

Congratulations!

You're about to uncover the story of your dog's ancestry.

In this report, you will find detailed results from **Cosette's Wisdom Panel® Professional** DNA analysis.

In the following pages, you will learn about:

- BREED DETECTION
- APPEARANCE, BEHAVIOR & HISTORY
- BREED APPEARANCE
- SHARING YOUR DOG'S STORY

It is important to carefully review your entire report and discuss the results with your veterinarian to gain the most valuable insight into **Cosette**.

Owner Name: **Jennifer Smith**

Test Report Code: **4000049615**

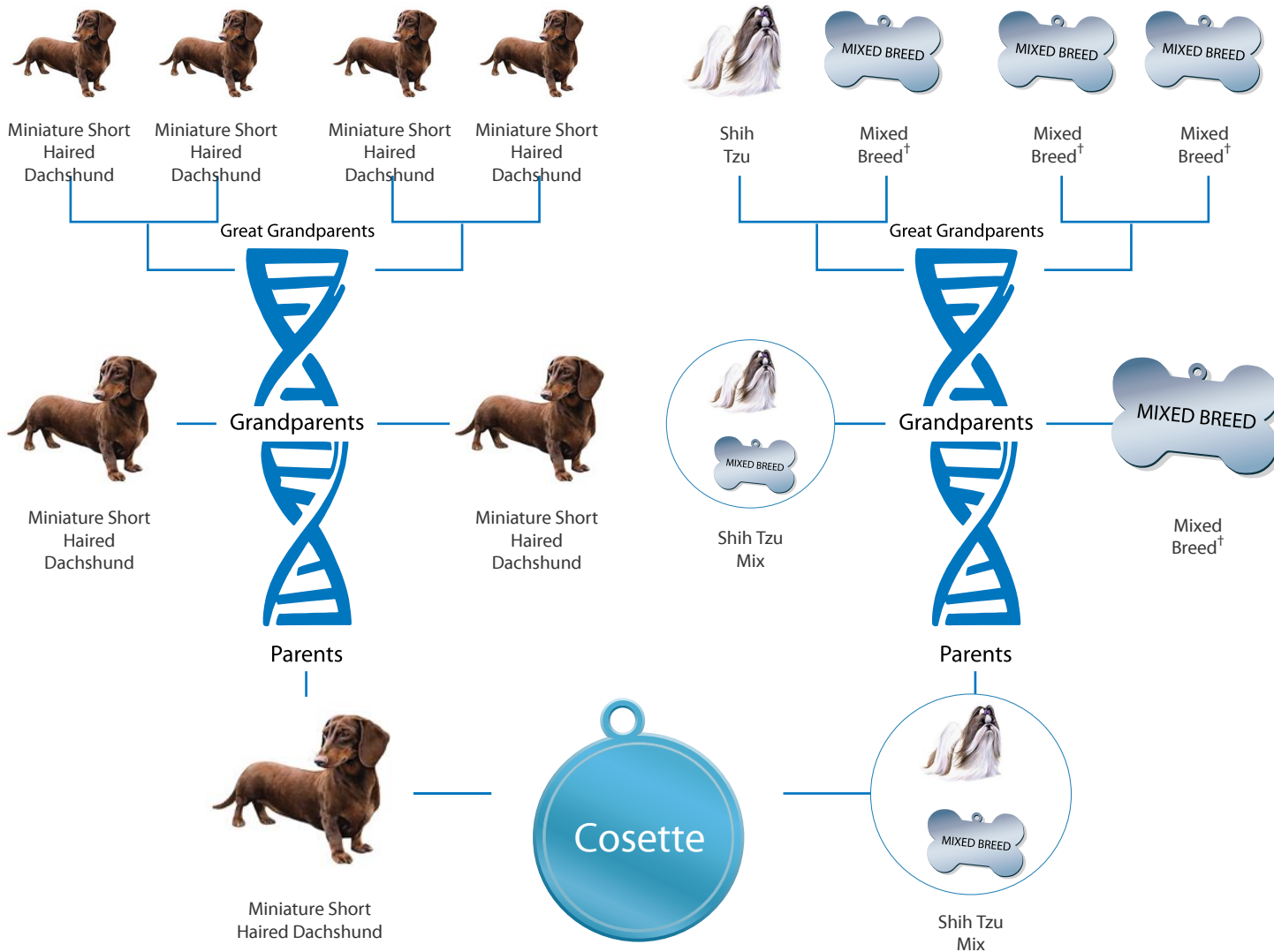
Date Printed: **June 23, 2014**

What's Your Dog's Tale?

