



dr. van haeringen laboratorium b.v.

a VHLGenetics company

LABOCOR, S.L.
Alamillo 41
ES-28770 COLMENAR VIEJO (MADRI
SPAIN
Customer number 23465

Analysis Certificate

Animal data

Name: ELSA DEL VALLEDE GARQUEZ
Date of birth: 12.05.2019
Sex: Female
Reg. nr.: 941000024314805
Breed: West Highl. Terrier

Sample data

VHL_ID: H369131
Test ID-nr: 401227 1
Material: Swab

Sampling: Sampling witness statement attached.

H421 - Hiplaxity 2 - Date of test: 19.03.2020

Testresult: N/N

H423 - SCID JTR - Date of test: 19.03.2020

Testresult: NORMAL

H724 - L2-HGA - Date of test: 19.03.2020

Testresult: NORMAL

H804 - Cerebellar Ataxia / NCL-A - Date of test: 19.03.2020

Testresult: NORMAL

H811 - Hyperuricemia (HUU) - Date of test: 19.03.2020

Testresult: NORMAL

H849 - PLL - Date of test: 19.03.2020

Testresult: NORMAL

H919 - Hiplaxity 1 - Date of test: 19.03.2020

Testresult: N/N

VHL exercises the utmost care in performing each of its engagements. No party other than the principal may derive any rights from the results of these engagements, and the principal expressly indemnifies VHL in respect of any third-party claims. VHL policy provides that any complaints must be received within eight days of the completion of an engagement and imposes restrictions on liability. In that respect, VHL refers to its General Conditions, which are applicable to all engagements VHL performs and which were enclosed with the submission form. These General Conditions can also be reviewed at www.vhlgenetics.com. The work VHL performs is based on the material and/or data it receives from its principal. This report may only be copied in its entirety. The organization is ISO:9001 certified for all her work. This test is based on PCR technology.



H485 - Congenital Hypothyroidism (CHG) 2 - Date of test: 19.03.2020

Testresult: NORMAL

H488 - Congenital Hypothyroidism (CHG)3 - Date of test: 19.03.2020

Testresult: NORMAL

H492 - Hyperkeratosis, palmoplantar - Date of test: 19.03.2020

Testresult: NORMAL

H509 - Polycystic kidney disease (PKD1) - Date of test: 19.03.2020

Testresult: NORMAL

H360 - Gallbladder Mucocele - Date of test: 19.03.2020

Testresult: NORMAL

H363 - Hyperkeratosis, epidermolytic - Date of test: 19.03.2020

Testresult: NORMAL

H357 - Cone Rod Dystrophy 1 (crd1) - Date of test: 19.03.2020

Testresult: NORMAL

H358 - Cone Rod Dystrophy 2 (crd2) - Date of test: 19.03.2020

Testresult: NORMAL

H699 - Hereditary Cataract 2 (HC) -HSF4 - Date of test: 19.03.2020

Testresult: NORMAL

H744 - vWD Type III - Date of test: 19.03.2020

Testresult: NORMAL

H303 - Spinocerebellar ataxia - Date of test: 19.03.2020

Testresult: NORMAL

H312 - Craniomandibular Osteopathy (CMO) - Date of test: 19.03.2020

Testresult: NORMAL

VHL exercises the utmost care in performing each of its engagements. No party other than the principal may derive any rights from the results of these engagements, and the principal expressly indemnifies VHL in respect of any third-party claims. VHL policy provides that any complaints must be received within eight days of the completion of an engagement and imposes restrictions on liability. In that respect, VHL refers to its General Conditions, which are applicable to all engagements VHL performs and which were enclosed with the submission form. These General Conditions can also be reviewed at www.vhlgenetics.com. The work VHL performs is based on the material and/or data it receives from its principal. This report may only be copied in its entirety. The organization is ISO:9001 certified for all her work. This test is based on PCR technology.



dr. van haeringen laboratorium b.v.

a VHLGenetics company

H324 - FBN2 - Date of test: 19.03.2020

Testresult: N/N

H677 - Von-Willebrands Disease Type 1 - Date of test: 19.03.2020

Testresult: NORMAL

D. Mioch, MSc Veterinary Medicine
CEO

VHL exercises the utmost care in performing each of its engagements. No party other than the principal may derive any rights from the results of these engagements, and the principal expressly indemnifies VHL in respect of any third-party claims. VHL policy provides that any complaints must be received within eight days of the completion of an engagement and imposes restrictions on liability. In that respect, VHL refers to its General Conditions, which are applicable to all engagements VHL performs and which were enclosed with the submission form. These General Conditions can also be reviewed at www.vhlgenetics.com. The work VHL performs is based on the material and/or data it receives from its principal. This report may only be copied in its entirety. The organization is ISO:9001 certified for all her work. This test is based on PCR technology.

(Certificate nr: H63090/Date of issue: 23.03.2020)

page 3 of 7



H421 - Hiplaxity 2

The disease is of multifactorial origin, which means that the symptoms are a combination of genetic factors as well as the environment.

This marker is part of a panel of genetic factors influencing hip laxity. For each genetic factor of a multifactorial disease, the desirable genetic variant is indicated as 'N/N'. Animals carrying one copy of the undesirable genetic variant are indicated as 'N/HL', whereas animals carrying two copies of the undesirable genetic variant are indicated as 'HL/HL'.

