

Laboratory Report

Laboratory #:	10085	Call Name:	Lydia
Order #:	3414	Registered Name:	Callibreeze Fire And Ice
Ordered By:	Rosanne Starkman	Breed:	Australian Shepherd
Ordered:	April 9, 2015	Sex:	Female
Received:	May 4, 2015	DOB:	Nov. 2014
Reported:	May 8, 2015	Registration #:	BW584002
		Microchip #:	956000004774005

Results:

Disease	Gene	Genotype	Interpretation
Collie eye anomaly	<i>NHEJ1</i>	WT/WT	Normal
Cone degeneration	<i>CNGB3</i>	WT/WT	Normal
Degenerative myelopathy	<i>SOD1</i>	WT/WT	Normal
Hereditary cataracts (Australian Shepherd type)	<i>HSF4</i>	WT/WT	Normal
Hyperuricosuria	<i>SLC2A9</i>	WT/WT	Normal
Multidrug resistance 1	<i>ABCB1</i>	WT/M	Carrier
Multifocal retinopathy 1	<i>BEST1</i>	WT/WT	Normal
Neuronal ceroid lipofuscinosis 6	<i>CLN6</i>	WT/WT	Normal
Progressive retinal atrophy, Progressive rod-cone degeneration	<i>PRCD</i>	WT/WT	Normal

WT, wild type (normal); M, mutant

Interpretation:

Molecular genetic analysis was performed for specific mutations of nine genes reported to be associated with disease in dogs. We identified two normal copies of the DNA sequences in eight of the genes tested. Thus, this dog is not at an increased risk for any of the diseases associated with these eight genes. However, we identified one normal copy and one mutant copy of the DNA sequences for *ABCB1*. Thus, this dog is a carrier of multidrug resistance 1.

Recommendations:

Multidrug resistance 1 is known to be inherited in an autosomal recessive manner in dogs. Based on this, and the fact that this dog showed a mutation in one copy of the *ABCB1* gene, this dog is a carrier of multidrug resistance 1. Dogs affected with this disease lack the ability to remove certain drugs and toxins from the central nervous system putting them at risk for developing neurologic symptoms that could range from tremors, excess salivation, anorexia, and blindness to coma and even death. Though adverse reactions to certain drugs are most commonly seen in dogs having two copies of the mutated gene, carrier dogs can also experience drug sensitivities and dosages need to be adjusted accordingly. Thus,

dogs that have one or two mutant copies of the gene are considered at risk for adverse drug reactions. Your veterinarian should be notified that this dog is a carrier for multidrug resistance 1 prior to administration of any medications. When carriers of this mutation are bred with another dog that also is a carrier of the same mutation, there is risk of having affected pups. For each pup that is born to this pairing, there is a 25% chance that the puppy will inherit two copies of the mutation and a 50% chance that the puppy will inherit one copy of the mutation and, in either case, may be susceptible to having adverse drug reactions. Dogs related to this dog have an increased risk to be affected by or carry this mutated gene. Additional testing for this mutation is indicated for related dogs.

Paw Print Genetics™ has genetic counseling available to you at no additional charge to answer any questions about these test results, their implications and potential outcomes in breeding this dog.



Christina J Ramirez, PhD, DVM, DACVP
Medical Director



Casey R Carl, DVM
Associate Medical Director

Normal results do not exclude inherited mutations not tested in these or other genes that may cause medical problems or may be passed on to offspring. These tests were developed and their performance determined by Paw Print Genetics™. This laboratory has established and verified the tests' accuracy and precision. Because all tests performed are DNA-based, rare genomic variations may interfere with the performance of some tests producing false results. If you think these results are in error, please contact the laboratory immediately for further evaluation.