have hind dew claws**

TRAITS: OTHER BODY FEATURES (CONTINUED)

TRAIT	RESULT
Back Muscling & Bulk (Large Breed) | *Gene: ACSL4* | Genetic Result: **CC** This gene can cause 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. A dog with the **TT** result is likely to have heavy muscling. Leaner-shaped large breed dogs like the Great Dane, Irish Wolfhound, and Scottish Deerhound generally have a **CC** result. The **TC** result also indicates likely normal muscling. **Did You Know?** This gene does not seem to affect muscling in small or even mid-sized dog breeds with lots of back muscling, including the American Staffordshire Terrier, Boston Terrier, and the English Bulldog.	**Likely normal muscling**
Eye Color | *Gene: ALX4* | Genetic Result: **NN** This gene is associated with blue eyes in Arctic breeds like Siberian Husky as well as tri-colored (non-merle) Australian Shepherds. Dogs with a **DupDup** or **NDup** result are more likely to have blue eyes, although some dogs may have only one blue eye or may not have blue eyes at all; nevertheless, they can still pass blue eyes to their offspring. Dogs with a **NN** result may have blue eyes due to other factors, such as merle or white spotting. We measure this result using a linkage test. **Did You Know?** Embark researchers discovered this gene by studying data from dogs like yours. Who knows what we will be able to discover next? Answer the questions on our research surveys to contribute to future discoveries!	**Less likely to have blue eyes**
Chondrodysplasia (Leg Length) | *Gene: Chr. 18 FGF4 Retrogene* | Genetic Result: **NN** This variant is associated with a type of disproportionate dwarfism known as chondrodysplasia (CDPA). CDPA is a breed-defining characteristic of many breeds exhibiting a "short-legged, long-bodied" appearance, such as Corgis, Dachshunds, Basset Hounds, and others. Dogs with the **II** result display the largest reduction in leg length. Dogs with the **NI** genotype will have an intermediate leg length, while dogs with the **NN** result will not exhibit leg shortening due to this variant. **Did You Know?** A similar genetic variant called the chondrodystrophy (CDDY) variant also plays an important role in shortening the leg length of many breeds. Dog breeds with the shortest legs, like the Corgi, Dachshund, and Basset Hound generally have one or two copies of the CDDY and CDPA variants. CDDY (but not CDPA) is also associated with an increased risk of Type I Intervertebral Disc Disease (IVDD). You can see the CDDY result in the health test results under "Intervertebral Disc Disease Type I".	**Likely to have normal leg length**

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TRAITS: BODY SIZE

TRAIT	RESULT
Body Size 1 | *Gene: IGF1* | Genetic Result: **NI** This is one of several genes that influence the size of a dog. A result of **II** for this gene is associated with smaller body size. A result of **NN** is associated with larger body size.	**Intermediate**
Body Size 2 | *Gene: IGFR1* | Genetic Result: **GG** This is one of several genes that influence the size of a dog. A result of **AA** for this gene is associated with smaller body size. A result of **GG** is associated with larger body size.	**Larger**
Body Size 3 | *Gene: STC2* | Genetic Result: **TT** This is one of several genes that influence the size of a dog. A result of **AA** for this gene is associated with smaller body size. A result of **TT** is associated with larger body size.	**Larger**
Body Size 4 | *Gene: GHR - E191K* | Genetic Result: **GG** This is one of several genes that influence the size of a dog. A result of **AA** for this gene is associated with smaller body size. A result of **GG** is associated with larger body size.	**Larger**
Body Size 5 | *Gene: GHR - P177L* | Genetic Result: **CC** This is one of several genes that influence the size of a dog. A result of **TT** for this gene is associated with smaller body size. A result of **CC** is associated with larger body size.	**Larger**

AUGGIE

TRAITS: PERFORMANCE

TRAIT	RESULT
Altitude Adaptation | *Gene: EPAS1* | Genetic Result: **GG** This gene causes dogs to be especially tolerant of low oxygen environments, such as those found at high elevations. Dogs with a **AA** or **GA** result will be less susceptible to "altitude sickness." **Did You Know?** This gene was originally identified in breeds from high altitude areas such as the Tibetan Mastiff.	**Normal altitude tolerance**
Appetite | *Gene: POMC* | Genetic Result: **ND** This gene influences eating behavior. An **ND** or **DD** result would predict higher food motivation compared to **NN** result, increasing the likelihood 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. **Did You Know?** POMC is actually short for "proopiomelanocortin," and is a large protein that is broken up into several smaller proteins that have biological activity. The smaller proteins generated from POMC control, among other things, distribution of pigment to the hair and skin cells, appetite, and energy expenditure.	**Likely to be more food motivated**