COSETTE

You have a Miniature Shorthaired Dachshund, Shih Tzu Mix!

The *Wisdom Panel® Professional* 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 Cosette. 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!

Miniature Shorthaired Dachshund


Height:

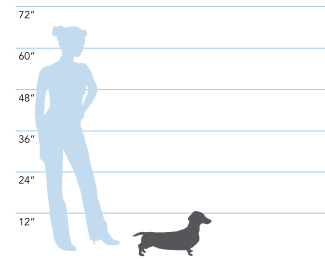
5 - 7 in

Weight (Show):

4 - 11 lb

Weight (Pet):

5 - 13 lb

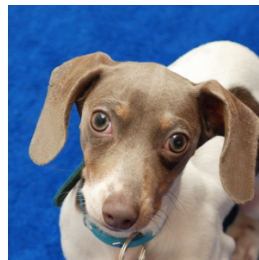
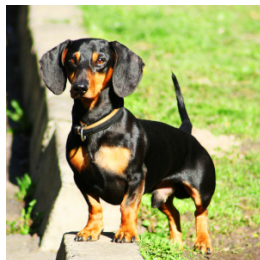

Ears:

Muzzle:

Tail:


The Dachshund, also known as the “hot dog” or “wiener dog,” dates back to the fifteenth century. Many accept the theory that the breed originated in Germany, although there is evidence that suggests that the breed may also have been present in Greece, Egypt, China and Mexico. The Dachshund was originally developed to hunt badgers, but they are also well-suited for hunting larger game. In 1888 the German Dachshund Club was founded and a breed standard was developed in an effort to promote a dog that was as beautiful as it was intelligent. The miniature short-haired variety is believed to have resulted from crossbreeding with toy terriers and miniature pinschers. The breed was introduced to the United States in 1885 and received American Kennel Club recognition at that time.

The Miniature Shorthaired Dachshund has a variety of coat colors with solid or bicolor combinations of light and dark black, red and tan shades. The brindle and dapple patterns are also sometimes seen in this breed as well as blue eyes.



Do you recognize any of these Miniature Shorthaired Dachshund traits in Cosette?

- Alert, lively and active dogs.

- Because of their background as hunting dogs may engage in behaviors such as barking, scratching at the ground or digging and chasing wildlife.

- Enjoy activities that take advantage of its keen sense of smell like earthdog trials and both outdoor and indoor tracking. Many retrieve tennis balls.

- May be suspicious or fearful of strangers, in some cases as a way to avoid discomfort from being picked up due to their long-backed body.

Shih Tzu



Shih Tzu

Height:

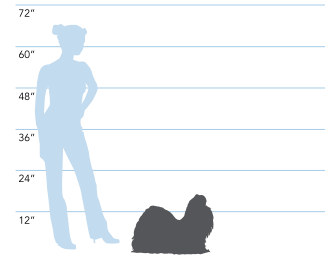
10 - 11 in

Weight (Show):

10 - 18 lb

Weight (Pet):

10 - 21 lb

**Ears:**

Multiple types possible

Muzzle:**Tail:**

The Shih Tzu was a breed that was created in Tibet during the seventeenth century. The development of the Shih Tzu was achieved by the crossbreeding of the Lhasa Apso and Pekingese breeds. This crossbreeding occurred when a Lhasa Apso was given as a gift by the Dalai Lama to the Emperor of China. The Emperor had a Pekingese in his palace and this Pekingese mated with the Lhasa, resulting in the world's first litter of Shih Tzu puppies. Eventually, the breed became very popular in the Imperial Court, but in 1908 after the death of Empress Tzu Hsi, most Shih Tzu breeding came to a stop. This was further complicated by the Communist Revolution in China, which nearly caused the breed to become extinct. The Shih Tzu was saved, however, by a pool of 14 dogs that were introduced into England. The Shih-Tzu did not find its way to America until after World War II, when they were brought back with American soldiers. The breed received official American Kennel Club recognition in 1969.

