

Wisdom Panel[®]

Congratulations!

Bunny Bear is a Beagle, Saint Bernard, Bulldog, Chow Chow, Miniature Schnauzer Mix

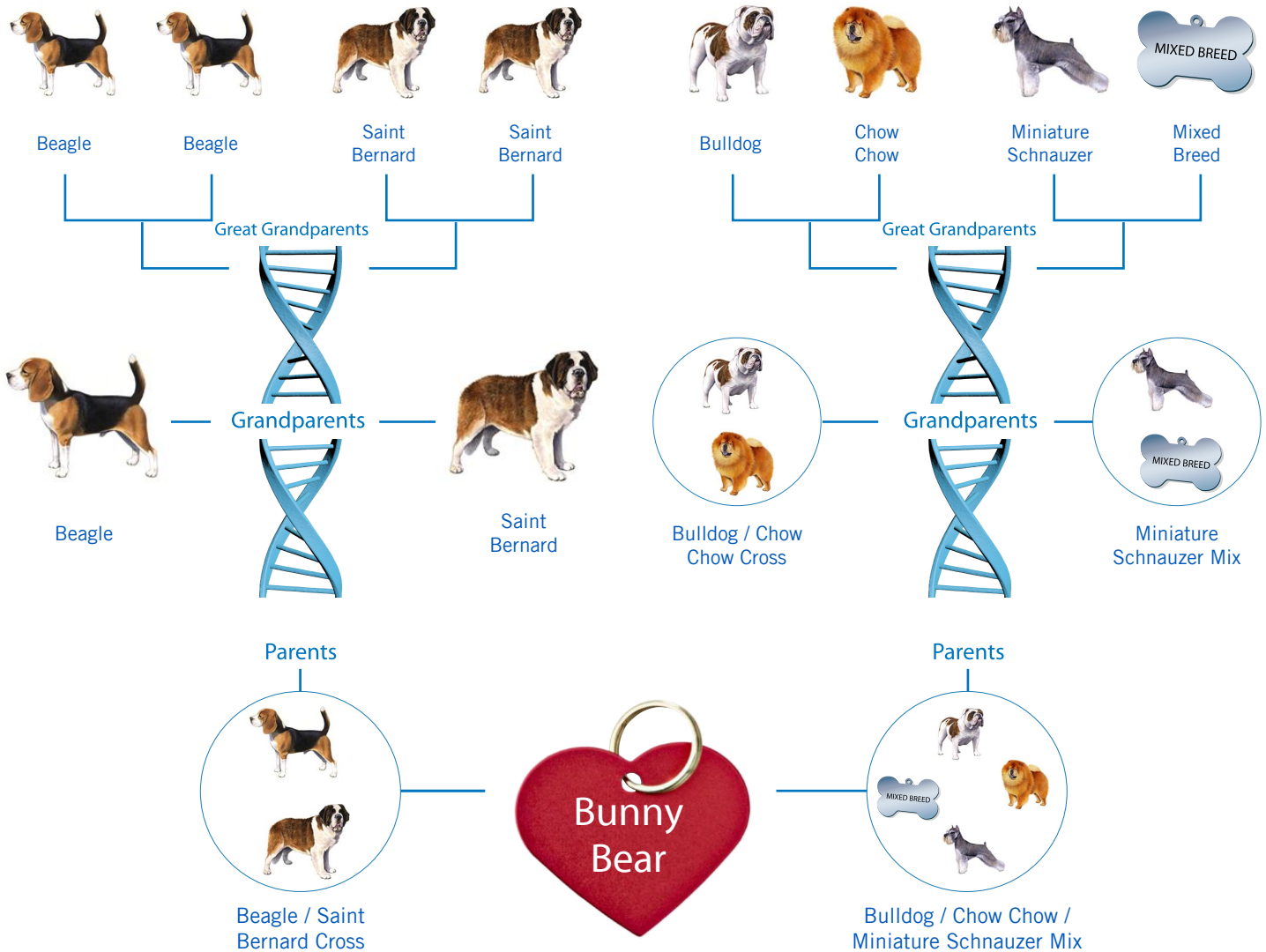
In the following pages, you will learn about:

- **KEY BREEDS DETECTED**
- **KEY BREED HISTORY, APPEARANCE, & BEHAVIOR**
- **MDR1 SCREENING**
- **MIXED-BREED ANCESTRY**
- **HOW KEY PHYSICAL TRAITS ARE INHERITED**
- **ADDITIONAL INFORMATION**



YOU HAVE A BEAGLE, SAINT BERNARD, BULLDOG, CHOW CHOW, MINIATURE SCHNAUZER MIX

The *Wisdom Panel* computer algorithm performed over seven million calculations using 11 different models (from a single breed to complex combinations of breeds) to predict the most likely combination of pure and mixed breed dogs in the last 3 ancestral generations that best fit the DNA marker pattern observed in Bunny Bear. The ancestry chart depicting the best statistical result of this analysis is shown in the picture below.



Interested in the Mixed Breed ancestry? Look for the Mixed Breed Signatures page later in the report!



BEAGLE

All dogs should be considered individual animals. Because each is a product of their unique environment and handling, they may exhibit different traits and behaviors than those listed here.



HEIGHT:

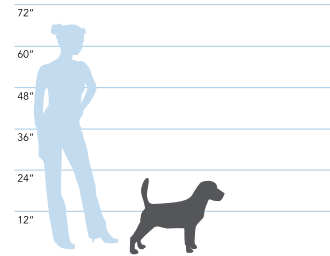
13 - 16 in

WEIGHT (SHOW):

20 - 30 lb

WEIGHT (PET):

17 - 37 lb



EARS



MUZZLE

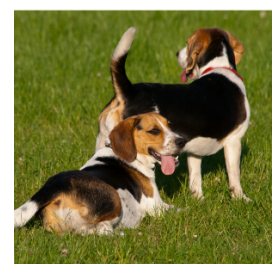
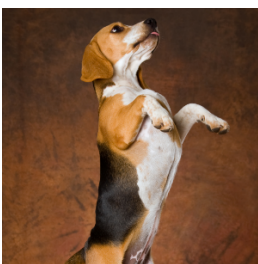


TAIL



The Beagle is a long-established breed, descending from the Foxhound, the Harrier and the Kerry Beagle. They were most commonly used for hunting hare, quail and pheasant, although nowadays they also make excellent family dogs and have even been used in police work. The origin of the Beagle's name is debated. Some people believe the name derives from the Celtic word "beag," which means "small" or from the French word "begle," which means "useless" or "of little value." The Beagle was introduced to the United States in the 1860's and the breed was officially recognized by the American Kennel Club in 1885.

Beagles have been bred mostly for form and hunting ability and any hound color is permitted on their short coats. This means that Beagles come in a variety of blacks, tans, browns, reds, blue (a silver color), and may be ticked (mottled with white) or have white markings or be white with colored spots.



Do You Recognize Any of These Beagle Traits In Bunny Bear?

- Happy or gentle nature, and usually friendly dogs; although some have high energy levels.
- Respond well to reward-based training involving treats or favorite toys.
- Beagles seem to enjoy dog sports such as tracking, hunting, agility, rally and competitive obedience.
- Chasing wildlife or barking may impair bonding.



SAINT BERNARD

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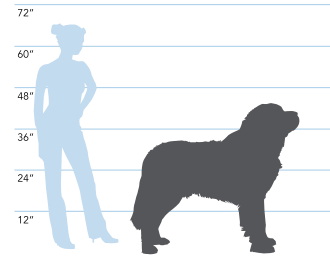
32 - 36 in

WEIGHT (SHOW):

121 - 200 lb

WEIGHT (PET):

106 - 186 lb



EARS



MUZZLE



TAIL



The St. Bernard was developed in the Swiss-Italian Alps some 350 years ago and their rescuing abilities are legendary. The breed was developed by a group of monks tending a hospice at the Great Saint Bernard Pass. They are likely descended from the Asian “Molosser,” which was introduced to Switzerland by Roman armies long ago. St. Bernards were trained to work their rescue missions in packs of four. Once a victim was found, two of the dogs would lay near to keep them warm, one would try to revive the victim by licking his face and the fourth would go off to seek help. Since the time the breed began working as rescue dogs, they are believed to have saved over 2000 people. The most famous St. Bernard (Barry) is credited with saving somewhere between 40 and 100 lives. His body was preserved and still stands in the Natural History Museum in Berne. The modern name, St. Bernard, was given the breed in the 1850’s, and they were introduced to the United States in 1870. They were recognized by the American Kennel Club in 1885.

