



Luna's genetic report

Version 1.5.1



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This page includes a brief background on the pathway to cat evolution as well as an overview of what we provide in this report to help you interpret your cat's results.



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Here you'll find a percentage breakdown and a chromosome map of breed groups. The chromosome map displays regions on your cat's genome that are similar to the breed groups.



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Western Breeds

Your cat belongs to the Western breed group. We rank all breeds in the western breed group by how similar your cat is to a specific breed & to the rest of the database.

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Your cat is **most** similar to the Norwegian Forest Cat. This page provides a description of this breed and a chromosome map of your cat's genome relative to this breed.

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The second breed your cat is most similar to is the Maine Coon. This page provides a description of this breed and a chromosome map of your cat's genome relative to this breed.

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The third breed your cat is most similar to is the Russian Blue. This page provides a description of this breed and a chromosome map of your cat's genome relative to this breed.

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Some actionable insights to help optimize your kitty's health and well being.

How to interpret your report

The road to less wild: Simply put, our sweet fur-babies are still wild little beasts. The history of cat domestication is vastly different from the domestication of other companion or agricultural animals. Whereas dogs went through thousands of years of selective breeding for behavioral and physical traits, cats have largely remained similar to their wild ancestors. This is why our feline friends still have excellent hunting skills, feeding and grooming habits and the ability to pounce into action at any given moment.

So, how exactly did cats become part of human life? The pathway to domestication began as human agriculture flourished. The rodent population drastically increased with food storage. Cats played their welcomed role as nature's exterminator. Since cats chose to live with us, a systematic breeding program was never imposed on them for traits responsible for cohabitation. Our fur-babies are unique and in some sense, the only animals known to have domesticated themselves to live with us.

It wasn't until the 19th century that we were able to "influence" cat evolution by selectively breeding cats for mostly aesthetic traits. Due to this relatively short breeding process, the vast majority of modern cats are not the result of intentional breeding nor have ancestors of a defined breed.

Unlike other dog or human ancestry tests, we cannot make the assumption that your cat was descended from a mixture of purebred lines since purebred cats are so new. However, using a large panel of purebred cats that we have sequenced, we can try to find parts of your cat's genome that are similar to a known cat breed.

We are thrilled to be celebrating the mutt, the mixed-breed kitty, the **polycat!** 95% of all cats in the world are mixed-breed mutts. This is all we knew about them until now. With genetic data, we can learn more about what makes each mixed-breed polycat unique! As we gather more purebred data and trait information, we will be able to start narrowing down the parts of the genome that are responsible for certain traits and thus will continue to explore what makes YOUR polycat unique!

Analysis of our reference panel of purebred cats allows us to divide cat breeds into three main groups: Western, Eastern, and Hybrid.

Western breeds include:
American Shorthair, Persian, Siberian, British Shorthair, Maine Coon, Russian Blue, Norwegian Forest Cat, Abyssinian, Exotic Shorthair, Turkish Angora, and Ragdoll.

Eastern breeds include:
Oriental Shorthair, Burmese, Birman, and Siamese.

Hybrid cats are the result of mating between a domestic cat and a wild cat. They include the Bengal (asian leopard x domestic) and the Savannah breeds (serval x domestic).

Now let's talk about Luna! We sequenced Luna's DNA, which we extracted from the sample you've submitted to us. This resulted in 9,832,581 DNA fragments sequenced, which represents 1,179,586,020 DNA bases that were sequenced. Using this data along with the latest cat genome (felis_catus_9.0), we analyzed genetic variants across 18 chromosomes to generate this report.

We assigned Luna to the Western breed group based on the comparative genomic similarity to breeds belonging to the Western group. Within the Western breed group, we ranked the individual member breeds based on how similar your cat is to each breed.



Summary



Name

Luna

Parent
Beth

Gender
Female

Breed group
Western

Date of birth
5/1/2016

Breed Groups

- Western
- Eastern
- Hybrid
- Polycat

Story

...

