GENOMIA
genetic laboratory

Result certificate #012345

Detection of d2-allele in D-locus affecting the coat colour in dogs

Customer: Jan Novák, Dlouhá 1, 30000 Plzeň, Czech Republic
Sample:
Sample: 21-12345
Date received: 01.02.2021
Sample type: blood

Information provided by the customer
Name: Lassie DEMO
Breed: Plemeno
Tattoo number: 1392013
Microchip: 123 456 789 012 345
Reg. number: REGQ12345
Date of birth: 1.1.2020
Sex: female
Date of sampling: 01.02.2021
The identity of the animal has been checked.

Result: Based on mutation examination genotype was determined D/d2

Explanation

It has been examined the presence of gene variants c.705G>C of MLPH-gene (melanophilin gene) causing coat colour dilution in dogs. The dilution is caused by d2-allele at D-locus (Dilution). The MLPH-gene is responsible for the density of pigment granules (eumelanine and pheomelanine) in a hair. The presence of the gene variant c.705C, d2-allele, causes the loss of pigment granules in a hair; the original black colour is diluted to blue and brown colour to lilac.

The phenotypic expression of d2-allele is inherited autosomal recessively. The colour dilution occurs only in d2/d2-dogs that inherit d2-allele from each of its parents. The dilution is not expressed in heterozygous dogs D/d2, however these dogs are carriers of this trait. Dogs with D/D result do not carry d2-allele caused dilution.

There is other MLPH-gene variant c.-22A (d1-allele) that is responsible for colour dilution in various dog breeds. The diluted dogs are also compound heterozygous d1/d2, where the d1-allele is inherited from one parent and d2-allele from the other parent.

There will be probably discovered other gene variants responsible for colour dilution. The final colour of a dog is affected by the presence of alleles at other loci (E, B, A, K and other).

Method: SOPAgriseq_canine, ngs, accredited method

Date of issue: 06.02.2021
Date of testing: 01.02.2021 - 06.02.2021
Approved by: Mgr. Martina Šafrová, Laboratory Manager

verified and certified document GENOMIA genetic laboratory