



Orivet

Genetic Comprehensive Report

Animal Name: Manu

Owner:

Tanya Omlo

Membership Number : 101771

Member Body/Breed Club: New Zealand Kennel Club (NZKC)

Approved Collection Method: Yes



orivet.com

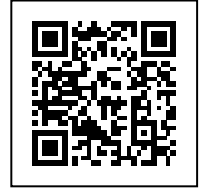
Accredited and Compliant with



Members of



Harmonization of
Genetic Testing
for Dogs



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Owner's details

Name: Tanya Omlo

Animal's Details

Registered Name : Pandorras Sounds-of-Manu

Pet Name : Manu

Registration Number : 08779-2021

Breed : White Swiss Shepherd

Microchip Number : 953010005098163

Sex : Intact Male

Date of Birth : 6th Jul 2021

Colour : White

Sample Collection Details

Case Number : 23M020339

Collected By : A Mansell

Approved Collection : Yes

Sample Type : SWAB

Test Details

Test Requested : White Swiss Shepherd - Full Breed Profile

Pet Name : Manu

Date of Test : 27th Jan 2023

Authorisation

Sample with Lab ID Number 23M020339 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported:



.....
George Sofronidis BSc (Hons)



.....
Dr Noam Pik BVSc, MAVS





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Animal's Details

| | |
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| Registered Name : | Pandorras Sounds-of-Manu |
| Pet Name : | Manu |
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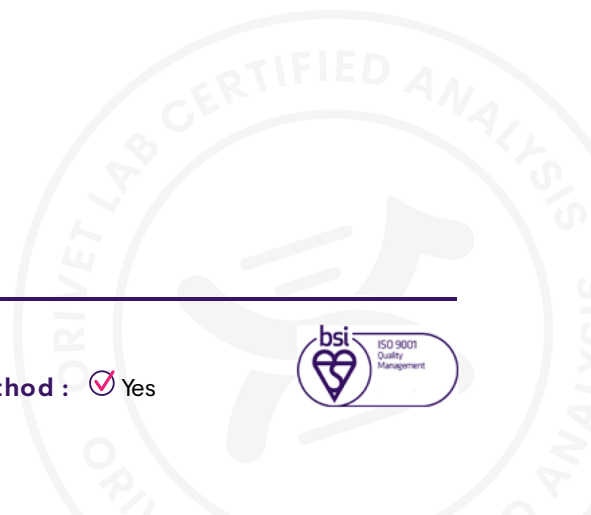
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Approved Collection Method : Yes



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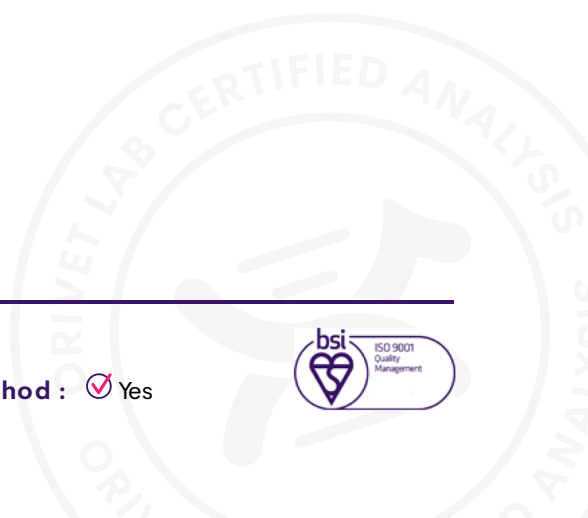
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Microchip Number 953010005098163

