GENETIC ANALYSIS REPORT

OWNER'S DETAILS

Claire Mitchell
P.O. Box 93
Manjimup, WA 6258

Orivet Genetic Pet Care
Breed Specific Medicine

Add: P.O. Box 110
St Kilda 3182 VIC
Ph: +61 3 9534 1544
Fax: +61 3 9525 3550
email: info@orivet.com.au
website: www.orivet.com.au

A.B.N. 8 722 516 58 99

ANIMAL'S DETAILS

Registered Name:	Offtheedge Taun	**Registration No:**	Pending
Pet Name:	Taun	**Microchip No:**	953010001781462
Breed:	Australian Labradoodle	**Sex:**	Female
Date of Birth / Age:	06/06/17	**Colour:**	Red

COLLECTION DETAILS

Case Number:	17-088730	**Date of Test:**	31/07/17
Collected By:	Claire Mitchell	**Approved Coll. Mthd.:**	

Sample with Lab ID Number 17-088730 was received at Orivet Genetics, DNA was extracted and analysed with the following results reported:

DNA PROFILE The DNA Profile below represents the genetic identification of Offtheedge Taun

SNP01 AG	SNP02 TT	SNP03 GG	SNP04 AC	SNP05 GG	SNP06 GG	SNP07 CG	SNP08 AG	SNP09 GG	SNP10 AA	SNP11 GG
SNP12 CC	SNP13 GG	SNP14 AG	SNP15 GG	SNP16 AT	SNP17 CC	SNP18 AC	SNP19 AA	SNP20 GG	SNP21 GG	SNP22 CG
SNP23 AA	SNP24 CC	SNP25 GG	SNP26 AC	SNP27 AG	SNP28 GG	SNP29 AT	SNP30 AG	SNP31 GG	SNP32 AA	SNP33 CG
SNP34 GG	SNP35 AC	SNP36 AA	SNP37 AA	SNP38 GG	SNP39 AA	SNP40 AA	SNP41 CC	SNP42 GG	SNP43 GG	SNP44 GG
SNP45 AA	SNP46 GG	SNP47 CG	SNP48 AG	SNP49 AC	SNP50 GG	SNP51 AC	SNP52 GG	SNP53 GG	SNP54 GG	SNP55 AC
SNP56 GG	SNP57 AC	SNP58 AA	SNP59 GG	SNP60 AT	SNP61 GG	SNP62 GG	SNP63 GG	SNP64 CG	SNP65 CC	SNP66 AA
SNP67 AG	SNP68 AG	SNP69 AG	SNP70 GG	SNP71 CC	SNP72 AA	SNP73 AG	SNP74 CC	SNP75 GG	SNP76 AC	SNP77 AA
SNP78 CG	SNP79 AG	SNP80 AG	SNP81 GG	SNP82 GG	SNP83 AA	SNP84 CG	SNP85 AA	SNP86 CC	SNP87 AG	SNP88 AA

17-088730

RESULTS REVIEWED AND CONFIRMED BY:

Dr. Noam Pik BVs MDSV

George Sofronidis BSc (Hons)

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DISEASE(S):

EXERCISE INDUCED COLLAPSE **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
DEGENERATIVE MYELOPATHY **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
AUTOSOMAL HEREDITARY RECESSIVE NEPHROPATHY **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
CANINE HYPERURICOSURIA **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
PROGRESSIVE RETINAL ATROPHY - CORD1/RCD-4 **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
CYSTINURIA **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
GLOBOID CELL LEUKODYSTROPHY/KRABBE'S DISEASE **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
IVERMECTIN SENSITIVITY MDR1 **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
MUCOPOLYSACCHARIDOSIS **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
MYOTUBULAR MYOPATHY X LINKED **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
NEONATAL ENCEPHALOPATHY **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
PHOSPHOFRUCTOKINASE (PFK) DEFICIENCY **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
PYRUVATE KINASE (PK) DEFICIENCY **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
PROGRESSIVE ROD CONE DEGENERATION - PRA **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
VON WILLEBRAND'S DISEASE TYPE I **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
PROGRESSIVE RETINAL ATROPHY - RCD4 **- INDETERMINABLE - RESULT OBTAINED IS INCONCLUSIVE**
GENERALISED PRA 1 **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
MALIGNANT HYPERTHERMIA **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
SKELETAL DYSPLASIA 2 (COL11A2) **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
ELLIPTOCYTOSIS (B-SPECTRIN) **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
GM2 GANGLIOSIDOSIS **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
HEREDITARY NASAL PARAKERATOSIS (DRY NOSE) **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**
NARCOLEPSY **- NORMAL / CLEAR / NEGATIVE (NO VARIANT DETECTED)**

TRAIT(S):

LONG HAIR GENE (PHENOTYPE) **- POSITIVE - SHOWING THE PHENOTYPE**
A-LOCUS AGOUTI **- at/a TRI COLOUR/TAN POINTS (WITH BIFACTORING)**
DILUTE MLPH GENE (BLUE/GREY) **- DD - NO COPY OF MLPH-D ALLELE**
K-LOCUS (DOM BLACK/WILD TYPE) **- KK - DOMINANT BLACK WILL NOT BE BRINDLED or EXPRESS AGOUTI**
EM-LOCUS MELANISTIC MASK ALLELE **- E^n/E^n - NO MASKING EXTENSION ALLELE**
E (EXTENSION) LOCUS MC1R **- ee - YELLOW, GOLDEN, CREAM, WHITE or APRICOT**
BLACK HAIR FOLLICULAR DYSPLASIA **- POSTIVE - MAY EXPRESS THE PHENOTYPE**
BLACK AND TAN/SADDLE COAT **- CARRIER (ONE COPY OF VARIANT DETECTED)**
BROWN (GLNT331STOP) STOP CODON **(b^s) - BB - DOES NOT CARRY BROWN or CHOCOLATE**
BROWN (345DELPRO) DELETION **(b^d) - BB - DOES NOT CARRY BROWN or CHOCOLATE**
BROWN (SER41CYS) INSERTION CODON **(b^c) - BB - DOES NOT CARRY BROWN or CHOCOLATE**

17-088730

RESULTS REVIEWED AND CONFIRMED BY:

Dr. Noam Pik BVs MDSV George Sofronidis BSc (Hons)

The terms below are provided to help clarify certain results phrases on your genetic report. The phrases below are those as reported by Orivet and may vary from one laboratory to the other.

NORMAL/CLEAR/NEGATIVE - 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.

AFFECTED/POSITIVE FOR THE VARIANT

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.

AFFECTED – HETEROZYGOUS ONE COPY (AUTOSOMAL DOM)

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.

AFFECTED – HOMOZYGOUS TWO COPIES (AUTOSOMAL DOM)

Also referred to as POSITIVE HOMOZYGOUS. Two copies of the disease gene variant (mutant) have been detected and the animal may show symptoms associated with the disease. Please Note: This disease has dominant mode of inheritance so if mated to a clear animal ALL offspring with be AFFECTED – HETEROZYGOUS ONE COPY.

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.

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.

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. This will be repeated and looked at manually; if a result cannot be determined, a recollection may be requested.

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

Results for this test are still being processed. Some tests are run independently and are reported at a later date. When completed, the result will be emailed.

APPROVED COLLECTION METHOD (YES)

The sample submitted for testing HAS met the requirements recommended by member bodies for the DNA collection process. The animal has been identified via its microchip number (Positive ID) and collected by a Veterinarian or Approved Collection Agent.

APPROVED COLLECTION METHOD (NO)

The sample submitted for testing HAS NOT met the requirements recommended by member bodies for the DNA collection process.

TRAIT

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.

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.

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 and we will be happy to work with you to answer any relevant questions.