



Orivet

Genetic Comprehensive Report

Animal Name: Cosmo

Owner:

Dawn Nacey

Membership Number : Not assigned

Member Body/Breed Club: Not assigned

Approved Collection Method: No



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Accredited and Compliant with



Members of



Harmonization of
Genetic Testing
for Dogs



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Owner's details

Name: Dawn Nacey

Animal's Details

Registered Name : Cosmopolitan Bella Mare

Pet Name : Cosmo

Registration Number : ss178182/01

Breed : Labrador Retriever

Microchip Number : 616093400103251

Sex : Intact Male

Date of Birth : 26th Feb 2019

Colour : black

Sample Collection Details

Case Number : 23A163839

Collected By :

Approved Collection : No

Sample Type : SWAB

Test Details

Test Requested : Labrador Retriever - Full Breed Profile

Pet Name : Cosmo

Date of Test : 14th Dec 2023

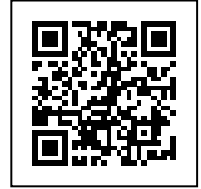
Authorisation

Sample with Lab ID Number 23A163839 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

Registered Name :	Cosmopolitan Bella Mare
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P1_2 A G P28_3 T T P10_1 G G P10_3 A C P29_1 C C P11_1 G G P11_2 C C P29_2 G G
 P3_1 A G P3_2 A C P11_3 C C P12_1 G G P24_2 A A P12_3 G G P30_3 A T P13_1 C C
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 P23_3 A G P24_1 A G P3_3 G G P25_1 G G P5_2 G G P20_3 A A P9_3 A A

Owner's Name : Dawn Nacey

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Microchip Number 616093400103251

Approved Collection Method : No



Genetic Comprehensive Report

Animal's Details

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Owner's Name : Dawn Nacey

Pet Name : Cosmo

Microchip Number 616093400103251

Approved Collection Method : No



Genetic Comprehensive Report

Animal's Details

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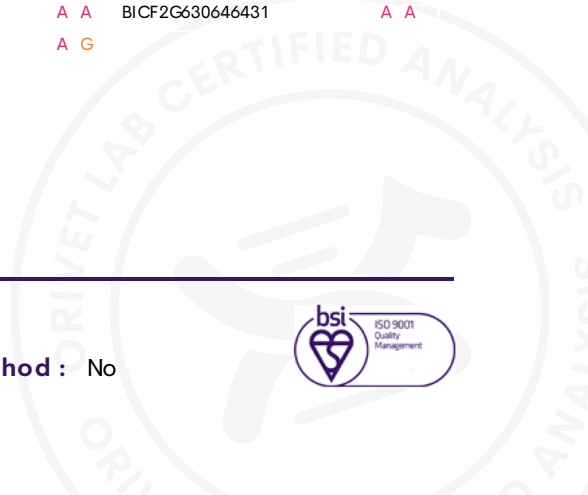
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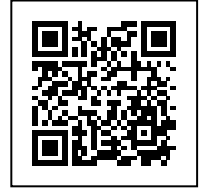
Owner's Name : Dawn Nacey

Pet Name : Cosmo

Microchip Number 616093400103251

Approved Collection Method : No





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Genetic Comprehensive Report

Sample with Lab ID Number 23A163839 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : ACHROMATOPSIA (LABRADOR TYPE)

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

Gene : CNGA3

Variant Detected : c.1931_1933delTGG

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 : CENTRONUCLEAR MYOPATHY (LABRADOR RETRIEVER TYPE)

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

Gene : 3-hydroxyacyl-CoA dehydratase 1 (HACD1) also known as PTPLA on chromosome 2

Variant Detected : 236 bp SINE repeat insertion in exon 2 of HACD1

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 : CONGENITAL MACROTHROMBOCYTOPENIA

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

Gene : Tubulin beta 1 class VI (TUBB1) on Chromosome 24

Variant Detected : Base Substitutionc.745G>Ap.Asp249Asn

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.