The Shih Tzu is a breed with a wide variety of colors, with all permissible under the breed standard. The colors can be blacks, browns, silvers, creams, and brindle (black and brown pattern) in solid, particolored or tricolor with lots of white. Black markings or a black mask are also seen in this breed.



Do you recognize any of these Shih Tzu traits in Cosette?

- Alert, active, playful and are usually friendly dogs. Can participate in dog sports such as agility and rally or competitive obedience.
- Stubborn tendencies may be lessened by using reward-based training involving small treats and favorite toys.
- Shih Tzus are moderately active when indoors and since they are small do well in apartments.
- May be intimidated by other dogs, causing defensive barking leading to confrontations.

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 a 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, but - much more commonly - your dog's looks and personality will blend aspects of these breeds. Consider the example below...

In this example, you can see how many of Tula's physical traits are due to a blending of breed influences.

YELLOW COAT COLOR

requires two copies of a gene variant and is available from the Labrador Retriever, Poodle, and Golden Retriever.

BLACK NOSE

eye rims, lips, and pads on her feet are all due to one copy of the black gene variant that is available from all three ancestral breeds.

SOFT CURL

is coming from one copy of the curly gene variant from the Poodle and one copy of the straight variant from the Golden Retriever parent.

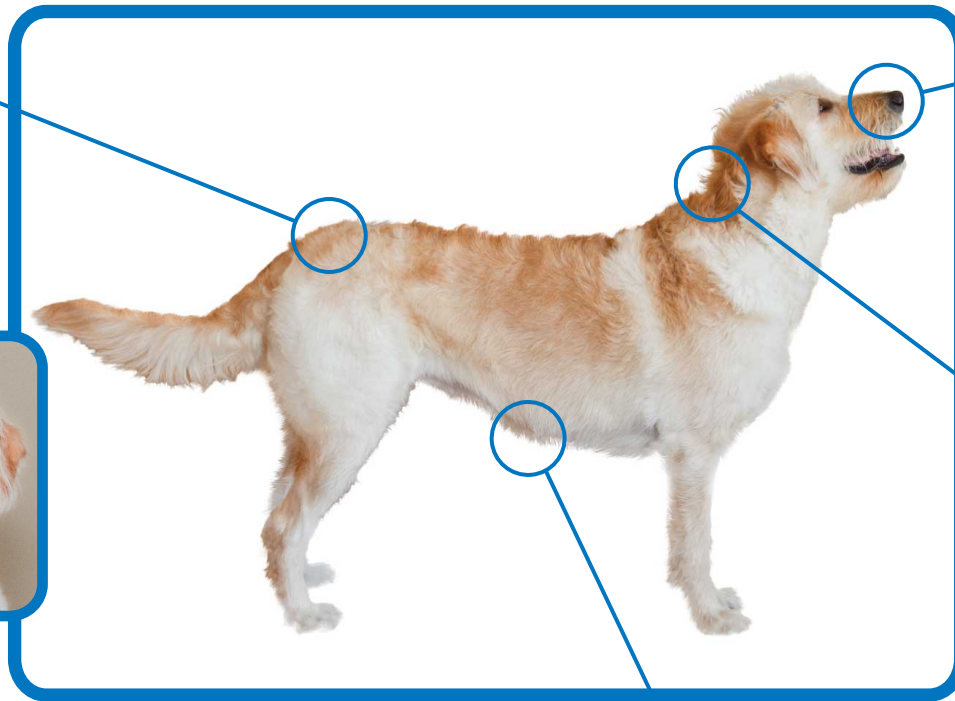


FURNISHINGS

- the "beard" and "eyebrows" - is due to one copy of the furnishing gene variant from the Poodle.

SHORT HAIR

is due to one copy of the gene variant from the Labrador Retriever that is dominant to the long coat of the Golden Retriever and Poodle.



Wisdom Panel® Professional found these breeds in our example dog Tula:



Golden Retriever



Labrador Retriever



Standard Poodle



For additional information, watch an illustrative video at <http://youtu.be/UAcPOch4-C8> - it provides educational content around canine DNA, the basic blueprint for life, and a closer look at inherited genes.

