TerAsteR

Canine Analysis report

Nala

Owner Name	Test Report Code	Date Printed
Ashely Mcleod	PET24114	24 December 2024

Content

1 Overview

Overview

Nala's samples were submitted for a full set of genetic testing for dogs, including breed identification, single-gene genetic disease detection, complex disease detection, hair trait and behaviour determination. The analysis of sample received for PET24114 was completed and reported on 24 December 2024.

Sample quality

DNA extraction was successful. The specific information is as follows:

Sample ID	Total Reads	Reads matched with primer	Effective average depth	Ontarget ratio	Q20
PET24114	1726361	1330990	996.9	0.770980114	0.970436053

Breed identification

In this test, the sample is a mixed breed of Australian Cattle Dog, Staffordshire Bull Terrier, Great Pyrenees.

Australian Cattle Dog

Staffordshire Bull Terrier

Great Pyrenees

Disease detection

133 canine single-gene genetic diseases was tested. 0 single gene mutation was detected in this sample.

Single-gene genetic diseases	Risk
None	None

Detected Complex genetic diseases are as follows:

Complex genetic diseases	Relative risk(%)
Congenital sensorineural deafness	85.42
Mast cell tumor(MCT)	67.92
Obsessive-compulsive disorder	28.9
Lymphoma	28.71
Portosystemic vascular anomaly(PSVA)	28.58
Hypothyroidism	26.53
Osteosarcoma	22.58
Hip dysplasia	22.04
Hemangiosarcoma	14.31

2.1 Breed

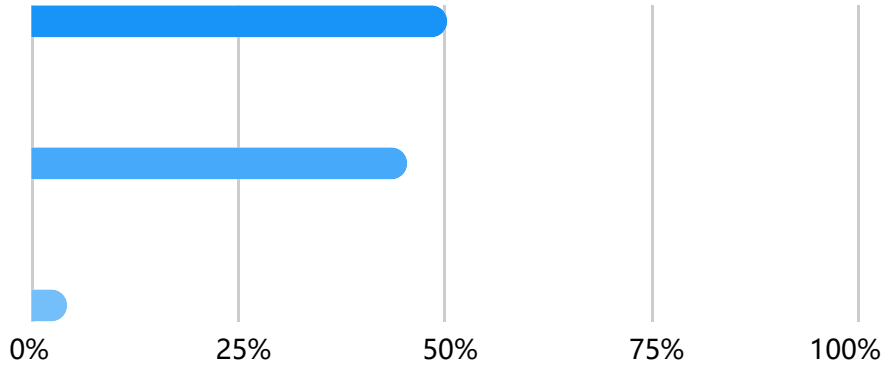
Breed Identification Report

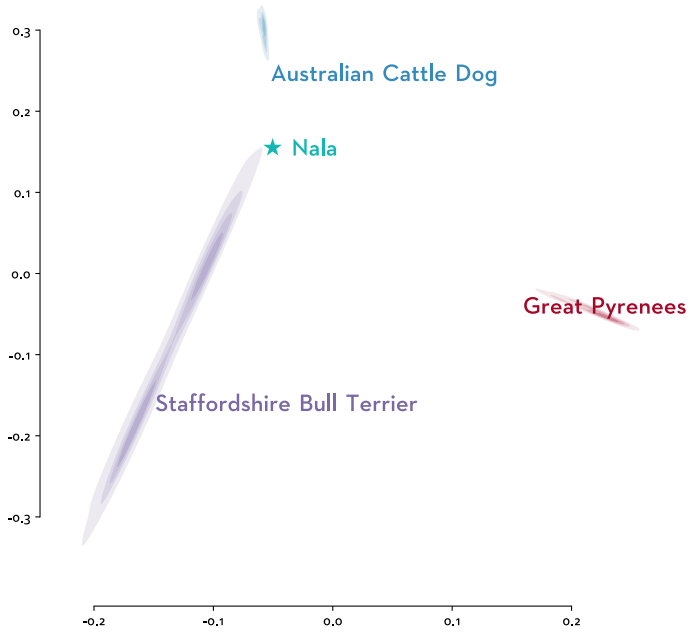
Nala is a mixed breed. The breed composition diagram is as follows:

50.26% Australian Cattle Dog

45.5% Staffordshire Bull Terrier

4.24% Great Pyrenees





Nala

Parents

A B C
32/58/10

A B C
67/33/0

Grand parents

A B C
29/61/10

A B C
35/55/10

Great Grandparents

A B C
64/36/0

A B C
70/30/0

A B C
24/63/13

A B C
33/59/8

Breed and their proportions:
A: Australian Cattle Dog
B: Staffordshire Bull Terrier
C: Great Pyrenees

Please note, the family tree above only shows the most likely scenario according to laws of genetics. It’ s just for reference.

Variety Description

Australian Cattle Dog

Historical Origin

It originated in Australia in 1840

Migrating Development

In the 19th century, Halls Heelers were subsequently developed into two modern breeds: the Australian Cattle Dog and the Australian Stumpy Tail Cattle Dog.

Characteristics

Australian Cattle Dog, or 'Cattle Dog' for short, is a type of shepherd dog used to graze long distances on rugged terrain. Like other working dogs, Australian Cattle Dogs are energetic and smarter It has an independent personality. Because it can adapt to the wild living environment, it is a good helper for driving cattle to the market for long distances in the Australian mainland.

Anecdote

The Australian Cattle Dog needs a lot of physical activity. Like many other herding dogs, it has an active and creative mind. If it doesn't have a job, it will find activities on its own, such as observing walking around. People.

Common Genetic Diseases

Cystinuria Type II-A、Congenital Myotonia、Neuronal Ceroid Lipofuscinosis 5、Neuronal Ceroid Lipofuscinosis 8、Primary lens luxation、Multi-Drug Sensitivity

Traits

Average Weight: 16-20 kg
Average Height: 43-51 cm
Average Life Expectancy:12-15 years

Variety Description

Staffordshire Bull Terrier

Historical Origin

It originated from Britain hundreds of years ago

Characteristics

The Stamfordshire Bull Terrier is a medium-sized short-haired dog that belongs to the bulldog type. This modern breed is ideal as a companion dog and is known for its fearlessness and tenacity. It likes nature, has a low-key and quiet personality, is stable and reliable, and is an important multi-purpose dog.

Anecdote

The early bulldogs and terriers were not bred like today's breeds, but were bred to fight against large animals such as bears or bulls. This required testing the strength and skills of dogs. These bloody sports were officially abolished in 1835 as Britain began to implement animal welfare laws.

Common Genetic Diseases

L2 hydroxyglutaric aciduria、Hereditary cataract、Encephalopathy、Cerebellar Ataxia

Traits

Average Weight: 15-25 kg
Average Height: 43-48 cm
Average Life Expectancy:10-14 years

Variety Description

Great Pyrenees

Historical Origin

It originated in Central Asia or Siberia 40 centuries ago

Characteristics

The Great White Bear Dog has a history that can be traced back to the ancient Roman period. It was brought to Spain by the ancient Romans. It is full of confidence, gentle and friendly (individually violent personality), loyal and brave, and is the most popular dog today. The powerful dog breeds can loyally stick to their jobs under all weather conditions. It was once sent as a guard sentry for fortresses to protect sheep from wild animals. Sometimes they can work alone for several days.

Anecdote

The Great Polar Bear Dog likes to pull carts and is good at moving on soft snow, so it can pull sleds and can be a guide in the sled team trip. In World War I, the Great Polar Bear Dog was used to steal The embargoed items cross the border between France and Spain, because it follows a path that humans cannot walk, and it can successfully avoid customs officers.

Common Genetic Diseases

Canine multifocal retinopathy - Type 1、Glanzmann's thrombasthenia - Type I

Traits

Average Weight: 41-57 kg
Average Height: 65-81 cm
Average Life Expectancy:12-14 years

Single-gene disease detection report

No snp mutation fund in 133 canine single diseases.