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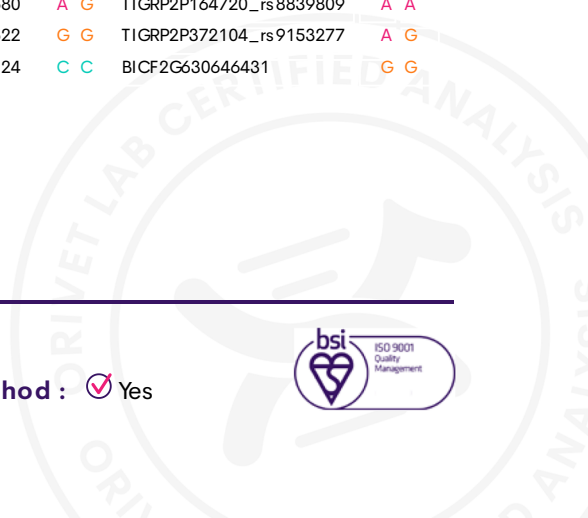
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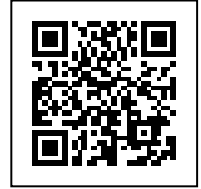
Owner's Name : Tanya Omlo

Pet Name : Manu

Microchip Number 953010005098163

Approved Collection Method : Yes





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this Report online

Sample with Lab ID Number 23M020339 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : CANINE LEUKOCYTE ADHESION DEFICIENCY TYPE III (GERMAN SHEPHERD TYPE)

Result : **NEGATIVE / CLEAR [NO VARIANT DETECTED]**¹

Gene : FERMT3

Variant Detected : 12bp insertion

We have scanned the DNA and the genotype of this animal is NORMAL - no presence of the disease associated variant (mutation) has been detected. This result may also be referred to as NORMAL, "-/-" or "wild type (WT)" or "homozygous negative". The animal is clear of the disease and will not pass on the disease-causing variant.

Test Reported : DEGENERATIVE MYELOPATHY

Result : **NEGATIVE / CLEAR [NO VARIANT DETECTED]**¹

Gene : Superoxide dismutase 1 (SOD1) on chromosome 31

Variant Detected : Base Substitutionc.118G>Ap.Glu40Lys

We have scanned the DNA and the genotype of this animal is NORMAL - no presence of the disease associated variant (mutation) has been detected. This result may also be referred to as NORMAL, "-/-" or "wild type (WT)" or "homozygous negative". The animal is clear of the disease and will not pass on the disease-causing variant.

Test Reported : HAEMOPHILIA A / FACTOR VIII (GERMAN SHEPHERD TYPE)

Result : **NEGATIVE / CLEAR [NO VARIANT DETECTED]**¹

Gene : F8 on Chromosome X

Variant Detected : Base Substitution c.98G>A

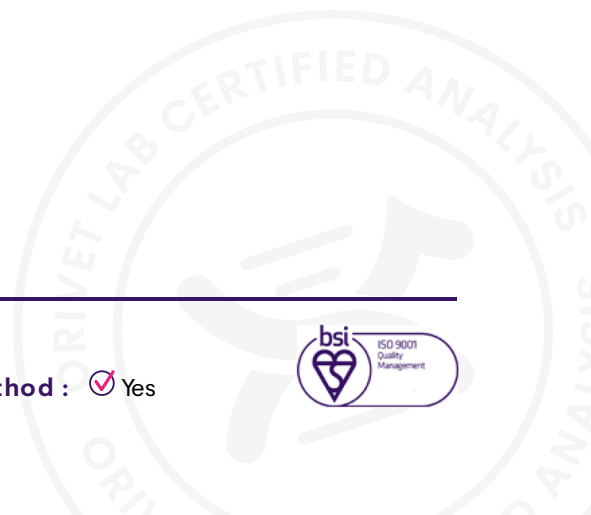
We have scanned the DNA and the genotype of this animal is NORMAL - no presence of the disease associated variant (mutation) has been detected. This result may also be referred to as NORMAL, "-/-" or "wild type (WT)" or "homozygous negative". The animal is clear of the disease and will not pass on the disease-causing variant.