The Saint Bernard can be short or longhaired with a particolored coat of white and either black, brindle, or a range of brown shades from light tan to a deep mahogany as well as brighter rust shades. The black mask is also a common trait in this breed.



Do You Recognize Any of These Saint Bernard Traits In Bunny Bear?

- Intelligent, hard working, calm, and usually friendly dogs.
- Stubborn tendencies may be reduced by using motivational tools such as treats and favorite toys in reward-based training.
- Saint Bernards enjoy dog sports such as draft work pulling carts, weight pulling, agility, tracking, and obedience.
- May be protective around strangers.



BULLDOG

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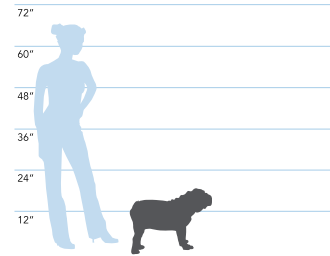
12 - 16 in

WEIGHT (SHOW):

35 - 55 lb

WEIGHT (PET):

32 - 68 lb



EARS



MUZZLE

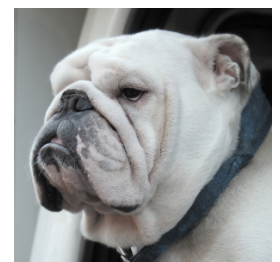


TAIL



The Bulldog of today may look a bit like the Bulldog of days gone by, but their personalities are nothing alike. Bulldogs were originally developed to be fierce bull fighters with a high pain tolerance and an unparalleled aggression. They descended directly from the Bullenbeisser, an Asian dog resembling a Mastiff, and the Bulldog's ancestors were used by Roman troops as well as the Teutons and Celts. When the Bullenbeissers were brought to England, breeders started working on reducing the size of the overall dog while increasing the size of the head. The result was a dog that was very effective in bull baiting and the breed earned the name "English Bulldog." It is believed that the Bulldog was first brought to the United States in 1735. In 1835 bull baiting became outlawed and breeders started to eliminate the aggressive tendencies of the breed. As a result, today's Bulldogs are much calmer and more suitable to family life than the Bulldogs of the past.

The Bulldog comes in a range of colors, with brindle (black and brown stripes), blacks, fawns, and tans, with white combinations which range from all-white to small patches of color and piebald color patches. Dogs which are mostly colored, such as brindle sometimes have a white blaze in the chest.



Do You Recognize Any of These Bulldog Traits In Bunny Bear?

- Playful, calm, and usually friendly dogs.
- Stubborn tendencies may be lessened by using reward-based training involving small treats.
- Bulldogs are less energetic than other breeds, although they still need exercise to avoid becoming obese.
- A Bulldog can be tenacious or difficult to disengage from an activity that has its attention.



CHOW CHOW

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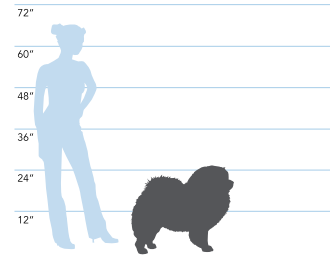
18 - 22 in

WEIGHT (SHOW):

40 - 65 lb

WEIGHT (PET):

42 - 69 lb



EARS



MUZZLE

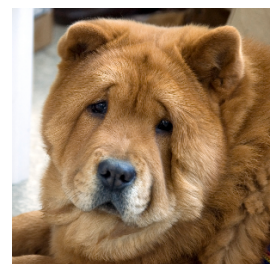
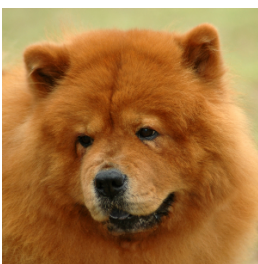


TAIL



The Chow Chow is a venerable breed dating back at least two thousand years. Many believe that the breed originated in China, but there is some evidence that indicates the Chow Chow actually migrated to China from Mongolia and Manchuria. While no one can say for sure from which breeds the Chow Chow has descended, it is believed that the breed has Tibetan mastiff and Samoyed in its bloodline. The Chow Chow served a dual purpose in China. Some were used for hunting while others were used to guard the sacred temples from evil entities. The East Indian Company brought the Chow Chow to England in 1781 and Queen Victoria received Chow Chows as a gift in 1865. During the 1880's, the numbers of Chow Chows imported increased drastically. The Chow Chow is one of the oldest known breeds, recognized by the American Kennel Club in 1903.