Complex disease detection report

Congenital sensorineural deafness is due to the degeneration of cochlear cells or cochlear nerve cells. The function of the cells as receptors disappears, leading to loss of sensorineural hearing. The development of bony labyrinth, membranous utricles and semicircular canals is complete. Striate blood vessels that supply the cochlea are degenerated at first, and then the hair cells of the organ of corti develop from the base to the top of the cochlea. The hair cells are non-renewable and eventually cause deafness.

Items	Congenital sensorineural deafness
Test results	High risk
Relative risk	85.42
Gene	CRIM1; GYS2; none; SNX10 near; NELL2; FRMD8; none
Genotype	A,A; T,T; G,A; C,T; T,C; C,T; G,A

The relative risk of Congenital sensorineural deafness in this sample is higher than 85.42% of dogs.

The affected side has complete hearing loss, no response to surrounding sounds, easy to startle, and difficulty in locating the sound source.

According to the history of the disease and the family's prevalence, a hearing test should be performed. If result of the otoscope examination are normal, a brainstem auditory response test is required. The disease is irreversible and there is currently no effective treatment. Pay attention to identify and treat external and middle ear diseases.

2.2 Genetic diseases

Complex disease detection report

Mast cell tumor(MCT) is a tumor formed by the accumulation of mast cells originating in the dermis and subcutaneous tissue. It is a round cell tumor. It is classified as malignant tumor in histology and is the most common skin tumor in dogs. Mast cells are The cells that exist in the normal body contain heparin, histamine and a series of vasoactive substances, which are involved in normal inflammatory and allergic reactions. According to histological standards, mast cell tumors are divided into three categories: undifferentiated, Moderately differentiated, well-differentiated, and well-differentiated mast cell tumors have a low metastasis rate (less than 10%).

Usually appear in the perineum, trunk, hind limbs and external genitalia. It is manifested as a single lesion, or multiple lesions, and skin or subcutaneous edema, papules, nodules, etc. may appear. The diameter ranges from several millimeters to several centimeters. Varying, blurred or clear boundaries, soft or hard tissues, with or without hair growth on the surface, accompanied by ulcers, redness, and pigmentation with or without. Some have gastric or duodenal ulcers and coagulation disorders, showing the stomach Intestinal ulcers, vomiting (possibly with blood), delayed wound healing, hypotensive shock, anorexia, melena and abdominal pain, etc.

Items	Mast cell tumor(MCT)
Test results	Medium risk
Relative risk	67.92
Gene	AP1M1 near; ITGA6
Genotype	G,G; C,T

The relative risk of Mast cell tumor(MCT) in this sample is higher than 67.92% of dogs.

Diagnosis is based on clinical symptoms and the results of skin histocytology and pathology. Cytology shows many round nuclei and basophilic cytoplasmic granules, possibly eosinophils, and round cells in histopathology. There is no cystic infiltration layer or compact compression cord. At the same time, the animal's body should be checked for metastasis through imaging and blood test to assess the animal's physical condition. The treatment can be performed by surgical removal of tumor tissue.

2.2 Genetic diseases

Complex disease detection report

Obsessive-compulsive disorder refers to recurring behaviors that occur beyond the normal range or beyond the frequency or interval required to achieve its apparent purpose, such as sports behaviors, grooming behaviors, feeding behaviors, and hallucinations. Many of the behaviors are unique to pets, but they are exaggerated and lasted for a long time, hindering the normal function of pets in their social environment. It is generally believed that obsessive-compulsive disorder is caused by abnormal neuropharmacological activities in brain.

Items	Obsessive-compulsive disorder
Test results	Low risk
Relative risk	28.9
Gene	CDH2; DSC3; CPQ
Genotype	T,T; G,A; A,C

The relative risk of Obsessive-compulsive disorder in this sample is higher than 28.9% of dogs.