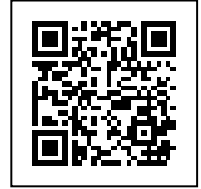
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Sample with Lab ID Number 23M020339 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : HYPERURICOSURIA

Result : **NEGATIVE / CLEAR [NO VARIANT DETECTED]**¹

Gene : Solute carrier family 2 member 9 (SLC2A9) on chromosome 3

Variant Detected : Base Substitutionc.563G>Tp.Cys188Phe

We have scanned the DNA and the genotype of this animal is NORMAL - no presence of the disease associated variant (mutation) has been detected. This result may also be referred to as NORMAL, "-/-" or "wild type (WT)" or "homozygous negative". The animal is clear of the disease and will not pass on the disease-causing variant.

Test Reported : ICHTHYOSIS (GERMAN SHEPHERD TYPE)

Result : **NEGATIVE / CLEAR [NO VARIANT DETECTED]**¹

Gene : ASPRV1

Variant Detected : c.1052T>C

We have scanned the DNA and the genotype of this animal is NORMAL - no presence of the disease associated variant (mutation) has been detected. This result may also be referred to as NORMAL, "-/-" or "wild type (WT)" or "homozygous negative". The animal is clear of the disease and will not pass on the disease-causing variant.

Test Reported : IVERMECTIN SENSITIVITY MDR1 (MULTI DRUG RESISTANCE)

Result : **NEGATIVE / CLEAR [NO VARIANT DETECTED]**¹

Gene : MDR1 on Chromosome 14

Variant Detected : Deletion 4bp AGAT

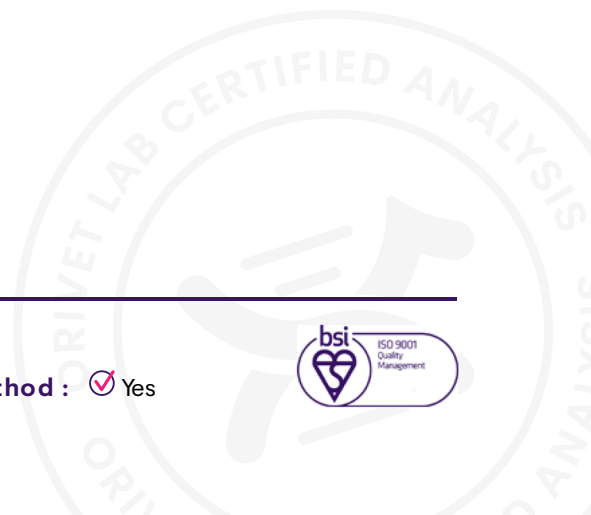
We have scanned the DNA and the genotype of this animal is NORMAL - no presence of the disease associated variant (mutation) has been detected. This result may also be referred to as NORMAL, "-/-" or "wild type (WT)" or "homozygous negative". The animal is clear of the disease and will not pass on the disease-causing variant.

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Pet Name : Manu

Microchip Number 953010005098163

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Test Reported : RENAL CYSTADENOCARCINOMA AND NODULAR DERMATOFIBROSIS (GERMAN SHEPHERD TYPE)

Result : **NEGATIVE / CLEAR [NO VARIANT DETECTED]**¹

Gene : FLCN on Chromosome 5

Variant Detected : Base Substitution of A>c.764A>G

We have scanned the DNA and the genotype of this animal is NORMAL - no presence of the disease associated variant (mutation) has been detected. This result may also be referred to as NORMAL, "-/-" or "wild type (WT)" or "homozygous negative". The animal is clear of the disease and will not pass on the disease-causing variant.

Test Reported : SCOTT SYNDROME (GERMAN SHEPHERD TYPE)

Result : **NEGATIVE / CLEAR [NO VARIANT DETECTED]**¹

Gene : ANO6

Variant Detected : g.8912219 G>A

We have scanned the DNA and the genotype of this animal is NORMAL - no presence of the disease associated variant (mutation) has been detected. This result may also be referred to as NORMAL, "-/-" or "wild type (WT)" or "homozygous negative". The animal is clear of the disease and will not pass on the disease-causing variant.

Test Reported : VON WILLEBRAND'S DISEASE TYPE I

Result : **NEGATIVE / CLEAR [NO VARIANT DETECTED]**¹

Gene : VWF

Variant Detected : c.7437G>A

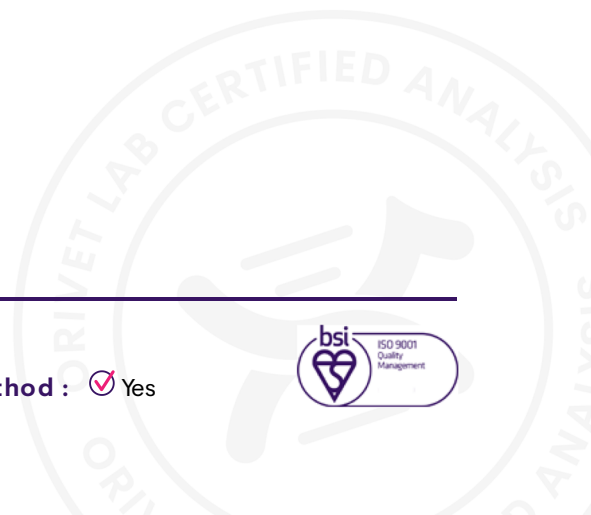
We have scanned the DNA and the genotype of this animal is NORMAL - no presence of the disease associated variant (mutation) has been detected. This result may also be referred to as NORMAL, "-/-" or "wild type (WT)" or "homozygous negative". The animal is clear of the disease and will not pass on the disease-causing variant.

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Test Reported : E LOCUS - (CREAM/RED/YELLOW)

Result : e/e - HOMOZYGOUS FOR NON-EXTENSION [WHITE/YELLOW/APRICOT/WHEATEN]¹

Gene : MC1R

Variant Detected : Em (point mutation) > E (wild type) > e (point mutation) chr5:63694334-63694334: C>T

2 copies of red/yellow are present referred to as "non-extension". Dog's coat is entirely phaeomelanin based ie. red/yellow/cream/apricot/white/wheaten. Please note in some breeds an "ee" phenotype can often Colours can be cream to white rather than yellow to red. Shades can vary between littermates.

Test Reported : BROWN (345DELPRO) DELETION

Result : B^d/B^d - DOES NOT CARRY BROWN/RED/LIVER or CHOCOLATE [DELETION]¹

Gene : TYRP1

Variant Detected : Base Substitution (Point Mutation)

Does not carry the brown deletion codon. Please refer to the other brown variants to clarify potential colour for offspring.

Test Reported : BROWN (GLNT331STOP) STOP CODON

Result : B^s/B^s - DOES NOT CARRY BROWN/RED/LIVER or CHOCOLATE [STOP CODON]¹

Gene : TYRP1

Variant Detected : Point Mutation

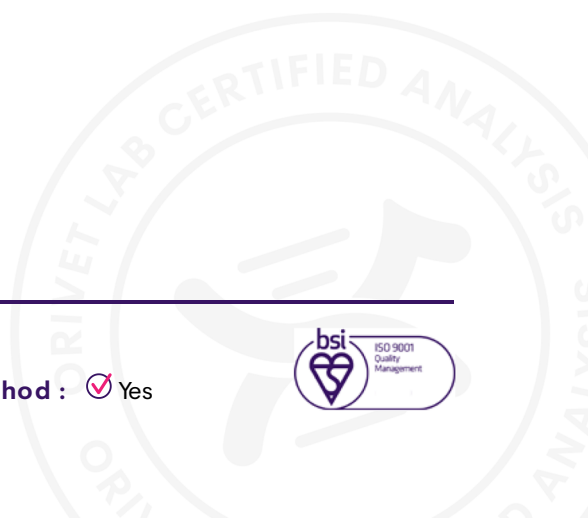
Does not carry the brown stop codon. Please refer to the other brown variants to clarify potential colour for offspring.

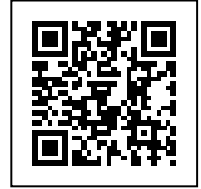
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Test Reported : BROWN (SER41CYS) INSERTION CODON

Result : B^c/B^c - DOES NOT CARRY BROWN/RED/LIVER or CHOCOLATE [INSERTION]¹

Gene : TYRP1

Variant Detected : Base Substitution (Point Mutation)

Does not carry the brown insertion codon. Please refer to the other brown variants to clarify potential colour for offspring.

Test Reported : LIVER [TYRP1] (LANCASHIRE HEELER TYPE)

Result : B^e/B^e - DOES NOT CARRY BROWN/LIVER [TYRP1]¹

Gene :

Variant Detected :

Test Reported : D (DILUTE) LOCUS

Result : D/D - NO COPY OF MLPH-D ALLELE (DILUTE) - PIGMENT IS NORMAL¹

Gene : MLPH

Variant Detected : Base Substitution

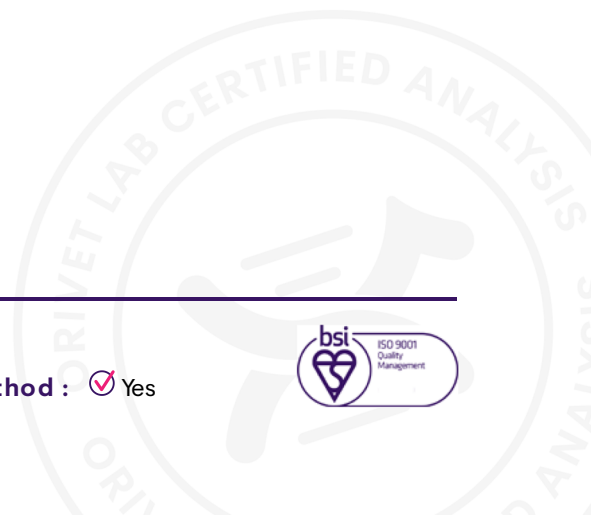
Full colour, no dilute gene present. The D allele modifies the Melanophillin (MLPH) gene. This animal cannot produce "dilute" offspring. Please Note: There are other dilute variants d2 (Sloughi, Chow Chow & Thai Ridgeback) and rare d3 (Italian Greyhound & Chihuahua) so this test/result may not identify dilute in these breeds.

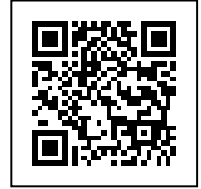
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Test Reported : K LOCUS (DOMINANT BLACK)

Result : k^y/k^y - **RECESSIVE NON- BLACK [COLOUR PATTERN DETERMINED BY A LOCUS]**¹

Gene : CBD103

Variant Detected : Deletion of GGG

Dog does not have the dominant black mutation. Dog's coat colour will be determined by the agouti gene – may be brindled or not brindled. Any phaeomelanin (red/tan) will be brindled. Can be sable/fawn, tricolour, tan points, black or brown. Will (may) have black pigment and black markings (unless the extension locus interferes).

Test Reported : A LOCUS (FAWN/SABLE;TRI/TAN POINTS)

Result : a^t/a^t - **TAN POINTS/BLACK & TAN or TRICOLOUR MAY BE BRINDLED [SEE K LOCUS]**¹

Gene : ASIP

Variant Detected : Base Substitution 246 G>T(A82S); G>A (R83H): C>T (p.R96C)

Homozygous for black and tan/tricolour (no hidden colours) allele. Tri factored/white factored in dogs that have white points. No Bi Factoring (Black White & Tan). Animals are primarily black and have areas of pheomelanin (tan) which tends to be seen on the leg and stomach areas, the side of the head and spots above the eyes. Please note the colour and distribution of pheomelanin "tan" will be dependent on the breed and other colour genes. Please note that any genes on the "A" series will only be expressed if the K locus is kk, kibr or kbrkbr.

Test Reported : LONG HAIR GENE (CANINE C95F)

Result : **POSITIVE - SHOWING THE PHENOTYPE**¹

Gene : FGF5

Variant Detected : p.Cys95Phe c284G>T (Point Mutation)

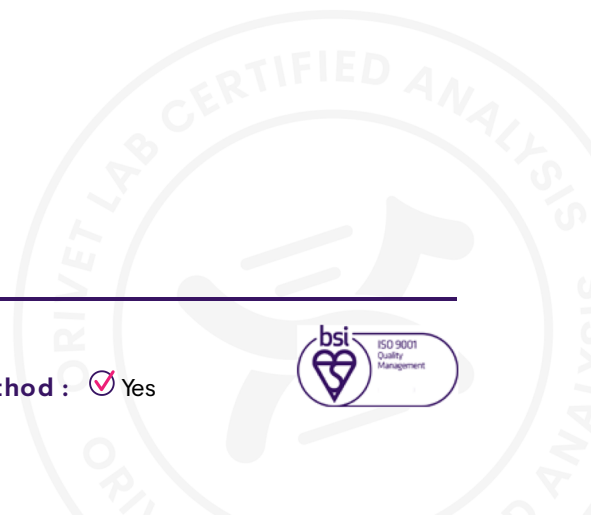
The phenotype/trait tested is present. Please Note this can vary from breed to breed and within breed.

Owner's Name : Tanya Omlo

Pet Name : Manu

Microchip Number 953010005098163

Approved Collection Method : Yes





Scan to authenticate
this Report online

Sample with Lab ID Number 23M020339 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : SHEDDING (MC5R)

Result :

shd/shd [HIGH SHEDDING] - TWO COPIES OF THE shd (MC5R) VARIANT DETECTED REFER TO R151W (IC) FOR LEVEL OF SHEDDING

1

Gene : MC5R

Variant Detected :

The dog will (may) exhibit a low level of shedding. Please Note: this level is also dependent on the furnishing allele. If the dog has no IC (R151W) phenotype will be low shedding.

Test Reported : COAT COMPOSITION CFA28 GENE (DOUBLE/SINGLE COAT)

Result : **UDC/udc - ONE COPY OF THE DOUBLE COAT (DENSE UNDERCOAT) PHENOTYPE DETECTED¹**

Gene : CFA28

Variant Detected :

Moderate to Low Shedding please refer to IC result to clarify level of shedding

Test Reported : CURLY COAT/HAIR CURL (KRT71 R151W)

Result :

NEGATIVE FOR THE KRT71 R151W (CU/CU) VARIANT - NOT SHOWING THE CURLY COAT PHENOTYPE

1

Gene : KRT71 (R151W)

Variant Detected : chr27:2539211-2539211: c.451C>T

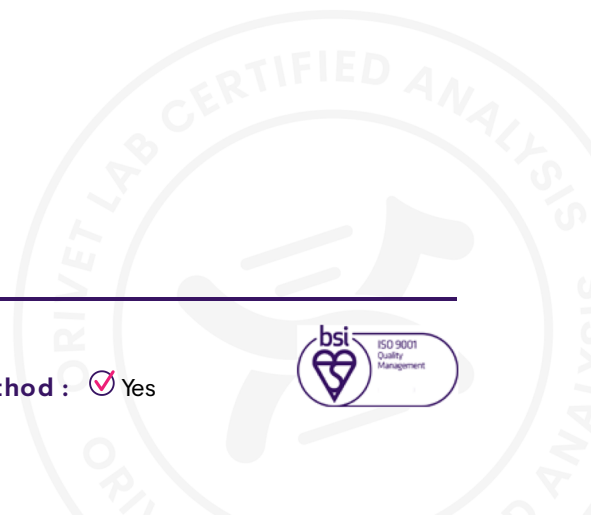
Please note there are other additional curly coat genes/variant that will impact the curly coat phenotype.

Owner's Name : Tanya Omlo

Pet Name : Manu

Microchip Number 953010005098163

Approved Collection Method : Yes





Genetic Comprehensive Report



Scan to authenticate
this Report online

Sample with Lab ID Number 23M020339 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : BODY SIZE IGSF1 "BULKY GENE"

Result :

NO COPY INSULIN LIKE GROWTH FACTOR (IGF1R) - ASSOCIATED WITH A REDUCTION of BODY (BULKY) SIZE

1

Gene : IGSF1

Variant Detected : chrX.g.102369488-102369489insAAC, p.Asp376_Glu377insAsn, Chromosome X

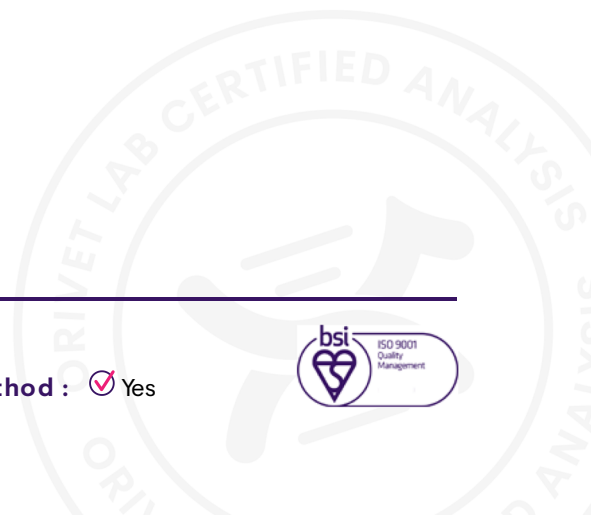
The IGF1R allele is an ancestral allele found in larger-sized breeds.

Owner's Name : Tanya Omlo

Pet Name : Manu

Microchip Number 953010005098163

Approved Collection Method : Yes



Glossary of Genetic Terms (Results)



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NEGATIVE / CLEAR [NO VARIANT DETECTED]

No presence of the variant (mutation) has been detected. The animal is clear of the disease and will not pass on any disease-causing mutation.

CARRIER [ONE COPY OF THE VARIANT DETECTED]

This is also referred to as HETEROZYGOUS. One copy of the normal gene and copy of the affected (mutant) gene has been detected. The animal will not exhibit disease symptoms or develop the disease. Consideration needs to be taken if breeding this animal - if breeding with another carrier or affected or unknown then it may produce an affected offspring.

POSITIVE / AT RISK [TWO COPIES OF THE VARIANT DETECTED]

Two copies of the disease gene variant (mutation) have been detected also referred to as HOMOZYGOUS for the variant. The animal may show symptoms (affected) associated with the disease. Appropriate treatment should be pursued by consulting a Veterinarian.

POSITIVE HETEROZYGOUS [ONE COPY OF THE DOMINANT VARIANT DETECTED]

Also referred to as POSITIVE ONE COPY or POSITIVE HETEROZYGOUS. This result is associated with a disease that has a dominant mode of inheritance. One copy of the normal gene (wild type) and affected (mutant) gene is present. Appropriate treatment should be pursued by consulting a Veterinarian. This result can still be used to produce a clear offspring.

NORMAL BY PARENTAGE HISTORY

The sample submitted has had its parentage verified by DNA. By interrogating the DNA profiles of the Dam, Sire and Offspring this information together with the history submitted for the parents excludes this animal from having this disease. The controls run confirm that the dog is NORMAL for the disease requested.

NORMAL BY PEDIGREE

The sample submitted has had its parentage verified by Pedigree. The pedigree has been provided and details (genetic testing reports) of the parents have been included. Parentage could not be determined via DNA profile as no sample was submitted.

NO RESULTS AVAILABLE

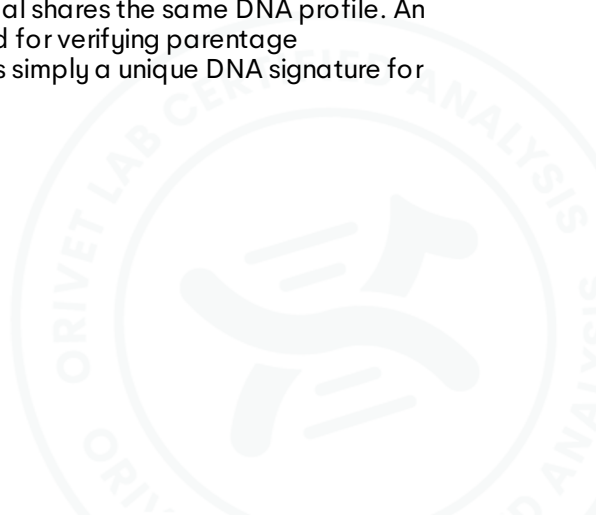
Insufficient information has been provided to provide a result for this test. Sire and Dam information and/or sample may be required. This result is mostly associated with tests that have a patent/license and therefore certain restrictions apply. Please contact the laboratory to discuss.

INDETERMINABLE

The sample submitted has failed to give a conclusive result. This result is mainly due to the sample failing to "cluster" or result in the current grouping. A recollection is required at no charge.

DNA PROFILE

Also known as a DNA fingerprint. This is unique for the animal. No animal shares the same DNA profile. An individual's DNA profile is inherited from both parents and can be used for verifying parentage (pedigrees). This profile contains no disease or trait information and is simply a unique DNA signature for that animal.



Glossary of Genetic Terms (Results)



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PARENTAGE VERIFICATION/ QUALIFIES/CONFIRMED OR DOES NOT QUALIFY/EXCLUDED

Parentage is determined by examining the markers on the DNA profile. A result is generated and stated for all DNA parentage requests. Parentage confirmation reports can only be generated if a DNA profile has been carried out for Dam, Offspring and possible Sire/s.

PENDING

PENDING

TRAIT (PHENOTYPE)

A feature that an animal is born with (a genetically determined characteristic). Traits are a visual phenotype that range from colour to hair length, and also includes certain features such as tail length. If an individual is **AFFECTED** for a trait then it will show that characteristic eg. **AFFECTED** for the B (Brown) Locus or bb will be brown/chocolate.

POSITIVE – SHOWING THE PHENOTYPE

The animal is showing the trait or phenotype tested.

CLARIFICATION OF GENETIC TESTING

The goal of genetic testing is to provide breeders with relevant information to improve breeding practices in the interest of animal health. However, genetic inheritance is not a simple process, and may be complicated by several factors. Below is some information to help clarify these factors.

The goal of genetic testing is to provide breeders with relevant information to improve breeding practices in the interest of animal health. However, genetic inheritance is not a simple process, and may be complicated by several factors. Below is some information to help clarify these factors.

- 1) Some diseases may demonstrate signs of what Geneticists call "genetic heterogeneity". This is a term to describe an apparently single condition that may be caused by more than one mutation and/or gene
- 2) It is possible that there exists more than one disease that presents in a similar fashion and segregates in a single breed. These conditions -although phenotypically similar - may be caused by separate mutations and/or genes.
- 3) It is possible that the disease affecting your breed may be what Geneticists call an "oligogenic disease". This is a term to describe the existence of additional genes that may modify the action of a dominant gene associated with a disease. These modifier genes may for example give rise to a variable age of onset for a particular condition, or affect the penetrance of a particular mutation such that some animals may never develop the condition.

The range of hereditary diseases continues to increase and we see some that are relatively benign and others that can cause severe and/or fatal disease. Diagnosis of any disease should be based on pedigree history, clinical signs, history (incidence) of the disease and the specific genetic test for the disease. Penetrance of a disease will always vary not only from breed to breed but within a breed, and will vary with different diseases. Factors that influence penetrance are genetics, nutrition and environment. Although genetic testing should be a priority for breeders, we strongly recommend that temperament and phenotype also be considered when breeding.

Orivet Genetic Pet Care aims to frequently update breeders with the latest research from the scientific literature. If breeders have any questions regarding a particular condition, please contact us on (03) 9534 1544 or admin@orivet.com and we will be happy to work with you to answer any relevant questions.