AUGGIE

HEALTH REPORT

How to interpret Auggie's genetic health results:

If Auggie 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 Auggie 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

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

Clear results

Breed-relevant (25)

Other (248)

AUGGIE

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BREED-RELEVANT RESULTS

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

Alexander Disease (GFAP)	Clear
Canine Elliptocytosis (SPTB Exon 30)	Clear
Centronuclear Myopathy, CNM (PTPLA)	Clear
Congenital Dyserythropoietic Anemia and Polymyopathy (EHPB1L1, Labrador Retriever Variant)	Clear
Congenital Myasthenic Syndrome, CMS (COLQ, Labrador Retriever Variant)	Clear
Copper Toxicosis (Accumulating) (ATP7B)	Clear
Day Blindness (CNGA3 Exon 7, Labrador Retriever Variant)	Clear
Degenerative Myelopathy, DM (SOD1A)	Clear
Ehlers-Danlos Syndrome (EDS) (COL5A1, Labrador Retriever Variant)	Clear
Exercise-Induced Collapse, EIC (DNM1)	Clear
Golden Retriever Progressive Retinal Atrophy 2, GR-PRA2 (TTC8)	Clear
Hereditary Nasal Parakeratosis, HNPK (SUV39H2)	Clear
Laryngeal Paralysis and Polyneuropathy (CNTNAP1, Leonberger, Saint Bernard, and Labrador Retriever variant)	Clear
Macular Corneal Dystrophy, MCD (CHST6)	Clear
Muscular Dystrophy-Dystroglycanopathy (LARGE1, Labrador Retriever Variant)	Clear
Myotonia Congenita (CLCN1 Exon 19, Labrador Retriever Variant)	Clear
Narcolepsy (HCRTR2 Intron 6, Labrador Retriever Variant)	Clear
Progressive Retinal Atrophy, crd4/cord1 (RPGRIP1)	Clear

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BREED-RELEVANT RESULTS

Progressive Retinal Atrophy, prcd (PRCD Exon 1)	Clear
Pyruvate Kinase Deficiency (PKLR Exon 7, Labrador Retriever Variant)	Clear
Skeletal Dysplasia 2, SD2 (COL11A2, Labrador Retriever Variant)	Clear
Stargardt Disease (ABCA4 Exon 28, Labrador Retriever Variant)	Clear
Ullrich-like Congenital Muscular Dystrophy (COL6A3 Exon 10, Labrador Retriever Variant)	Clear
Urate Kidney & Bladder Stones (SLC2A9)	Clear
X-Linked Myotubular Myopathy (MTM1, Labrador Retriever Variant)	Clear

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OTHER RESULTS

Research has not yet linked these conditions to dogs with similar breeds to Auggie. Review any increased risk or notable results to understand his 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
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 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
Canine Multiple System Degeneration (SERAC1 Exon 4, Chinese Crested Variant)	Clear
Canine Multiple System Degeneration (SERAC1 Exon 15, Kerry Blue Terrier Variant)	Clear

AUGGIE

OTHER RESULTS

Cardiomyopathy and Juvenile Mortality (YARS2)	Clear
Cerebellar Hypoplasia (VLDLR, Eurasier Variant)	Clear
Chondrodysplasia (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
Congenital Muscular Dystrophy (LAMA2, Italian Greyhound)	Clear
Congenital Myasthenic Syndrome, CMS (COLQ, Golden Retriever Variant)	Clear
Congenital Myasthenic Syndrome, CMS (CHAT, Old Danish Pointing Dog Variant)	Clear

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OTHER RESULTS

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
Copper Toxicosis (Attenuating) (ATP7A, Labrador Retriever)	Clear
Copper Toxicosis (Attenuating) (RETN, Labrador Retriever)	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
Darier Disease (ATP2A2, Irish Terrier Variant)	Clear
Day Blindness (CNGB3 Deletion, Alaskan Malamute Variant)	Clear
Day Blindness (CNGA3 Exon 7, German Shepherd 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

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OTHER RESULTS

Dilated Cardiomyopathy, DCM (RBM20, Schnauzer Variant)	Clear
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
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