The Chow Chow comes in either rough or smooth coat, with the rough having a more fluffy appearance. The coat may have lighter shading and be one of five colors; black, blue, cinnamon, cream, and red, which varies from a light golden to a deep mahogany. The Chow is famous for its blue mottled tongue, and sometimes has a black mask.



Do You Recognize Any of These Chow Chow Traits In Bunny Bear?

- Reputation as a loyal family dog.
- Reserved and wary with strangers.
- Independent spirit, but responds to reward-based obedience training.
- May require socialization to reduce defensive aggressive tendencies. There have been reported incidents of Chow Chows being aggressive with other pets or people.



MINIATURE SCHNAUZER

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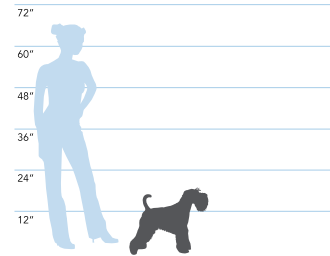
13 - 14 in

WEIGHT (SHOW):

9 - 16 lb

WEIGHT (PET):

9 - 19 lb



EARS



MUZZLE

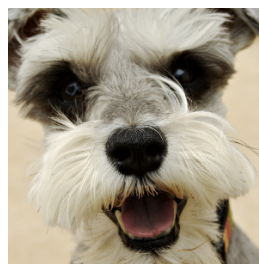
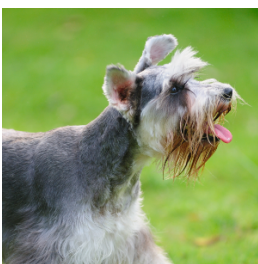


TAIL



Miniature Schnauzers were bred to hunt rats and other vermin and to guard small flocks. They were created by breeding the Standard Schnauzer with smaller breeds, such as the Affenpinscher, the Miniature Pinscher and the Poodle. It was not until 1899 that the Miniature Schnauzer was presented as its own distinct breed. Miniature Schnauzers were brought to the United States in 1925, and the breed was recognized by the American Kennel Club in 1926. Following World War II, the breed's popularity soared and, at one time, raised it to the position of third most popular breed in America.

The Miniature Schnauzer has a wiry outercoat with a close undercoat. The AKC standard recognizes three colors; black, black and silver, and salt and pepper. The hairs in the salt and pepper coat are made up of black and white banded hairs as well as solid black and white hairs in the topcoat.



Do You Recognize Any of These Miniature Schnauzer Traits In Bunny Bear?

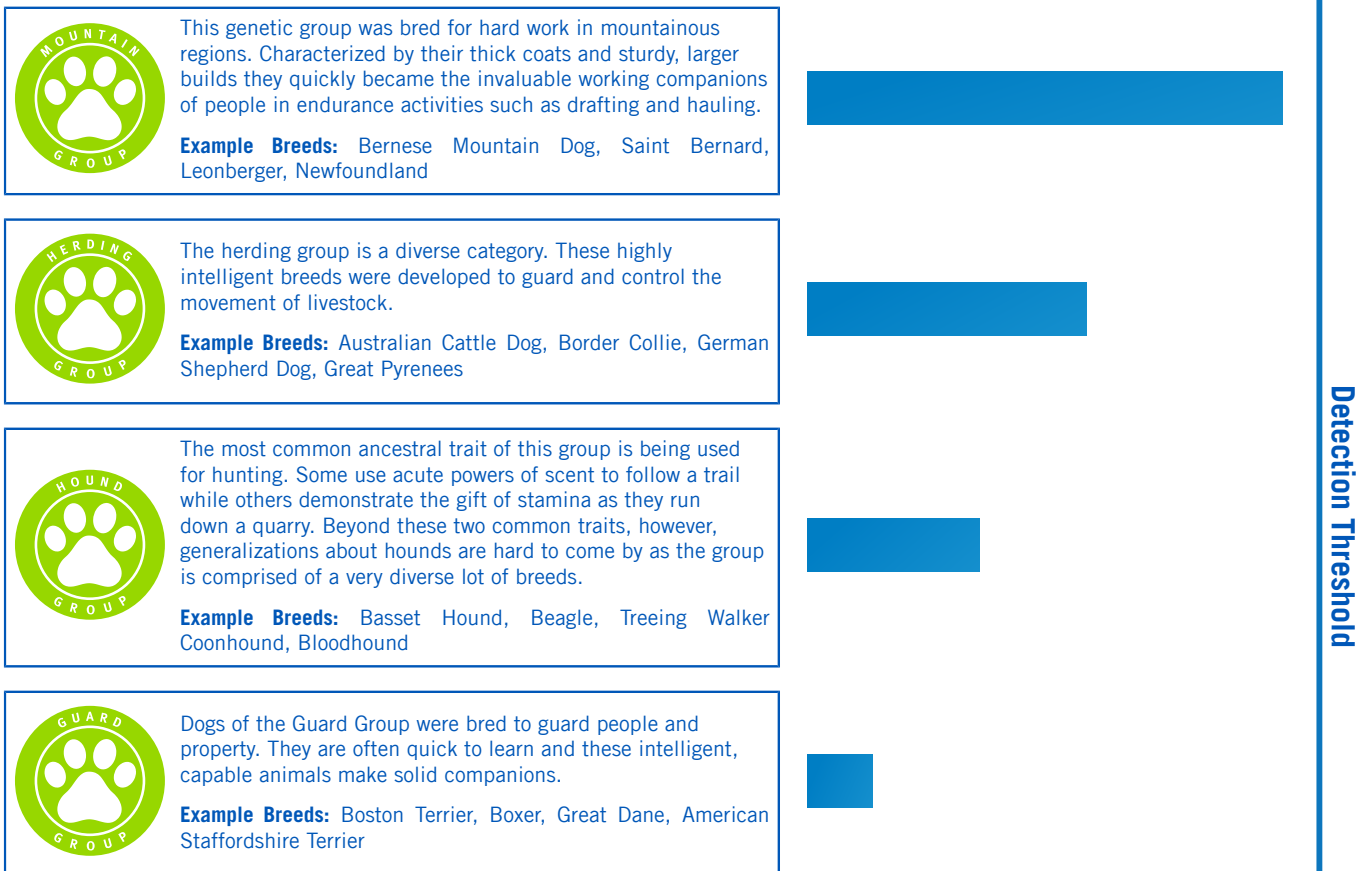
- Intelligent, active, and alert dogs. Good watch dogs.
- Quick learners with reward-based training and as such enjoy dog sports such as agility, tracking, earthdog trials, rally and competitive obedience.
- May engage in chasing and barking at wildlife and can be tenacious or difficult to disengage from an activity that has its attention.
- Tend to be suspicious of strangers; may require careful socialization to prevent or reduce defensive aggressive tendencies.





What Does the Mixed-breed Ancestry Mean for BUNNY BEAR?

A portion of Bunny Bear’s ancestry was predicted to be mixed beyond the three generations we test for. It is difficult to identify strong individual breed signals in this mixed portion, so we have listed the genetic breed groups with the strongest statistical likelihood below. The breed groups are listed in order of strength with the most likely at the top of the list.



MDR1 Screening Results

Condition	Gene	Mode of Inheritance	Test Results
Multi-Drug Sensitivity	MDR1	Dominant	Normal/Normal

Please be sure to share these results with your veterinarian at your first opportunity. They may be critical to the health care of your dog.

Test Results Analysis

MDR1 Normal/Normal - These dogs have two copies of the normal MDR1 gene and do not have the MDR1 mutation. They will not pass on the mutation to their offspring. These dogs are not at increased risk for experiencing side effects from drugs that are pumped by P-glycoprotein.

About MDR1

MDR1, or Multi-Drug Resistance-1 is a genetic mutation found in many of the herding breeds, some sight-hound breeds and many mixed breed dogs. The MDR1 gene is responsible for production of P-glycoprotein, which is a transport pump that plays an important role in limiting drug absorption and distribution (particularly to the brain), and in enhancing the excretion of many drugs used in dogs.

Some dogs, particularly herding breeds or mixed-breed dogs with herding breed ancestry have a mutation in the MDR1 gene that makes them defective in their ability to limit drug absorption and distribution. These dogs are also slower to eliminate drugs from the body that are normally transported by P-glycoprotein. All dogs have two copies of this gene, and dogs with mutations in both copies will be much more sensitive to many commonly used drugs. Even dogs with only one copy of the mutation, however, are more sensitive to drugs than dogs with two normal MDR1 genes. Therefore it is important to test your dog and share your results with your veterinarian so they can provide your dog with the best possible care.

For more information about MDR1 and a full list of drugs affected by MDR1 please visit:
http://www.wisdompanel.com/mdr1_disease_screening/ or <http://vcpl.vetmed.wsu.edu>

Origins of the Test

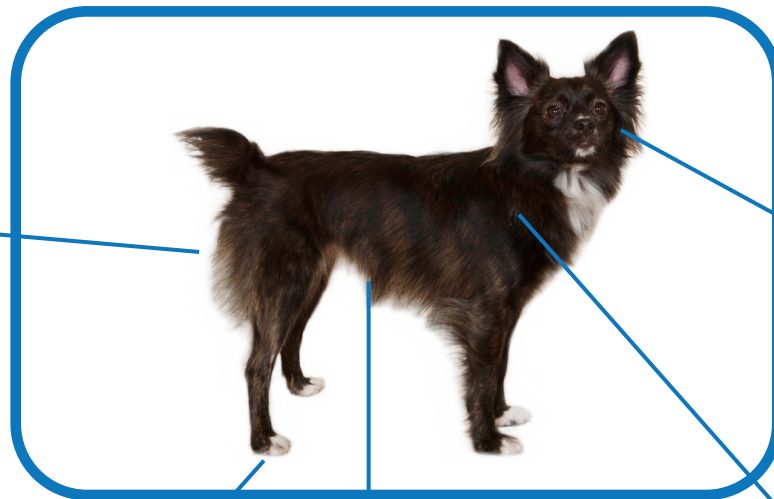
The discovery of the mutation of the multi-drug resistant gene (MDR1) and its effects on multi-drug sensitivity in dogs, was made by Washington State University. It is a patent-protected diagnostic test offered by Washington State University that has been licensed to Mars Veterinary for use in the *Wisdom Panel* tests.



The Influence of Breeds on Appearance

This report reveals the breeds detected in your dog’s DNA. It also includes checklists of physical traits associated with these breeds. Breeds can combine their influences in countless, fascinating ways. It’s the unique combination that makes your dog one-of-a-kind.

Your dog may behave like, or strongly resemble, just one of the breeds in its makeup. However much more commonly your dog’s looks and personality will blend aspects of these breeds. In the example below you can see how many of Frankie’s physical traits are due to a blending of breed influences.



FEATHERING

The longer hair on the legs, tail and around the ears, is due to dominant modifier genes available from the Shetland Sheepdog.

BLACK PIGMENT

This coloring in the nose, eye rims, lips and pads on the feet is due to one copy of the black gene variant, available from all three ancestral breeds.

WHITE SPOTTING

This is due to a lack of pigment and is often found in the extremities (feet, chest, face, etc.), but can also extend over more of the body. It can be due to many genes including those found in the three ancestral breeds here.

BRINDLE COAT COLOR

The black and tan striping in Frankie’s coat is a dominant trait coming from one copy of the brindle gene variant. This is available from the Italian Greyhound, Parson Russell Terrier and Shetland Sheepdog.

SHORT HAIR

This is due to one copy of the gene variant from the Italian Greyhound or the Parson Russell Terrier that is dominant over the long coat gene from the Shetland Sheepdog.

Wisdom Panel found these breeds in our example dog Frankie:



Shetland Sheepdog



Italian Greyhound



Parson Russell Terrier



For additional information, watch an illustrative video at <http://youtu.be/UAcP0ch4-C8> - it provides educational content around canine DNA, the basic blueprint for life, and a closer look at inherited genes.





Predicted Adult Weight Profile

Based upon the breeds detected in Bunny Bear's ancestry and the genetic markers analyzed by **Wisdom Panel**, as well as the information provided that Bunny Bear is **male** and intact, we have calculated the likely weight that Bunny Bear should reach when an adult. The **Wisdom Panel** target weight profile is presented as a range based on the unique mix and proportion of breeds detected.

- If intact, the adult weight is predicted to be between 59 - 88 lbs.
- If neutered, the adult weight is predicted to be between 60 - 97 lbs.

Many factors can influence an adult dog's weight, including sex and neuter status. Both of these factors have been used to calculate the predicted weight profile. Another major influence on canine weight is body condition score, which is a factor of your dog's lifetime nutrition and exercise regimen. For more information visit WisdomPanel.com and go to the "How it Works" section.

Talk to Your Veterinarian

Congratulations on taking the steps to learn about Bunny Bear's ancestry and to understand what breeds are in your mixed breed dog using **Wisdom Panel!** Knowing your dog's breeds is more than a novelty, it is a medical necessity. Each breed in your dog's genetic paw print may have unique health concerns you should know about so that you can provide a lifetime of excellent care.



We recommend discussing your dog's ancestry report and genetic disease screen results with your veterinarian, as he or she can help you use your **Wisdom Panel** report to help better care for Bunny Bear. The next time you visit your veterinarian, consider asking these questions in addition to any you come up with on your own:

- Are there any specific issues that may be relevant to my dog's well-being?
- Are there any special techniques that may help in training a dog with this particular mix?
- Are there any particular dietary considerations to bear in mind for a dog like mine?

How Wisdom Panel Works

The process started when you sent a sample to our laboratory, where the DNA was extracted from the cells and examined for the 321 markers that are used in the test. The results for these markers were sent to a computer, that evaluated them using a program designed to consider all of the pedigree trees that are possible in the last three generations. The trees considered include a simple pedigree with a single breed (a likely pure-bred dog), two different breeds at the parental level (a first-generation cross), all the way up to a complex tree with eight different great-grandparent breeds allowed.

Our computer used information from over 200 breeds, types and varieties from our breed database to fill these potential pedigrees. For each of the millions of combinations of ancestry trees built and considered, the computer gave each a score representing how well that selected combination of breeds matched to your dog's data. The pedigree with the overall best score is the one which is shown on the ancestry chart. Only breeds that reached our set confidence threshold for reporting are reported in the ancestry chart.



...Or Another Kit for You!

We'd like to say thank you for purchasing a **Wisdom Panel** DNA kit with \$15 off another kit for you, or to pass along to friends or family. Just visit WisdomPanel.com and use this promo code* below at the time of checkout.

**PROMO CODE:
FF5041808SH**



Check Out the Dog Community!

Want to share your results with other **Wisdom Panel** users and dog lovers? We've got a Dog Community for you! Just visit WisdomPanel.com and click on "Dog Community" and you can search for dogs with the same mix of breeds as your own, or upload a photo and story about your own dog. It's easy, fun and a great way to share your results.

Terms and Conditions

Each dog is unique and their physical and behavioral traits will be the result of multiple factors, including genetics, training, handling, and environment. Using a proprietary analysis and database, **Wisdom Panel** products can provide insight into the breed ancestry of your dog, the predicted genetic adult weight range, and breed-related risks of developing certain genetic diseases. A dog's weight range can vary significantly depending on age, diet, and exercise.

Wisdom Panel products are not intended to diagnose diseases or predict behavior in any particular dog. **Wisdom Panel** products are designed and intended to be used solely to identify the genetic breed makeup and predict the adult size of such a mixed-breed dog; to confirm the genetic profile observed in a tested dog matches a particular breed profile; or in certain products to identify risks of developing certain genetic diseases or conditions. No other purpose is intended, authorized, or permitted.

Upon receipt of the sample, Mars Veterinary will analyze the dog's DNA to determine the breed(s) present in its recent ancestry. In all cases this is done with a reasonable degree of certainty. Portions of DNA samples of some dogs may not include any purebreds and those ancestors will simply be noted as being mixed breeds. **Wisdom Panel** products are based upon the Mars Veterinary database of validated breeds. If a dog's ancestry contains breeds not represented in our database, the results may identify related breeds that are contained in the database.

In the unlikely event that it is not possible to determine breed history, predicted adult weight range, or breed related health risks, or that an error in the analysis occurs, liability by Mars Veterinary or related companies and individuals is expressly disclaimed. Damages, if any, are limited to the payment actually received by Mars Veterinary for the specified analysis at issue.

Mars Veterinary's testing procedures are designed to provide reliable and accurate results. Mars Veterinary is not responsible for any errors in obtaining the swab sample or for any injuries or loss that may occur as a result.

Many countries and provinces have breed-specific ordinances and laws that may require special handling or prohibit the ownership of some dogs with a particular breed in their genetic background. **Wisdom Panel** is not intended to be used by regulatory or animal control officials to determine whether a particular breed is legislated or banned in a particular country or province. Nor is **Wisdom Panel** intended to be used in any judicial proceedings. Rather, it is intended to be used as a tool or resource in determining a dog's genetic history. Neither Mars Veterinary nor any related company is responsible for compliance or notification regarding these matters.

Use of the tests acknowledges consent that Mars Veterinary may use any portion of the leftover sample, as well as the data collected, for research and development purposes only.

*This code is good for one-time use, on wisdompanel.com only. It cannot be combined with any other promotions or discounts and cannot be used on/in any other retailer site(s) or storefronts.





STATEMENT OF AUTHENTICATION

Owner's name: **Shannon Baker**

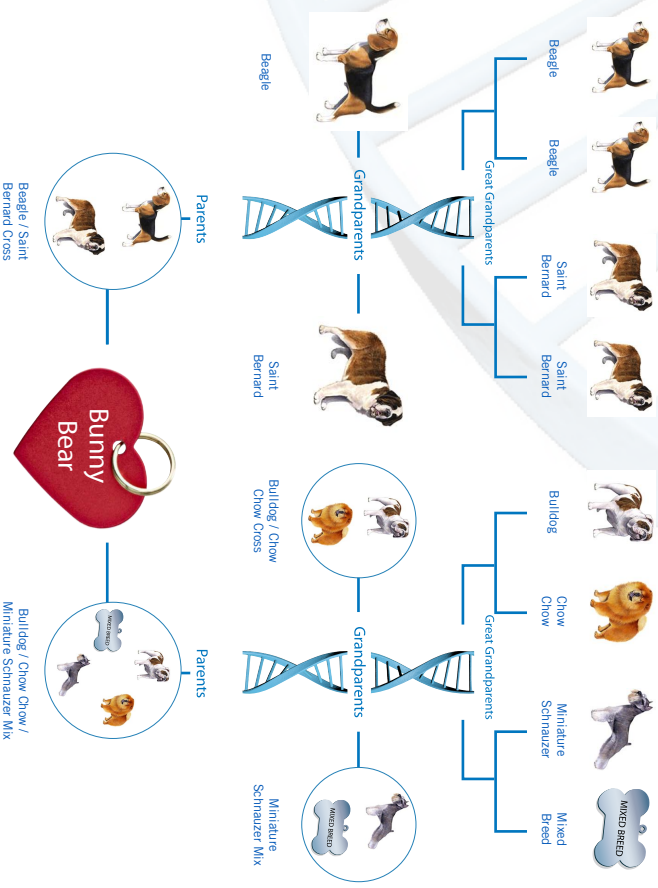
Dog's name: **Bunny Bear**

Date: **March 10, 2016**

This certifies the authenticity of Bunny Bear's canine genetic background as determined following careful analysis of more than 300 genetic markers using **Wisdom Panel**. The purebred dog breed signature matches included in this analysis are those that were detected in the last three generations of Bunny Bear's ancestry using the proprietary breed detection algorithm at Mars Veterinary.

Dr. Cynthia Cole DVM, PhD, DACVCP

Research & Development Director



**Bunny Bear is a Beagle, Saint Bernard,
Bulldog, Chow Chow, Miniature Schnauzer Mix**

