K9 SMILES™

FINAL REPORT

PetDNA Labs
Genetics Unleashed

Pet Information

Name: Red Rover
Dog Id#: 2415
Age: 11 year(s)
Owner: Sample, Report
Breed: Beagle
Gender: Neutered Male
Periodontal Classification: Not Provided

Ordering Provider

Rex Harrison DVM
1234, Test Way
Eden Prairie, MN 55344
952-942-0671

Sample Information

Specimen#: 3999071930
Accession#: 201602-05283
Specimen: Swab
Collected: 02/20/2016 05:15
Received: 02/23/2016 08:27
Reported: 02/25/2016 09:17

MOLECULAR DETECTION OF PORPHYROMONAS GULAE PATHOGENS

Result: High Risk - Action Needed

How To Interpret These Results:

The combination of types of the bacteria Porphyromonas gulae (Pg) is abnormal and consistent with the profile and amounts of infection seen in dogs with moderate to advanced periodontal (gum) disease. Your pet is at risk for disease of other body organs due to this infection. An evaluation by your animal care professional is recommended. See comments.

Systemic Risk	Pg fimA	Percentage (of each Pg type)	Pg Normalized Load (Expected Normal Range)	Clinical Significance
Mild ↑ Severe	Type A	23.4%	**35.5** (0 - 128)	The presence of the Pg fimA Type A pathogen is common, and is typically associated with mild oral inflammation and risk for periodontitis. At very high levels Type A may be linked to severe disease[1].
	Type B	18.5%	**28.1** (0 - 8)	The presence of Pg fim A Type B pathogen is linked to clinical signs of periodontitis, more serious oral inflammation and the risk of systemic illness. This infection can spread to other body sites through the blood[1].
	Type C	58.1%	**88.5** (0 - 27)	The presence of the Pg fimA Type C pathogen is linked to more severe and potentially irreversible periodontal changes and chronic systemic effects than Types A or B. This includes severe symptoms, marked inflammation, tooth loss and bone destruction[1].

Canine Periodontitis and its Causes:

Periodontal disease is the most commonly diagnosed problem in small animal veterinary medicine. By age 3, the majority of dogs have some form of periodontal disease, but in most cases there are few clinical signs[2, 3]. The early signs are plaque that hardens into tartar. Studies have shown that Pg species are the key pathogens in promoting destructive oral inflammation and growth of other bacteria in dental plaque, contributing to gingivitis and periodontal disease. This may lead to tooth loss, pain, systemic illness and decreased overall health and well-being. Home care alone is not always effective to prevent this. By compromising the immune system, pathogens causing periodontal disease are linked to heart, kidney and liver disease.

What Should I do:

The combination of these test results along with signs from your pet, including red gum tissue, tartar (staining) on the teeth and bad breath are reasons to seek a full veterinary dental examination. Further, this test indicates that you should have your pet's teeth cleaned, or in advanced cases, receive a treatment course of antibiotics and cleaning. Additionally, ask your veterinarian about tests and X-rays to check for signs of disease in the kidneys, heart and liver associated with these oral bacteria.

Methodology: Genomic DNA is extracted from the submitted sample and tested for 3 variants of the Porphyromonas gulae associated with periodontal disease. The bacteria are tested by polymerase chain reaction (PCR) amplification followed by real-time fluorescence detection. This assay is designed to detect isotypes of Porphyromonas gulae, but has the limitation of cross-reacting with Porphyromonas gingivalis, another bacteria known to cause periodontitis. PetDNA Labs is a service of Access Genetics, LLC which is a CLIA and CAP accredited laboratory.

References:

1. *Yamasaki Y, et al. Distribution and molecular characterization of Porphyromonas gulae carrying a new fimA genotype. Veterinary Microbioloogy 2012; 161:196-205*
2. *Niemiec BA. Periodontal Disease. Topics in Companion Animal Medicine 2008; 23(2):72-80.*
3. *Pet Dental Care. Informational brochure, AMVA, 2015.*

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