Your cat is most similar to these breeds

(Ranked by similarity)



Norwegian Forest Cat



Maine Coon



Russian Blue

Your cat is more similar to these wild cats



cougar



tiger



leopard



cheetah

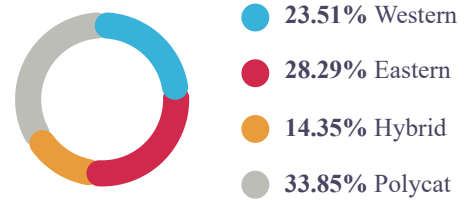


Breed groups

Our genetic analysis looks for regions on your cat's chromosomes that are most similar to individual/groups of purebred cats. These similar regions do not necessarily indicate purebred ancestry. As feline friends, we all know that cats have their own unique personalities and physical characteristics. So, the exciting part is that there are potential genomic locations that define certain breed traits. As we continue to add more purebred cats to our database, we can start narrowing down the specific genomic regions that define purebred cats and eventually their traits. Based on our database of purebred cats, we can divide breeds into three main categories: Western, Eastern, and Hybrid.

The assignment of your cat to the breed groups is not determined by genomic composition, but rather by the specific breed that your cat is most similar to.

Genomic composition of breed groups



Chromosome Map



western breeds

1

Norwegian Forest Cat



More similar than 89.68% of the cats in our database

2

Maine Coon



More similar than 85.01% of the cats in our database

3

Russian Blue



More similar than 82.92% of the cats in our database

4

British Shorthair



More similar than 69.73% of the cats in our database

5

Persian



More similar than 52.28% of the cats in our database

6

Abyssinian



More similar than 50.11% of the cats in our database

7

American Shorthair



More similar than 43.22% of the cats in our database

8

Ragdoll



More similar than 29.57% of the cats in our database

9

Siberian



More similar than 27.05% of the cats in our database

Norwegian Forest Cat



Luna is more similar to the Norwegian Forest Cat than 89.68% of all other cats in our database

Chromosome map

● Norwegian Forest Cat regions



Overview

The Norwegian Forest cat or the “mystic wildcat of the fairy tales” is a feline breed believed to be between 1000 to 2000 years old. This is the cat of the Vikings. This breed is so popular and beloved across Northern Europe that it has made frequent appearances in numerous Norwegian urban myths and folklore. These large, strong and sturdy cats are well protected in Europe's cold, brutal winters by an insulated, waterproof double coat, that comes in all possible colors and patterns except for chocolate, lilac, fawn and cinnamon. Norwegian Forest cats are easily distinguished by their large, almond-shaped eyes, triangle-shaped head and a straight profile from the brow ridge to the tip of the nose.

Breed Origins

Originating in Norway, one theory has it that the breed's ancestors may be black and white shorthair cats brought from Great Britain and longhaired cats introduced by the Crusaders. Another theory claims that their ancestry lies with the Russian Siberian cat and the Turkish Angora. The breed was finally recognized and registered in Europe in the 1970s, and in the American Cat Fanciers' Association in 1994.

Genetic Predisposition

Although generally strong and healthy, some health problems have been reported in the breed. Some published studies have recognized the Norwegian Forest cats, among several other breeds, to be at a higher risk for Diabetes mellitus, a metabolic disorder in which blood sugar levels remain high for long periods of time. In a 2007 study, a complex rearrangement in the glycogen branching enzyme (GBE1) was identified in this breed, causing a perinatal hypoglycemic collapse and a late-juvenile-onset neuromuscular degeneration in the glycogen storage disease type IV (Fyfe, 2007). The breed has also been known to suffer from hip dysplasia (Eldredge, 2003).

Personality

Norwegian Forest cats are friendly, social and independent. They have a calm temperament and will usually get along well with children and other pets. While they highly appreciate the company of their favorite humans, they do so on their own terms. They can be lap cats, but tend to be very picky and fussy as to whose lap they sit in. These kitties love to explore, and their strong claws make them excellent climbers. A scratching post or a tall cat tree will go a long way entertaining these kitties.