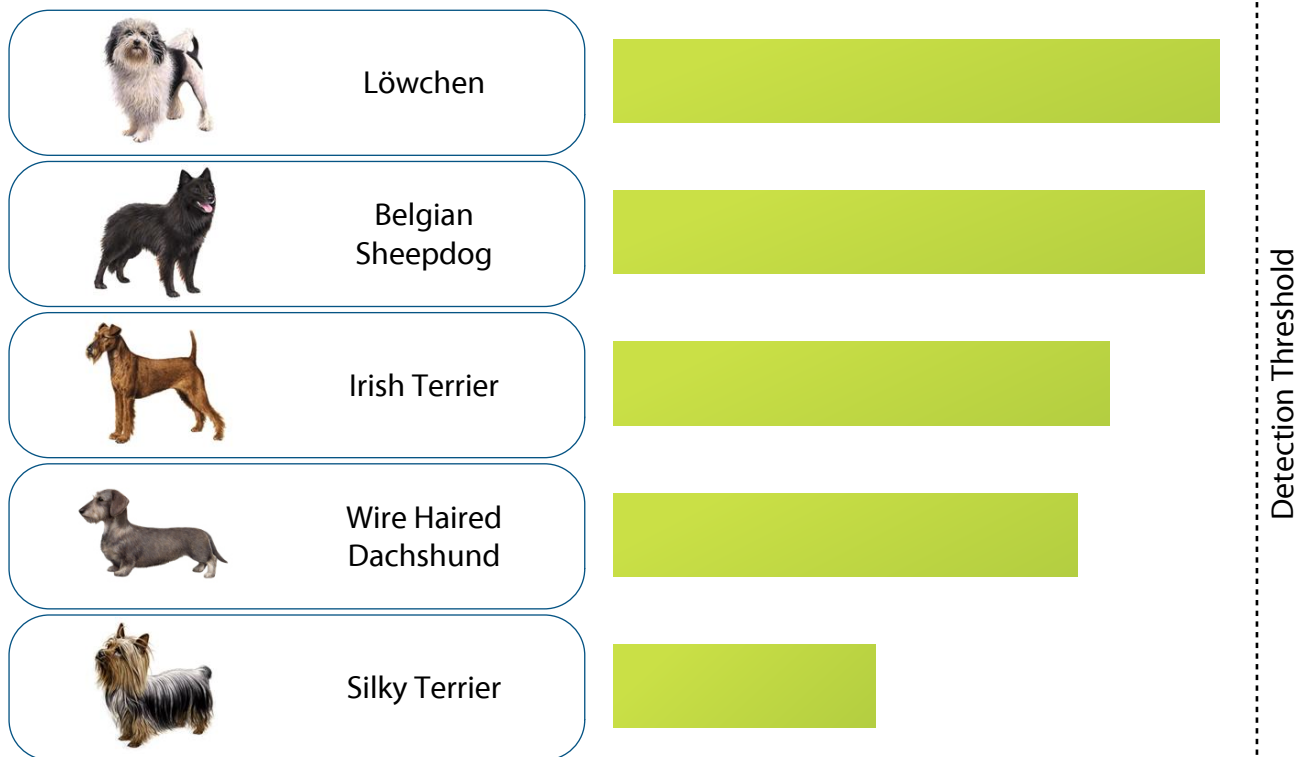


What does the Mixed Breed Ancestry mean for Cosette?

A portion of Cosette's ancestry was predicted to be mixed beyond 3 generations. While it is difficult to identify strong breed signals in this mixed portion, the 5 breeds with the strongest statistical likelihood identified in the analysis of your dog's DNA are listed below.

The breeds are listed by the relative strength of each result in the analysis with the most likely at the top of the list. One or more of these breeds **could have** contributed to the genetic makeup of the ancestors indicated by the mixed breed icon. Note that it is highly unlikely that all these breeds are present in Cosette's ancestry.

There could also be a breed or breeds present in the mixed breed component that cannot be detected with the current database of over 250 breeds, types and varieties.



How Wisdom Panel Professional 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 for over 250 breeds, varieties, and types 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.

