



GENETIC STATS

Wolfiness: 1.1 % **MEDIUM**

Predicted adult weight: **81 lbs**

Genetic age: **66 human years**

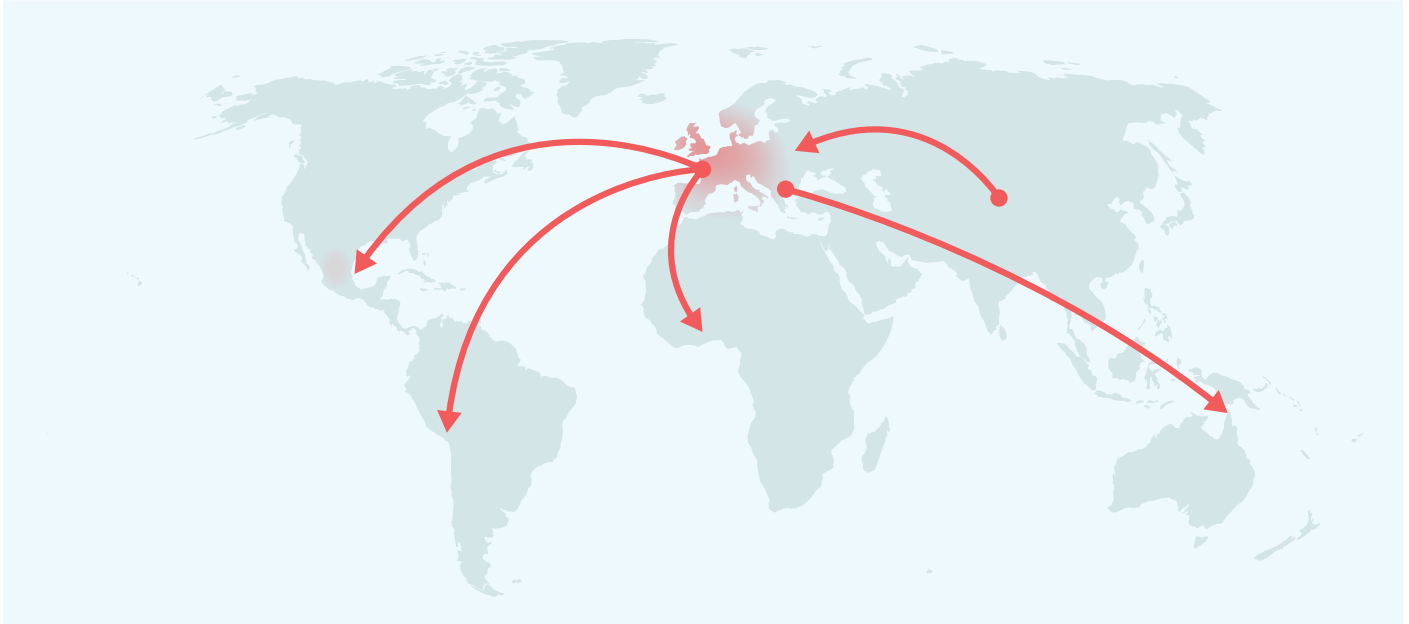
TEST DETAILS

Kit number: EM-6872173

Swab number:



MATERNAL LINE



Through Index'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: A18/19/20/21/27/36/94/109

Part of the large A1b haplogroup, we see this haplotype in village dogs in over 25 countries across the world. We have detected this haplotype in lots of breeds, and it occurs most commonly in German Shepherd Dogs, Maltese, English Springer Spaniels, and English Setters.



PATERNAL LINE



Through Index'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: A1b

For most of dog history, this haplogroup was probably quite rare. However, a couple hundred years ago it seems to have found its way into a prized male guard dog in Europe who had many offspring, including the ancestors of many European guard breeds such as Doberman Pinchers, St. Bernards, and Great Danes. Despite being rare, many of the most imposing dogs on Earth have it; strangely, so do many Pomeranians! Perhaps this explains why some Poms are so tough, acting like they're ten times their actual size! This lineage is most commonly found in working dogs, in particular guard dogs. With origins in Europe, it spread widely across other regions as Europeans took their dogs across the world.

