**DNA testing – to make it worthwhile...**

**Specific information for Shar-Pei breeders**

**Author: Mgr. Viera Staviarska (March 2023)**

We live in an era when genetic testing is being increasingly used in responsible and controlled breeding to prevent the risk of genetically influenced diseases, to gain information about potential parents, or to influence the phenotype (appearance) of future offspring.

Genetic testing creates a safer zone and room for breeders to improve the health of their breeding stock. If used wisely, it can even be a tool to obtain a desirable phenotype (appearance) that would be characteristic for a particular breeder (e.g. puppy colours, avoiding the risk of long hair...). It is positive that the demand for the use of DNA tests keeps increasing. In order to be make it reasonable, we need to know which tests are currently suitable and available for the Shar Pei breed and which ones are irrelevant and can be misleading.

This is also the time when both clubs and individual breeders start using genetic testing to breed their dogs in a sophisticated way and to avoid health problems in future offspring as far as possible. Some breeders are only considering this possibility, and are waiting perhaps for some inspiration or more reasons to incorporate genetic testing into their routine breeding practice.

There is an enormous number of DNA tests available today. For example, Laboklin alone currently offers more than 300 DNA tests in its online catalogue. This does not mean that they are applicable to every breed. It is necessary to know which are suitable for the Shar Pei breed and what we can expect from them. We need to use the opportunities wisely and purposefully.

Genetic tests can be divided into those that define the genetic transmission of diseases and are relevant only to the Shar Pei breed and those that detect disease genes occurring very randomly in the breed, while the latter are relevant to several or all breeds.

To ensure the accuracy of the expert information, I asked the experts from the SK Laboklin laboratory, which has a network of laboratories in Slovakia and in other European countries offering not only a large variety of tests, but also a large database of results and experience, for their opinion and consultation.

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**Questions and answers**

Answers by MVDr. Kistína Takacsová – Laboklin SK

**What DNA health tests are designed/suitable for the Shar Pei breed?**

* **SPAID (Shar Pei autoinflammatory disease)**
* **POAG/PLL (Primary open-angle glaucoma with lens luxation)**
* Degenerative myelopathy exon 2 (DM ex.2)\*
* Malignant hyperthermia (MH)\*
* Hyperuricosuria\*
* Chondrodyslasia/dystrophy\*
* DNA profile, paternity testing...

*Note from the author of the article:* ***Bold*** *indicates diseases that need to be eliminated in Shar Pei breeding because they occur at a rate that can significantly affect the health of the entire population. Therefore, these tests are highly recommended to breeders as a necessary tool for the breed and bloodline control and recovery.*

*The SPAID test is an indication of the likelihood that the disease may occur. It does not mean that the dog is sick. A SPAID/SPAID result means a high risk of developing the disease (but may not with good immunity); an N/SPAID result means a medium risk of developing the disease (however, the disease may not develop); N/N means zero risk of the disease in any form. However, the disease can appear randomly, as in a completely different breed.*

***SPAID – autosomal dominant inheritance with variable penetrance****. In N/SPAID carriers, the mutated gene manifests phenotypically (dominant type of inheritance, affected gene predominates). The degree of manifestation depends on penetrance: with incomplete penetrance, manifestations in carriers are milder than in affected individuals.*

*For POAG/PLL disease, the result is a little more revealing. A dog that has a clean N/N result will neither be affected nor transmit the disease; An N/POAGPLL genotype carrier can transmit the disease to its offspring, but the dog itself is very unlikely to get the disease; a POAGPLL/POAGPLL homozygote–affected individual is highly likely to develop the disease. Therefore, be vigilant to notice the first signs as soon as possible to give the dog early treatment to slow down the progression.*

***\*****Tests applying to several or all breeds. They do not necessarily mean that the disease is critically prevalent in the breed. However, diseases can also occur randomly in any breed, including the Shar Pei. If an individual shows signs of the disease, the test can be made to confirm the assumption.*

**What DNA tests for coat texture, colour and pigment are suitable for the Shar Pei breed?**

We can test Shar Pei for:

* Coat length – a combination of tests required: Coat length I (short/long-haired) and Coat length II (short/long-haired). You will find out if your dog has the gene that causes long-haired offspring.
* Colours and pigmentation: mainly B-locus testing (brown, pigment intensity) and D-locus testing (dilution of the primary colour). EM-Locus (melanistic mask allele – black mask – dark pigment)

Since locus expressions affect one another, it is reasonable to test the whole combination of colours. In consultation with a molecular biologist, we can answer specific questions, such as: we have one partner of XX colour, XX genotype, what other partner should we breed it with to have/not to have these colours?

 **If we do the DNA health testing with a test not specified for the Shar Pei breed, can we expect relevant results?**

Unfortunately not, which is why we do not recommend genetic tests that are not designed for the particular breed.

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DNA testing makes sense, but it must be targeted and relevant tests must be used. Otherwise, the results cannot be interpreted correctly and can lead to fundamental breeding errors.

If you need any advice then use the consulting services of your regional Laboklin representative. They are ready to advise not only vets but also individual breeders.

Members of the breeders club in Slovakia (and certainly in other European countries, too) have a discount with Laboklin. However, you need to submit proof of club membership when the biological sample is collected. Bring it to the vet. You can ask for the proof from the club. Members of the European Federation of Shar Pei Clubs can also claim a discount.

Some contacts

Laboklin Slovakia: <https://sk.laboklin.online/kontakt/>

Laboklin Czech Republic: <https://cz.laboklin.info/>

Laboklin Germany: <https://laboklin.com/it/home/>

Laboklin UK: [https://www.laboklin.co.uk/laboklin/showGeneticTest.jsp?testID=8154D&testID=8154D](https://www.laboklin.co.uk/laboklin/showGeneticTest.jsp?testID=8154D&amp;amp;testID=8154D)

Laboklin France: <https://www.lepointveterinaire.fr/roy/les-fournisseurs/168_691-61/laboklin-france.html>