Fanconi Syndrome (FAN1, Basenji Variant)	Clear
Fetal-Onset Neonatal Neuroaxonal Dystrophy (MFN2, Giant Schnauzer Variant)	Clear
Glanzmann's Thrombasthenia Type I (ITGA2B Exon 13, Great Pyrenees Variant)	Clear
Glanzmann's Thrombasthenia Type I (ITGA2B Exon 12, Otterhound Variant)	Clear
Globoid Cell Leukodystrophy, Krabbe disease (GALC Exon 5, Terrier Variant)	Clear
Glycogen Storage Disease Type IA, Von Gierke Disease, GSD IA (G6PC1, German Pinscher Variant)	Clear
Glycogen Storage Disease Type IA, Von Gierke Disease, GSD IA (G6PC, Maltese Variant)	Clear
Glycogen Storage Disease Type IIIA, GSD IIIA (AGL, Curly Coated Retriever Variant)	Clear
Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM, Whippet and English Springer Spaniel Variant)	Clear
Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM, Wachtelhund Variant)	Clear
GM1 Gangliosidosis (GLB1 Exon 2, Portuguese Water Dog Variant)	Clear
GM1 Gangliosidosis (GLB1 Exon 15, Shiba Inu Variant)	Clear
GM1 Gangliosidosis (GLB1 Exon 15, Alaskan Husky Variant)	Clear
GM2 Gangliosidosis (HEXA, Japanese Chin Variant)	Clear
GM2 Gangliosidosis (HEXB, Poodle Variant)	Clear
Golden Retriever Progressive Retinal Atrophy 1, GR-PRA1 (SLC4A3)	Clear
Goniodysgenesis and Glaucoma, Pectinate Ligament Dysplasia, PLD (OLFM3)	Clear
Hemophilia A (F8 Exon 11, German Shepherd Variant 1)	Clear

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OTHER RESULTS

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 (PNPLA8, Australian Shepherd 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 Cataracts (FYCO1, Wirehaired Pointing Griffon Variant)	Clear
Hereditary Cerebellar Ataxia (SELENOP, Belgian 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 Vitamin D-Resistant Rickets (VDR)	Clear
Hypocatalasia, Acatalasemia (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

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OTHER RESULTS

Ichthyosis (SLC27A4, Great Dane Variant)	Clear
Ichthyosis, Epidermolytic Hyperkeratosis (KRT10, Terrier Variant)	Clear
Ichthyosis, ICH1 (PNPLA1, Golden Retriever Variant)	Clear
Ichthyosis, ICH2 (ABHD5, 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
Intervertebral Disc Disease (Type I) (FGF4 retrogene - CFA12)	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

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OTHER RESULTS

Late-Onset Neuronal Ceroid Lipofuscinosis, NCL 12 (ATP13A2, Australian Cattle Dog Variant)	Clear
Leonberger Polyneuropathy 1 (LPN1, ARHGEF10)	Clear
Leonberger Polyneuropathy 2 (GJA9)	Clear
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
Lundehund Syndrome (LEPREL1)	Clear
Malignant Hyperthermia (RYR1)	Clear
May-Hegglin Anomaly (MYH9)	Clear
MDR1 Drug Sensitivity (ABCB1)	Clear
Medium-Chain Acyl-CoA Dehydrogenase Deficiency, MCADD (ACADM, Cavalier King Charles Spaniel Variant)	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

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OTHER RESULTS

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
Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 5, Terrier Brasileiro Variant)	Clear
Muscular Dystrophy (DMD, Cavalier King Charles Spaniel Variant 1)	Clear
Muscular Dystrophy (DMD, Golden Retriever Variant)	Clear
Musladin-Lueke Syndrome, MLS (ADAMTSL2)	Clear
Myasthenia Gravis-Like Syndrome (CHRNE, Heideterrier Variant)	Clear
Myotonia Congenita (CLCN1 Exon 23, Australian Cattle Dog Variant)	Clear
Myotonia Congenita (CLCN1 Exon 7, Miniature Schnauzer Variant)	Clear
Narcolepsy (HCRTR2 Exon 1, Dachshund Variant)	Clear
Narcolepsy (HCRTR2 Intron 4, Doberman Pinscher Variant)	Clear
Nemaline Myopathy (NEB, American Bulldog Variant)	Clear
Neonatal Cerebellar Cortical Degeneration (SPTBN2, Beagle Variant)	Clear
Neonatal Encephalopathy with Seizures, NEWS (ATF2)	Clear
Neonatal Interstitial Lung Disease (LAMP3)	Clear
Neuroaxonal Dystrophy, NAD (VPS11, Rottweiler Variant)	Clear

