

Customer: Lucie Glaserová, Doubek 109, 25101 Doubek, Czech Republic

Sample:

Sample: 21-27144

Date received: 06.10.2021

Sample type: blood

Information provided by the customer

Name: Bezinka z Modrého království

Breed: Collie Smooth

Microchip: 900 085 001 081 321

Reg. number: CMKU/CK/1647/20

Date of birth: 2.3.2020

Sex: female

Date of sampling: 04.10.2021

The identity of the animal has been checked by MVDr. Michaela Oravská, KVL 5097

Result: Mutation was not detected (N/N)

Explanation

It has been studied the presence and absence of mutation c.295_298delAGAT in ABCB1 gene leading to defect of P-glycoprotein (previous nomenclature: c.227_230delATAG MDR1). P-glycoprotein is a membrane drug transporter and a very important component of the blood brain barrier that prevents entry of many potentially toxic compounds into the central nervous system. The dysfunction of P-glycoprotein in dogs can result in potentially fatal neurotoxic reaction, especially following the administration of ivermectin, acepromazin, butorphanol, doramectin, doxorubicin, loperamid, milbemycin, moxidectin, selamectin, vinblastin and vincristin.

The sensitivity to drugs develops in dogs with mutation in both copies of MDR1 gene (P/P). Some dogs that are heterozygotes (N/P) have shown adverse reaction after administration of some drugs. The specific cause of this variation is not known so far – other gene mutations, general health conditions and dosage.

It is not possible to exclude existence of other mutations of ABCB1 gene in various breeds (in Bordier collies, another two mutations have been found). Compound heterozygotes that carry two distinct mutations of ABCB1 gene may occur, where each mutation was inherited from one of the parents. The compound heterozygotes also have defective P-glycoprotein function.

The defect occurs in Collies, Longhaired Whippets, Australian Shepherds, Miniature Australian Shepherds, McNab Shepherd dogs, Silken windhounds, English sheepdogs, Shelties, German shepherd dogs, Bobtails, Border Collies and herding breed cross.

Method: SOP175-MDR1, ASA-PCR, accredited method

Date of issue: 15.10.2021

Date of testing: 06.10.2021 - 15.10.2021

Approved by: Mgr. Martina Šafrová, Laboratory Manager



Genomia is accredited in compliance with ISO/IEC 17025:2018 under #1549

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Report verification code is: KMBD-Y1WY-A6H1-B2Y1-H58R. You can verify report online at www.genomia.cz

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