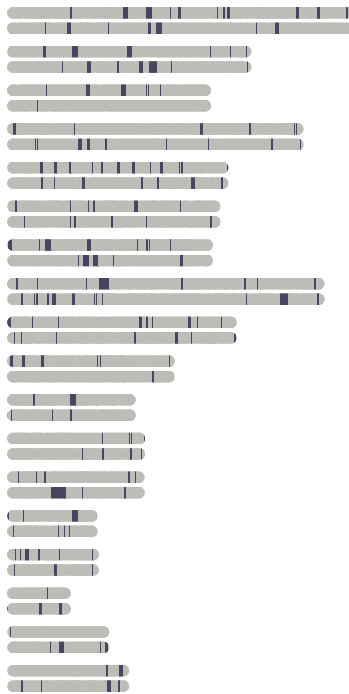
Maine Coon



Luna is more similar to the Maine Coon than 85.01% of all other cats in our database

Chromosome map

● Maine Coon regions



Overview

Tipping the scales at almost 20 pounds, the Maine Coon is said to be one of the largest and heaviest cat breeds. This breed is very muscular, agile and heavily boned, sporting a thick, uneven, double layered coat and a bushy tail. They also have the longest whiskers of any other cat breed.

Breed Origins

The origin of the Maine Coon remains unfamiliar, but there are many speculations and supported theories. One of which suggests that these elegant, long-haired cats accompanied the Vikings from Europe as they journeyed to America. Another story has it that the Maine Coon is the first and therefore the oldest native breed to have been created in the United States, specifically in the state of Maine, where today it is the official state cat.

Genetic Predisposition

The Maine Coon breed is known to be at a higher risk for developing hypertrophic cardiomyopathy (HCM), the most common heart condition among all feline breed groups. HCM can be caused by several genetic mutations. In the Maine Coon an autosomal dominant mutation in the myosin-binding protein C gene has been identified among 33% of breed (Longer, M. 2013). HCM is a progressive disease and can result in heart failure, paralysis of the hind legs, and even sudden death. Another genetic mutation found among Maine Coon cats is known as the "Hemingway" mutation, which can result in the development of an extra toe, or at times even two. This harmless mutation is commonly referred to as polydactylism and is frequently seen among the breed.

Personality

Termed as one of the few "water loving cats" the Maine Coon is truly a gentle giant and adored for its playful, independent dog-like nature. Maine Coons are known to be pretty vocal, utilizing a wide range of complex sounds. These cats are often quite obedient and possess an above average intelligence making them easy to train. It is not uncommon to see cats of this breed being walked on leashes.

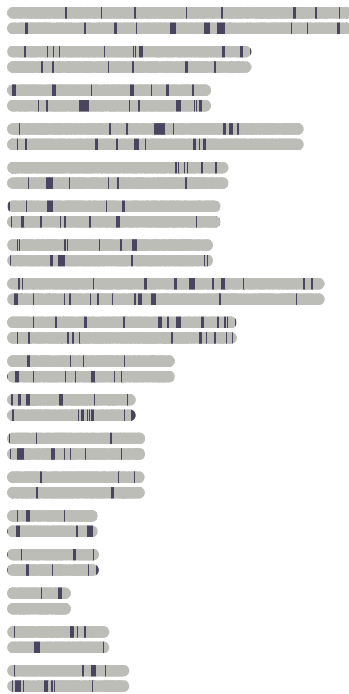
Russian Blue



Luna is more similar to the Russian Blue than 82.92% of all other cats in our database

Chromosome map

Russian Blue regions



Overview

Meet the “Doberman Pinscher of cats”. A cat that combines elegance and masculinity in its own unique way. Russian Blues are very strong and agile cats, with a sweet-natured temperament. The breed is known for its grayish-blue coat, broad head and vividly green eyes. Its short, plush fur has silver-tipped hairs giving the coat a slight shimmering appearance.