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OTHER RESULTS

Neuroaxonal Dystrophy, NAD (TECPR2, Spanish Water Dog Variant)	Clear
Neuronal Ceroid Lipofuscinosis 1, NCL 1 (PPT1 Exon 8, Dachshund Variant 1)	Clear
Neuronal Ceroid Lipofuscinosis 10, NCL 10 (CTSD Exon 5, American Bulldog Variant)	Clear
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
Osteochondrodysplasia (SLC13A1, Poodle Variant)	Clear
Osteogenesis Imperfecta (COL1A2, Beagle Variant)	Clear
Osteogenesis Imperfecta (SERPINH1, Dachshund Variant)	Clear

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OTHER RESULTS

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
Primary Ciliary Dyskinesia, PCD (NME5, Alaskan Malamute Variant)	Clear
Primary Ciliary Dyskinesia, PCD (STK36, Australian Shepherd 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

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OTHER RESULTS

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 5, PRA5 (NECAP1 Exon 6, Giant Schnauzer 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, 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, Pug Variant)	Clear

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OTHER RESULTS

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
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
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
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

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OTHER RESULTS

Trapped Neutrophil Syndrome, TNS (VPS13B)	Clear
Ullrich-like Congenital Muscular Dystrophy (COL6A1 Exon 3, Landseer Variant)	Clear
Unilateral Deafness and Vestibular Syndrome (PTPRQ Exon 39, Doberman Pinscher)	Clear
Von Willebrand Disease Type I, Type I vWD (VWF)	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 Progressive Retinal Atrophy 1, XL-PRA1 (RPGR)	Clear
X-linked Severe Combined Immunodeficiency, X-SCID (IL2RG Exon 1, Basset Hound Variant)	Clear
X-linked Severe Combined Immunodeficiency, X-SCID (IL2RG, Corgi Variant)	Clear
Xanthine Urolithiasis (XDH, Mixed Breed Variant)	Clear
β-Mannosidosis (MANBA Exon 16, Mixed-Breed Variant)	Clear

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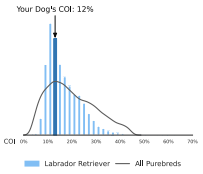
INBREEDING AND DIVERSITY

CATEGORY	RESULT

Inbreeding | *Gene: n/a* | Genetic Result: **12%**

Inbreeding is a measure of how closely related this dog's parents were. The higher the number, the more closely related the parents. In general, greater inbreeding is associated with increased incidence of genetically inherited conditions.

12%

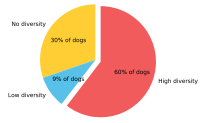


Immune Response 1 | *Gene: DRB1* | Genetic Result: **High Diversity**

Diversity in the Major Histocompatibility Complex (MHC) region of the genome has been found in some studies to be associated with the incidence of certain autoimmune diseases. Dogs that have less diversity in the MHC region—i.e. the Dog Leukocyte Antigen (DLA) inherited from the mother is similar to the DLA inherited from the father—are considered less immunologically diverse. A High Diversity result means the dog has two highly dissimilar haplotypes. A Low Diversity result means the dog has two similar but not identical haplotypes. A No Diversity result means the dog has inherited identical haplotypes from both parents. Some studies have shown associations between certain DRB1 haplotypes and autoimmune diseases such as Cushing's disease, but these findings have yet to be scientifically validated.

High Diversity

How common is this amount of diversity in purebreds:



Immune Response 2 | *Gene: DQA1 and DQB1* | Genetic Result: **High Diversity**

Diversity in the Major Histocompatibility Complex (MHC) region of the genome has been found in some studies to be associated with the incidence of certain autoimmune diseases. Dogs that have less diversity in the MHC region—i.e. the Dog Leukocyte Antigen (DLA) inherited from the mother is similar to the DLA inherited from the father—are considered less immunologically diverse. A High Diversity result means the dog has two highly dissimilar haplotypes. A Low Diversity result means the dog has two similar but not identical haplotypes. A No Diversity result means the dog has inherited identical haplotypes from both parents. 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 purebreds:

