

Dear Dr. Gustafson,
This is your analysis summary for Chrisje Field's dog Maddie.

Dr. null Gustafson
ABC Veterinary Hospital
330 RANCHEROS DRIVE ST. 102,
SAN MARCOS, CA 92069

Vet Fax #:

Owner Name: **Chrisje Field**

Pet Name: **Maddie**

Report Code: **4000049173**

Date Processed: **December 10, 2013**

Report Summary:

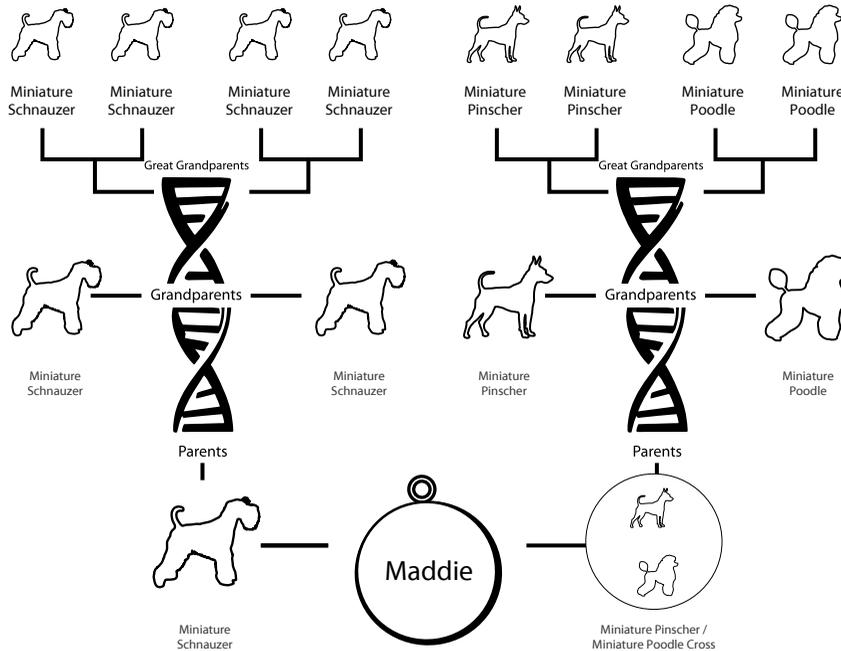
As of today's date, *Wisdom Panel® Professional* compares the tested sample against the DNA of over 250 breeds, types, and varieties taken from over 10,000 dogs across the world. This comprehensive test also checks for 7 specific disease mutations and uses the breeds detected in the analysis to alert Veterinarians about an additional 28 health indicators and to predict the adult weight of the tested dog.

We hope the following information will help you to develop a custom care and wellness plan for Maddie:

- Maddie's test results show Miniature Schnauzer crossed with Miniature Pinscher / Miniature Poodle Cross.
- Maddie was tested for 7 disease causing mutations – all results were negative.
- The predicted weight ranges for Maddie are:
 - Spayed Female: 10 - 20 lbs

Maddie is a Miniature Schnauzer, Miniature Pinscher, Miniature Poodle Cross!

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 Maddie. The ancestry chart depicting the best statistical result of this analysis is shown in the picture below.



Genetic mutation tests performed for Maddie:

Wisdom Panel® Professional currently examines 7 specific disease causing mutations in every sample submitted. The results for Maddie are as follows; positive results are highlighted and additional information for those conditions is provided below.

Disease	Gene	Mode of inheritance	Test Results
Myotonia Congenita	CLCN1	recessive	negative
Factor VII Deficiency	FVII	recessive	negative
Hyperuricosuria	SLC2A9	recessive	negative
Cystinuria	SLC3A1	recessive	negative
Phosphofructokinase Deficiency	PFKM	recessive	negative
Primary Lens Luxation	ADAMTS17	likely recessive but may also affect some heterozygotes	negative
Pyruvate Kinase Deficiency	PKLR	recessive	negative

Health Indicators for breeds detected in Maddie:

Wisdom Panel® Professional provides relevant background information for veterinarians concerning inherited diseases that are known to occur in certain dog breeds. *Wisdom Panel Professional* is not intended to diagnose diseases or predict behavior in any particular dog. Health indicators are provided for the veterinarian's information only so that they can advise their clients on the potential need for future confirmatory testing for specific disease conditions, the health indicators do not test for any specific disease mutation.

Disease	Mode of inheritance	Breed detected?
Progressive Rod Cone Degeneration (Prcd-PRA)	recessive	Miniature Poodle - not detected on chromosome

Progressive Rod Cone Degeneration (Prcd-PRA):

Prcd-PRA is one of a group of diseases (Progressive retinal atrophy – PRA) that cause the retina of the eye to degenerate slowly over time. The “rod” cells operate in low light levels and are the first to lose normal function resulting in night blindness. Typically, the clinical disease is recognized first in early adolescence or early adulthood. Most affected dogs will eventually become blind. Prcd-PRA is a recessive disorder meaning that dogs must inherit two copies of the mutated PRCD gene to be at risk of developing the clinical signs.

Additional information on progressive rod cone degeneration can be seen online at:
www.wisdompanelpro.com/healthprescreening/

Predicted Adult Weight Profile for Maddie:

Based upon the breeds detected in Maddie's ancestry and the genetic markers analyzed by **Wisdom Panel® Professional**, as well as the information provided that Maddie is Female and Spayed, we have calculated the likely weight that Maddie 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.

Adult Weight Profile for Maddie:

Maddie's adult weight is predicted to be between 10 - 20 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 Maddie's lifetime nutrition and exercise regimen. If Maddie's body condition is different from the ideal body condition score, we anticipate that Maddie 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/>

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 patient'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.

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 seven 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 cities and communities have breed specific ordinances and laws which may require special handling or prohibit the ownership of some dogs with a particular breed in their genetic background. Check with your local authorities to determine if your dog's genetic profile requires you to comply with any laws, regulations or ordinances in your area. The **Wisdom Panel Professional** test is not intended for use to determine whether an individual dog contravenes local regulations or ordinances.

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

If you have any questions please contact Mars Veterinary at 1.888.K9.PET.TEST.