

# Premium SNP DNA-Profile

***new ISAG 2020 recommendation***



## **genetic fingerprint in high definition**

We are pleased to be one of the first labs to adopt and offer the new advanced DNA profiling analysis which we perform in accordance with the brand new ISAG 2020 recommendation.










The new Premium SNP DNA-Profile opens up new horizons which are of particular interest to breed clubs because it has the potential to assess the genetic heterozygosity of the breed, the line as well as individual dogs, which is the aim of many breeders and clubs who want to maintain a healthy gene pool. It would also be possible to check how genetically related or distant the dog and the bitch before breeding. On the long term we are also considering integrating the heterozygosity data with the inherited disease data of the breed.

For many years breeders recognised that while inbreeding leads to increased uniformity and fixation of desirable breed traits and characters in the offspring, it comes with many potential problems including lower fertility, less “vigour”, birth defects, smaller size offspring, smaller litter size, shorter lifespan, reduced genetic vitality, and increase in genetic diseases. This is because inbreeding increases homozygosity and reduces heterozygosity. It is well known that many genetic diseases are caused by the expression of deleterious recessive alleles and so increasing genetic diversity will not only help in reducing the occurrence of genetic disease but will also increase the breed’s genetic fitness and its ability to evolve in the face of changes in the environment or disease.

Furthermore, premium DNA Profile has the potential to make it possible to verify fatherhood without the need for a sample from the mother or motherhood without the need for a sample from the father.

DNA profile is your animal's genetic fingerprint. It is the animal's unequivocal identification which cannot be manipulated or destroyed, and it remains unchanged for the animal's life. We store every DNA profile in our DNA database and so it is always available. LABOKLIN is certified by ISAG (International Society for Animal Genetics) and we perform our DNA Profile analysis in accordance with ISAG's standards and specifications, which enable international comparability of DNA profiles with other laboratories.

The new ISAG recommendation was published in February 2020 and Laboklin is one of the first laboratories to implement the new standards. ISAG 2020 recommends analysing a minimum of 114 SNPs (Single Nucleotide Polymorphism), and, an additional panel if needed in complex situations, however, at Laboklin we analyse 230 SNPs in one analysis. Each SNP describes a specific location on the DNA, which can take one of two possible forms. In addition, the sex of your animal is also checked with another SNP. The combination of all these SNP markers results in a unique DNA profile for each animal.

<b>Premium SNP DNA-Profile (new ISAG 2020 standard)</b>	<b>Classic STR DNA-Profile Profile (old ISAG 2006 standard)</b>
<ul style="list-style-type: none"><li> <b>230</b> SNPs DNA-Profile which is unequivocal identification of your animal</li><li> Extremely accurate parentage verification with accuracy exceeding 99.99%</li><li> Potential to verify fatherhood without the need for a sample from the mother or motherhood without the need for a sample from the father.</li><li> Potential for the assessment of genetic diversity / heterozygosity of individual animals and breeds.</li><li> Potential to assess how diverse the dog and the bitch are before breeding.</li><li> Not compatible with ISAG 2006</li></ul>	<ul style="list-style-type: none"><li> <b>22</b> microsatellite-markers (STRs) each STR marker describes a length pattern on the DNA strand which differs in between individuals</li><li> parentage verification with over 99.99% accuracy</li><li> Not compatible with ISAG 2020</li></ul>

**Sample required:**

- 0.5 – 1 ml whole blood in EDTA blood tube, or
- Buccal swabs

Please note that Premium SNP DNA-Profile may not be ordered on DNA from swabs which is already stored at Laboklin because extraction method is different, and so we will need a new sample.

If you club is interested in switching your DNA profiling from ISAG 2006 to the new Premium SNP DNA-Profile ISAG 2020, or in genetic heterozygosity we will be very pleased to discuss your requirements and the possibility of setting up a new DNA database or heterozygosity project for your breed.

For more information please contact:

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