Owner's Name : Dawn Nacey

Pet Name : Cosmo

Microchip Number 616093400103251

Approved Collection Method : No





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Genetic Comprehensive Report

Sample with Lab ID Number 23A163839 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : CONGENITAL MYASTHENIC SYNDROME (LABRADOR RETRIEVER TYPE)

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

Gene : 2-hydroxyacyl-CoA lyase 1 (COLQ) on chromosome 23

Variant Detected : Base Substitutionc.1010T>Cp.Ile337Thr

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 : CYSTINURIA (SLC3A1) LABRADOR RETRIEVER TYPE

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

Gene : Solute carrier family 3 member 1 (SLC3A1) on chromosome 10

Variant Detected : Nucleotide Deletionc.350delGp.Gly117Alafs*41

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.

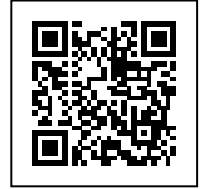
Owner's Name : Dawn Nacey

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Approved Collection Method : No





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Test Reported : EHLERS-DANLOS SYNDROME (LABRADOR TYPE)

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

Gene : COL5A1, chr9

Variant Detected : c.3038delGp.Gly1013ValfsTer260

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 : ELLIPTOCYTOSIS B-SPECTRIN (LABRADOR RETRIEVER/POODLE TYPE)

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

Gene : Spectrin beta erythrocytic (SPTB) Chromosome 8

Variant Detected : Base Substitutionc.6384C>TThr2110Met

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 : EXERCISE INDUCED COLLAPSE (RETRIEVER TYPE)

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

Gene : DNM1

Variant Detected : Base Substitution c.767 G>T

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.

Owner's Name : Dawn Nacey

Pet Name : Cosmo

Microchip Number 616093400103251

Approved Collection Method : No





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Sample with Lab ID Number 23A163839 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : HEREDITARY NASAL PARAKERATOSIS/DRY NOSE (LABRADOR RETRIEVER TYPE)

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

Gene : Suppressor of variegation 3-9 homolog 2 (SUV39H2) on chromosome 2

Variant Detected : Base Substitutionc.972T>Gp.Asn324Lys

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 : 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 : MACULAR CORNEAL DYSTROPHY (LABRADOR TYPE)

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

Gene : LOC4

Variant Detected : c.814C>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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Pet Name : Cosmo

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Test Reported : MALIGNANT HYPERTHERMIA

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

Gene : Ryanodine receptor 1 (RYR1) on Chromosome 1

Variant Detected : Base Substitutionc.1640T>Cp.Val547Ala

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 : MYOTUBULAR MYOPATHY X-LINKED (LABRADOR RETRIEVER TYPE)

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

Gene : Myotubularin 1 (MTM1) on Chromosome X

Variant Detected : Base Substitutionc.465C>Ap.Asn155Lys

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 : NARCOLEPSY (LABRADOR)

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

Gene : Hypocretin receptor 2 (HCRTR2) on Chromosome 12

Variant Detected : Base Substitutionc.1105+5G>Asplice site mutation

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.

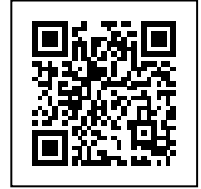
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Approved Collection Method : No





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Test Reported : PROGRESSIVE ROD CONE DEGENERATION (PRCD) - PRA

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

Gene : Photoreceptor disc component (PRCD) on Chromosome 9

Variant Detected : Base Substitutionc.5 G>Ap.Cys2Tyr

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 : PYRUVATE KINASE DEFICIENCY (LABRADOR TYPE)

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

Gene : PKLR

Variant Detected : c.799C>T

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 : SKELETAL DYSPLASIA 2 (MILD DISPROPORTIONATE DWARFISM)

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

Gene : Collagen alpha-2(XI) chain gene (COL11A2) on chromosome 12

Variant Detected : Base Substitutionc.143G>Cp.Arg48Pro

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 : STARGARDT DISEASE (RETINAL DEGENERATION)

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

Gene : ABCA4

Variant Detected : c.4176insC

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 : E LOCUS - (CREAM/RED/YELLOW)

Result : E/e - BLACK CARRIES EXTENSION [YELLOW/WHITE/APRICOT/RUBY/RED]¹

Gene : MC1R

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

One copy of black (E) and one copy of red/yellow/cream/apricot/white. These "e" colours are dependent on breed. The "e" allele is non-functional. May produce yellow/white/apricot/ruby or red offspring if mated to another carrier of "e".

Test Reported : I LOCUS COLOUR INTENSITY

Result : I/I - NO COPY OF MFSD12 INTENSITY ALLELE (NOT LIKELY TO SHOW EXTREME DILUTION)¹

Gene : MFSD12

Variant Detected : c.151C>T (p.Arq51Cys)

This variant is associated with the dilution of phaeomelanin which is involved in the cream/white/apricot color in dogs. Degree of intensity (dilution) will vary within and between breeds.

Owner's Name : Dawn Nacey

Pet Name : Cosmo

Microchip Number 616093400103251

Approved Collection Method : No



Genetic Comprehensive Report



Scan to authenticate
this Report online

Sample with Lab ID Number 23A163839 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : BROWN DELETION = BD

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 STOP CODON = BS

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.

Test Reported : BROWN INSERTION = BC

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.

Owner's Name : Dawn Nacey

Pet Name : Cosmo

Microchip Number 616093400103251

Approved Collection Method : No





Scan to authenticate
this Report online

Genetic Comprehensive Report

Sample with Lab ID Number 23A163839 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : BROWN TYRP1 [LANCASHIRE HEELER TYPE] = BL

Result : B^L/B^L - 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 Melanophilin (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.

Test Reported : DILUTE D2 VARIANT (CHOW CHOW TYPE)

Result : D²/D² - NO COPY OF d2 ALLELE (DILUTE) - PIGMENT IS NORMAL¹

Gene : MLPH

Variant Detected : c.705G>C

This d2 variant has been shown to be associated with the blue/dilute seen in the Chow Chow, Sloughi, Thai Ridgeback and any mixes of these breeds.

Owner's Name : Dawn Nacey

Pet Name : Cosmo

Microchip Number 616093400103251

Approved Collection Method : No





Scan to authenticate
this Report online

Sample with Lab ID Number 23A163839 was received at Orivet Genetics, DNA was extracted and analysed with the following result reported

Test Reported : K LOCUS (DOMINANT BLACK)

Result : K/K - DOMINANT BLACK - SOLID [WILL NOT BE BRINDLED or EXPRESS AGOUTI]¹

Gene : CBD103

Variant Detected : Deletion of GGG

Two copies of dominant black (K) are present. No brindle/red or fawn offspring will be produced. Will not express Agouti phenotype. This can also be referred to as KB. In some breeds the K locus is fixed so all dogs will be KK. This (the K Locus) can be modified by other genes eg. liver, dilute, greying or merle. Red can only be added through the e locus.

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 : **NEGATIVE - NOT SHOWING THE PHENOTYPE**¹

Gene : FGF5

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

Owner's Name : Dawn Nacey

Pet Name : Cosmo

Microchip Number : 616093400103251

Approved Collection Method : No



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

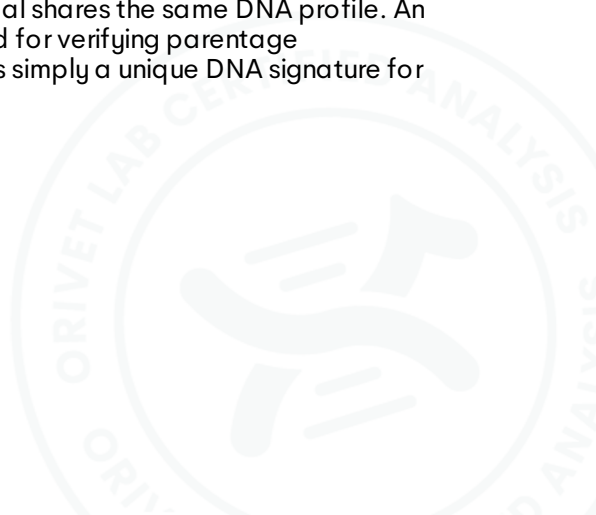
Insufficient information has been provided to provide a result for this test. Sire and Dam information and/or sample may be required. This result is mostly associated with tests that have a patent/license and therefore certain restrictions apply. Please contact the laboratory to discuss.

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.