Breed Origins

The Russian Blue is a naturally occurring breed thought to have originated in Archangel, Russia. However, despite its Russian origins, the breed was mainly developed in Great Britain and Northern Europe where it was thought to have been introduced by Russian sailors. The Russian Blue breed present in the US today was developed by combining the British Russian Blue with the Scandinavian Russian Blue. Russian Whites, Blacks and Tabbies were all created by crossing Russian Blues with domestic cats. The breed was also used, to a certain extent, in the development of the Havana Brown and in altering the Nebelung breed.

Genetic Predisposition

These moderate-sized cats have little to no genetic predispositions. However, they do love to eat, therefore it is important to appropriately dose their food to avoid the onset of obesity. Some published studies have recognized the Russian Blue, among several other breeds, to be at a higher risk for Diabetes mellitus, a metabolic disorder in which blood sugar levels remain high for long periods of time.

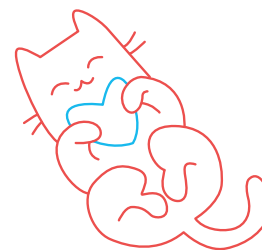
Personality

Russian Blues are very curious, friendly and social cats. They can seem shy or distant at times, but in fact, they often get depressed or anxious if they feel neglected in any way. Blues are known to be very loyal, loving and even sensitive to human emotions. They are typically quiet, and yet very playful and energetic. Due to their high level of intelligence and excellent memory they tend to remember favorite visitors even if the visits are infrequent.

Health and Wellness

We hope you enjoyed flipping through the first chapter of your kitty's DNA story. We sure enjoyed getting to know more about them! This is just the start of connecting all of the kitty dots, stay tuned - there is much more to come.

Feline health & wellness is very important to us! Together, we will elevate feline care to a new level on our mission to help cats live healthier and happier lives. We've shared some actionable insights to help you optimize your kitty's health and well being, so that you may get to know your cat better!



Visit your veterinarian

Be proactive and have your kitty examined regularly. Annual (semi-annual for older cats) wellness exams and routine lab tests can help veterinarians find and treat many health conditions before they become life-threatening. Check-ups are especially important for cats, who are excellent at hiding when they're sick or in pain.

Keep your cat at a healthy weight

Obesity is as dangerous for cats as it is for people. It puts them at risk for health problems such as diabetes, high blood pressure, heart and lung disease. It can even increase their risk of developing cancer. Talk to your veterinarian about what a healthy weight means for your cat.

Polish those pearly whites

Unlike humans, cats can't brush their teeth. Partner with your veterinarian to create a dental care plan. The bacteria that collects on your cat's teeth can also enter their bloodstream, contributing to a plethora of health issues and other feline diseases.

Provide clean water daily

If your kitty isn't drinking enough water, they could become dehydrated or develop a urinary tract disease. Always make sure that you provide a constant supply of clean water. If they are finicky about water, try providing an intriguing fountain or feed them wet canned food which adds more water to their diet.

Give your cat mini exams at home

Petting and brushing your cat is about more than minimizing hairballs and showing your kitty love. It also lets you get your hands on your kitty so you can notice any lumps, bumps, or growths early and get them checked out right away. It's equally important to look for changes in behavior, stool/urine, coat condition and weight. By knowing your kitty well, you can catch changes before it's too late.

Proper nutrition can increase life expectancy

Aging includes a multitude of factors: environment, breed characteristics, nutrition and genetics. To help your cat live her best life, she needs a high-moisture, species-appropriate diet. While diet is important, how much and how often your cat eats is also key. Additional Tips: If you have more than one cat, feed them separately and monitor each one's consumption.

Exercise your cat's body and mind

Kitties need both physical and mental exercise! Make sure they have plenty of toys to play with, which could include food puzzles and toys that take them through an entire prey sequence (ending with a "kill"). Cat trees, perches and shelves are important too – they allow your cat to monitor what's happening outside a window, or keep an eye on what's happening in your home.