

Laboratory Report

Laboratory #:	9040	Call Name:	Lil Hoss
Order #:	3030	Registered Name:	Watson's Lil Hoss
Ordered By:	Connie Watson	Breed:	Miniature Australian Shepherd
Ordered:	March 14, 2015	Sex:	Male
Received:	April 3, 2015	DOB:	Oct. 2013
Reported:	April 14, 2015	Registration #:	MA221,121,056B

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/M	Carrier

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 seven of the genes tested. Thus, this dog is not at an increased risk for any of the diseases associated with these seven 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. In addition, we identified one normal copy and one mutant copy of the DNA sequences for *PRCD*. Thus, this dog is also a carrier of progressive retinal atrophy, progressive rod-cone degeneration.

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,