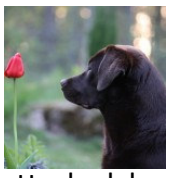
DLA-Study 2

MHC-Genes and the mating partner choice



DLA genes are still on our focus. In this study, we are not primary interested in autoimmune disorders but in the choice of the "right partner" for mating. Based on different genetic studies we know that DLA genes play an important role in immune defence. These genes are the first line of defence if the body gets attacked by foreign intruders. However, certain genetic variations or combinations of DLA genes are associated with an increased risk or protection for autoimmune diseases.

MHC-ll genes are not only part of the immune system but they also influence the body odour which is perceived subconsciously. MHC-II receptors, the products of the MHC-II genes, not only bind pathogens, they can also interact with certain body proteins. Especially these complexes are responsible for the individual body odour, which are also called pheromones. Pheromones are chemical messengers which serve as a subconscious transmitter of information on living being, its gender or genetic identity.

These odour signals also play an important role in partner choice of vertebrates, because individuals are able to compare their own MHC genotype with those of others. Sense of this mechanism is to maintain a high level of MHC gene or overall genome diversity. Special MHC genes or heterozygosity can have a positive effect on the resistance against pathogens. According to actual condition (parasite infections, changing environmental conditions) an adequate reaction can occur if there is a high genetic variety in MHC genes.

Nature was really inventive to maintain genetic variety. This begins with the choice of the "right" mating partner and lead to more drastic strategies like the abort of embryos with a low genetic quality after fertilization. In this case the female is earlier "available" for a new fertilization. This brings a new chance for getting a descendant with a high genetic variety without wasting time with breeding of a "inferior younger generation". This may sound horrible; however, it is one of the key mechanisms of nature to genetically protect whole populations and enables their adaption to varying and challenging environmental conditions.

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Aim of the study

An increasing amount of reports about failures in breeding reach us. Bitches absorbed puppies, did not get pregnant or in general matings were not successful. Some breeds are more affected than others. Might this be an efficient defence mechanism of females to avoid birth of weak descendants? In many cases pre-mating behaviour shows us if mating will be successful. Comparable with humans, there are dogs that love or hate each other at first appearance.

But what is really happening with our dogs?

Do MHC genes have an effect on mating partner choice? Are there any consequences concerning pregnancy? Do our dogs really use the so called "post copulative mechanism" avoiding weak descendants? We do not know yet, so we will try to answer these questions with the help of our new DLA study. We hope to get new important hints to fight against increasing breeding problems.

This study is planned as a long term study in which we would like to encourage breeders to carry out DLA typing of mating partners. By the use of questionnaires you can document mating behaviour of tested dogs, supporting us with important information used for analyses. The focus will be on the behaviour of dam and sire from the first appearance till the birth of the puppies.

This study does not prefer a special breed and all breeders are invited to join our study. It is also possible to be a part of the study if the dog has already been tested for MHC-II genes. It would be a big pleasure for us if breeding clubs join our study, especially those, who already have some breeding problems.

Course

The basic condition for joining our study is that mating of the announced bitch and sire is approaching. For correlations between mating behaviour and DLA genes, DLA types of both dogs must be known. If the DLA types do not exist it is absolutely necessary to test the DLA-haplotypes via DNA testing. In this case we need an oral mucosa swab or about 2ml of EDTA blood. Duration of DLA analysis is about 2 or 3 weeks after sample was

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received at our lab. Documentation of mating and behaviour will be done with our online questionnaires or downloadable PDFs. The questionnaire for bitches was divided into two parts. The second one has to be filled out after birth of the puppies.

Results of the DLA analysis will be sent per mail to the dog owner/breeder when the first questionnaire of the female and the questionnaire of the male were received in our lab. As already mentioned our study does not prefer a special breed. It's a long term study and duration depends on how long it takes to reach the sufficient number of participants (200 female and 200 males) needed.

If you are interested in joining our study, please contact us per mail: info@feragen.at with the reference: "DLA-Studie".

Costs

For all dogs with existing DLA profiles participation is for free. If DLA testing is necessary we offer special study conditions. The costs for DLA haplotyping are normally 124.50 € per dog. In the course of our study we offer you the test with **a discount of 15%.**

You would like to participate at our study with more than one mating pair or as a breeding club or a group of breeders? Or have another question? Then please contact us per mail: info@feragen.at

In this case we can offer you some special conditions which we would like to discuss in a personal conversation.

We hope for a lively participation to get as many information,
for a better understanding!

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