Thank you for choosing *Wisdom Panel® Professional* to uncover the story of your dog's ancestry!

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

Visit www.Genesis4Pets.com to find out more about your dog's health-care needs: you'll feel better knowing that you're doing everything you can to keep your pal happy and healthy. In addition to loads of free, easy-to-understand information based on the latest medical research, you will receive a 50% discount on all downloadable health-care booklets that explain the common health concerns for individual breeds. Simply enter promotional code **WISDOM** when you check out to receive your discount (expires 30 days after you receive your Wisdom Panel report).

Predicted Adult Weight Profile for Cosette:

Based upon the breeds detected in Cosette's ancestry and the genetic markers analyzed by *Wisdom Panel Professional*, as well as the information provided that Cosette is **Female** and **Intact**, we have calculated the likely weight that Cosette should reach when an adult. The *Wisdom Panel Professional* 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 9 - 19 lbs.
- If Spayed, the adult weight is predicted to be between 10 - 21 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. If your dog's body condition is different from the ideal body condition score, we anticipate that your dog might be under (if underweight) or over (if overweight) the weight predicted by *Wisdom Panel Professional*.

To learn more about assessing body condition score please use the Royal Canin™ Body Condition Score Chart.

More information on this can be found at: <http://www.wisdompanelpro.com/sizeprediction/>

Tell Your Dog's Tale

Join our online community of mixed-breed dog owners and share your dog's *Wisdom Panel Professional* story with the world. At WisdomPanel.com you can:

- Register your dog and upload photos into our Wisdom Panel photo gallery
- Get help to show off your dog's breed profile on your blog, Dogster page, Facebook and Myspace profiles
- Access your report online with our Test Status Checker.

This will also allow you to access Mixed-Breed Genesis health reports provided by VetThink™ which are designed to assist you to take the best possible care of your dog throughout its life.



Visit www.wisdompanel.com/photos and use these details to create your dog's profile:

Owner: **Jennifer Smith**
Report Code: **4000049615**

Each dog is unique and their physical and behavioral traits will be the result of multiple factors, including genetics, training, handling and environment. *Wisdom Panel® Professional*'s proprietary genetic analysis is intended to provide owners insight to potential predispositions to physical and behavioral traits in breeds which have been identified in your dog and is not intended to predict disease or behavior in any particular dog.

As part of the *Wisdom Panel Professional* service, Mars Veterinary performs thirteen disease screening tests for known genetic mutations using a high throughput genotyping panel. Each test is run twice on the genotyping panel in opposite orientation to ensure that results are consistent and as accurate as possible. Occasionally due to variations in DNA sample quality it may not be possible to provide a result for a specific mutation test if the marker fails to give a DNA genotype call in testing. Mars Veterinary and Mars, Incorporated are not associated with and do not endorse or sponsor the commercial tests being conducted by VetGen, Washington State University, University of Minnesota, The Animal Health Trust or Optigen.

Wisdom Panel Professional is used to help determine the breed makeup of a dog. Validation testing has resulted in an average accuracy* of 90% in first-generation crossbred dogs of known parentage. The breeds in this validation study represent 45% of AKC registrations.

In the unlikely event that it is not possible to determine breed history or that an error in the breed analysis, disease mutation screening, size prediction, or health indicator analysis occurs, liability by Mars Veterinary or related companies and individuals is disclaimed and damages in any event are limited to the payment actually received by Mars Veterinary for the individual specified analysis at issue.

The *Wisdom Panel Professional* product is designed and intended to be used solely to identify the genetic makeup and predict the adult size and breed-related health risks of a mixed breed dog and no other purpose is authorized or permitted. Consult your veterinarian for information regarding your particular dog's physical and behavioral condition.

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 Professional* 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 Professional* 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.

*Accuracy was determined by average Positive Predictive Value across breeds studied. Breeds detected at low levels of certainty were not included in accuracy calculation.

Breeds Ancestry Certification

Wisdom Panel® Professional certifies that:

Cosette

is a genetic mixture of the following canine breeds:

Miniature Shorthaired Dachshund and Shih Tzu.

June 23, 2014

Statement of Authenticity

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

Dr. Neale Fretwell

Research & Development Director

