

ANIMAL GENETICS

HEREDITARY NASAL PARAKERATOSIS (HNPK)

Hereditary Nasal Parakeratosis is an inherited disease affecting the nose of Labrador Retrievers. Beginning around 6 to 12 months of age, affected dogs develop dry, rough, grey to brown crusts and rarely, painful cracks on the tip of the nose. In some cases, lesions are also present on the haired area around the nose. The noses of affected dogs are prone to superficial bacterial infections and often become depigmented over time. Affected dogs are otherwise healthy. Symptoms often wax and wane in severity over the dog’s life. Though manageable, this disorder requires continuous topical therapy to prevent recurrence of excessive nasal crusting.

Breed-Specific Information for the Labrador Retriever

The mutation of the SUV39H2 gene associated with hereditary nasal parakeratosis has been identified in Labrador Retrievers, although its overall frequency in this breed is unknown.

Testing Tips

Genetic testing of the SUV39H2 gene in Labrador Retrievers will reliably determine whether a dog is a genetic carrier of hereditary nasal parakeratosis. Hereditary Nasal Parakeratosis is inherited in an autosomal recessive manner in dogs meaning that they must receive two copies of the mutated gene (one from each parent) to develop the disease. In general, carrier dogs do not have features of the disease but when bred with another carrier of the same mutation, there is a risk of having affected pups. Each pup that is born to this pairing has a 25% chance of inheriting the disease and a 50% chance of inheriting one copy and being a carrier of the SUV39H2 gene mutation. Reliable genetic testing is important for determining breeding practices. In order to eliminate this mutation from breeding lines and to avoid the potential of producing affected pups, breeding of known carriers to each other is not recommended. Labrador Retrievers that are not carriers of the mutation have no increased risk of having affected pups.

Source: <https://www.pawprintgenetics.com/products/tests/details/138/?breed=76>

The prevalence of this condition in South Africa is unknown but is likely uncommon in purebred, registered Labradors. Some breeders test locally bred dogs for the condition and most breeders do test if the dog is imported. Note that many breeders will include carriers of the disease in their breeding programme, always making sure that the mate is clear. This carefully implemented strategy is done to ensure continued genetic diversity in the breed and poses no risk to the puppies.

BREEDING IMPLICATIONS				MATERNAL CANDIDATE					
				CLEAR		CARRIER		AFFECTED	
		G	G	G	A	A	A		
PATERAL CANDIDATE	CLEAR	G	G	GG	GG	GG	GA	GA	GA
				ALL CLEAR		50% CLEAR 50% CARRIER		ALL CARRIER	
	CARRIER	G	A	GG	GA	GA	AA	GA	AA
				50% CLEAR 50% CARRIER		25% CLEAR 50% CARRIER 25% AFFECTED		50% CARRIER 50% AFFECTED	
AFFECTED	A	A	GA	GA	GA	AA	GA	AA	AA
				ALL CARRIER		50% CARRIER 50% AFFECTED		ALL AFFECTED	

Source: Inqaba Biotec