HAPLOTYPE: Ha.3

Part of the A1b haplogroup, this haplotype is found in village dogs in Peru and the French Polynesian Islands. It is also common among Doberman Pinscher, Saint Bernard, and Rhodesian Ridgeback.



TRAITS

Coat Color

E Locus (Mask/Grizzle/Red)	E^mE
K Locus (Dominant Black)	k^Yk^Y
A Locus (Agouti)	a^ta^t
D Locus (Dilute)	Dd
B Locus (Brown/Chocolate/Liver)	Bb

Other Coat Traits

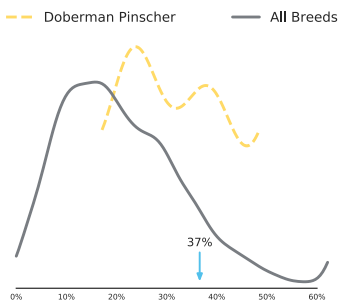
Furnishings / Improper Coat (RSPO2)	ll
Long Haircoat (FGF5)	GG
Shedding (MC5R)	TT
Curly Coat (KRT71)	CC

Body Size

Body Size - IGF1	NN
Body Size - IGF1R	GG
Body Size - STC2	TT
Body Size - GHR (E195K)	GG
Body Size - GHR (P177L)	CC

Genetic Diversity

Inbreeding Coefficient **37%**



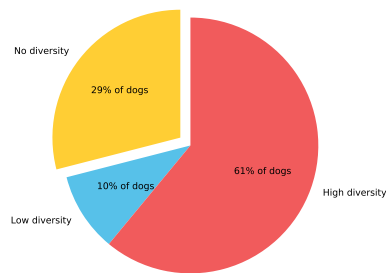
Other Body Features

Brachycephaly (BMP3)	CC
Natural Bobtail (T)	CC
Hind Dewclaws (LMBR1)	CC

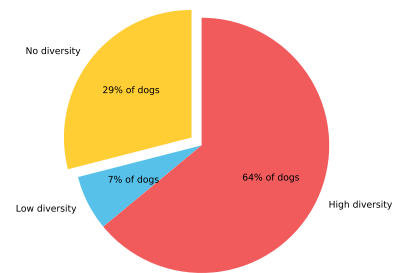
Performance

Altitude Adaptation (EPAS1)	GG
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MHC Class II - DLA DRB1
No Diversity



MHC Class II - DLA DQA1 and DQB1
No Diversity





CLINICAL TRAITS

These clinical genetic traits can inform clinical decisions and diagnoses. These traits do not predict a disease state or increased risk for disease. We currently assess one clinical trait: Alanine Aminotransferase Activity.

Alanine Aminotransferase Activity result: Low Normal

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

More information on Alanine Aminotransferase Activity:

Known to be highly expressed in liver cells, activity levels of alanine aminotransferase, or ALT, is a common value on most blood chemistry panels and is known to be a sensitive measure of liver health. Dogs with two ancestral G alleles show "normal" activity. Dogs that have one or two copies of the derived A allele may have lower resting levels of ALT activity, known as "low normal". If your dog's result is "low normal" then when a blood chemistry panel is being interpreted the values that you and your veterinarian consider "normal" may need to be adjusted. Please note that neither a "normal" nor a "low normal" result for this predicts a disease state or increased risk for liver disease. Moreover, this mutation does not associate with increased levels of ALT: If your dog has high ALT levels, please consult your veterinarian.



INDEX



DNA Test Report

Test Date: December 23rd, 2017

embk.me/index

HEALTH

Good news! Index did not test positive for any of the genetic diseases that Embark screens for.

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AT RISK

0

CARRIER



INDEX



DNA Test Report

Test Date: December 23rd, 2017

embk.me/index

OTHER CONDITIONS

Good news! Index tested clear for 3 genetic conditions that are common in his breed.

- Von Willebrand Disease Type I (VWF)
- Degenerative Myelopathy (SOD1A)
- Dilated Cardiomyopathy (PDK4)



INDEX



DNA Test Report

Test Date: December 23rd, 2017

embk.me/index

FULL TEST PANEL

To help ensure healthy breeds, every test includes analysis of our full panel of over 160 genetic diseases.

Index is also clear of 162 other genetic diseases that Embark tests for.