H423 - SCID JTR

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H724 - L2-HGA

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H804 - Cerebellar Ataxia / NCL-A

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H811 - Hyperuricemia (HUU)

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H849 - PLL

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill

VHL exercises the utmost care in performing each of its engagements. No party other than the principal may derive any rights from the results of these engagements, and the principal expressly indemnifies VHL in respect of any third-party claims. VHL policy provides that any complaints must be received within eight days of the completion of an engagement and imposes restrictions on liability. In that respect, VHL refers to its General Conditions, which are applicable to all engagements VHL performs and which were enclosed with the submission form. These General Conditions can also be reviewed at www.vhlgenetics.com. The work VHL performs is based on the material and/or data it receives from its principal. This report may only be copied in its entirety. The organization is ISO:9001 certified for all her work. This test is based on PCR technology.



dr. van haeringen laboratorium b.v.

a VHLGenetics company

due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H919 - Hiplaxity 1

The disease is of multifactorial origin, which means that the symptoms are a combination of genetic factors as well as the environment.

This marker is part of a panel of genetic factors influencing hip laxity. For each genetic factor of a multifactorial disease, the desirable genetic variant is indicated as 'N/N'. Animals carrying one copy of the undesirable genetic variant are indicated as 'N/HL', whereas animals carrying two copies of the undesirable genetic variant are indicated as 'HL/HL'.

H485 - Congenital Hypothyroidism (CHG) 2

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H488 - Congenital Hypothyroidism (CHG)3

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H492 - Hyperkeratosis, palmoplantar

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H509 - Polycystic kidney disease (PKD1)

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will also become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring

VHL exercises the utmost care in performing each of its engagements. No party other than the principal may derive any rights from the results of these engagements, and the principal expressly indemnifies VHL in respect of any third-party claims. VHL policy provides that any complaints must be received within eight days of the completion of an engagement and imposes restrictions on liability. In that respect, VHL refers to its General Conditions, which are applicable to all engagements VHL performs and which were enclosed with the submission form. These General Conditions can also be reviewed at www.vhlgenetics.com. The work VHL performs is based on the material and/or data it receives from its principal. This report may only be copied in its entirety. The organization is ISO:9001 certified for all her work. This test is based on PCR technology.



dr. van haeringen laboratorium b.v.

a VHLGenetics company

will receive the mutant allele from this animal. Affected animals will become ill.

H360 - Gallbladder Mucocele

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will also become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H363 - Hyperkeratosis, epidermolytic

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H357 - Cone Rod Dystrophy 1 (crd1)

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H358 - Cone Rod Dystrophy 2 (crd2)

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H699 - Hereditary Cataract 2 (HC) -HSF4

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H744 - vWD Type III

VHL exercises the utmost care in performing each of its engagements. No party other than the principal may derive any rights from the results of these engagements, and the principal expressly indemnifies VHL in respect of any third-party claims. VHL policy provides that any complaints must be received within eight days of the completion of an engagement and imposes restrictions on liability. In that respect, VHL refers to its General Conditions, which are applicable to all engagements VHL performs and which were enclosed with the submission form. These General Conditions can also be reviewed at www.vhlgenetics.com. The work VHL performs is based on the material and/or data it receives from its principal. This report may only be copied in its entirety. The organization is ISO:9001 certified for all her work. This test is based on PCR technology.



dr. van haeringen laboratorium b.v.

a VHLGenetics company

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H303 - Spinocerebellar ataxia

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will not become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H312 - Craniomandibular Osteopathy (CMO)

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will also become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

H324 - FBN2

The disease is of multifactorial origin, which means that the symptoms are a combination of genetic factors as well as the environment.

This marker is part of a panel of genetic factors influencing hip laxity. For each genetic factor of a multifactorial disease, the desirable genetic variant is indicated as 'N/N'. Animals carrying one copy of the undesirable genetic variant are indicated as 'N/HL', whereas animals carrying two copies of the undesirable genetic variant are indicated as 'HL/HL'.

H677 - Von-Willebrands Disease Type 1

Explanation about the result:

NORMAL: The animal is free and has two healthy alleles. When used in breeding, this animal will not become ill due to the disease. It cannot spread the disease in the population.

CARRIER: The animal is carrier and has one healthy and one mutant (disease) allele. When used in breeding, 50 percent of the offspring will receive the disease allele. Carriers will also become ill.

AFFECTED: The animal is affected and has two mutant (disease) alleles. When used in breeding, all offspring will receive the mutant allele from this animal. Affected animals will become ill.

VHL exercises the utmost care in performing each of its engagements. No party other than the principal may derive any rights from the results of these engagements, and the principal expressly indemnifies VHL in respect of any third-party claims. VHL policy provides that any complaints must be received within eight days of the completion of an engagement and imposes restrictions on liability. In that respect, VHL refers to its General Conditions, which are applicable to all engagements VHL performs and which were enclosed with the submission form. These General Conditions can also be reviewed at www.vhlgenetics.com. The work VHL performs is based on the material and/or data it receives from its principal. This report may only be copied in its entirety. The organization is ISO:9001 certified for all her work. This test is based on PCR technology.