Some manifested as uninterrupted licking of hair, even causing skin damage and hair loss. Or spending a lot of time swallowing, chewing or sucking various items such as cloth, leather and plastic. At the same time, pets will complain call, hide or move to get out of this state. Some animals will have hallucinations, screaming, chasing or looking directly at imaginary objects.

It is necessary to understand the medical history, observe the clinical symptoms, carefully record the behavioral symptoms and their duration. Try to find out the factors that induce these behaviors and try to avoid them. In some special conditions, it may be similar to epileptic seizures. Some behaviors may be very complicated, and a comprehensive physical examination should be carried out at the same time to eliminate and treat related diseases, and investigate the role of the disease in the performance behavior. Generally, medical treatment can be considered include Ami Tritriptyline, Buspirone, Clomiphene, Hydrocodone and Fluoxetine. But there may be side effects such as drowsiness, vomiting, diarrhea and arrhythmia.

2.2 Genetic diseases

Complex disease detection report

Lymphoma , also called lymphosarcoma, is a malignant tumor of the lymphatic system. It is a common tumor disease in dogs, accounting for 7% to 24% of canine tumor diseases. Lymphoid tumors may be caused due to genetics factors, carcinogens, immune factors, or retroviral pathogen, which mainly affect lymph nodes and other organs such as liver or spleen. According to the anatomical location, they are divided into multicentric lymphoma, digestive tract lymphoma, mediastinal lymphoma and extranodal lymphoma. According to histological grading standard, it is divided into low, medium and high levels. According to the immunophenotypic characteristics of lymphocytes, it is divided into T-cell lymphoma and B-cell lymphoma. According to clinical manifestations, it is divided into lymphoma 1-5 Period.

Items	Lymphoma
Test results	Low risk
Relative risk	28.71
Gene	MCC
Genotype	G,G

The relative risk of Lymphoma in this sample is higher than 28.71% of dogs.

Lymphoma mainly affects middle-aged to elderly dogs.It mainly manifests as painless and progressive lymphadenopathy, which can be single or multiple, and any part outside the lymph nodes, such as spleen and gastrointestinal tract, may also be the first site of lymphoma. Multicentric lymphosarcoma manifests systemic lymphohistiosarcoma, loss of appetite, weakness, lethargy, weight loss,ect. Trophic lymphosarcoma showing weight loss, lethargy, vomiting, diarrhea, with or without bleeding. Skin type lymphosarcoma shows one or more skin lesions, starting with eczema and itching scars, and then becoming tumors. Transitional lymphosarcoma mainly manifests respiratory symptoms, and edema of the face and forelimbs caused by tumor compression and invading venous tubes.

Detailed systemic examination, palpating all lymph nodes throughout the body. Hematological examination to determine the condition of platelets, lymphocytes, eosinophils, and anemia. Biochemical examination to determine whether it is caused by hypercalcemia and nephropathy. X Light can detect enlargement of the sternum, lower lumbar lymph nodes, spleen and liver.

Complex disease detection report

Portosystemic vascular anomaly(PSVA) is an abnormality of blood vessels between the portal circulation and the systemic circulation. In large dogs, intrahepatic short circuits are common. Patent venous catheters are a common type of intrahepatic vascular short circuits. Short-circuits of extrahepatic blood vessels are common in small dogs, portal vein simplification, portal vein-abdominal vena short-circuit, left gastric vein and abdominal vena short-circuit, and portal vein atresia. The short-circuited blood vessels make portal vein blood flow directly into the systemic circulation, and the liver cannot remove potential toxins from the blood, resulting in Hepatic encephalopathy and lack of hepatic nutrients in portal vein blood at the same time cause liver atrophy.

Items	Portosystemic vascular anomaly(PSVA)
Test results	Low risk
Relative risk	28.58
Gene	none
Genotype	A,A

The relative risk of Portosystemic vascular anomaly(PSVA) in this sample is higher than 28.58% of dogs.

Commonly seen in animals under 3 years of age, manifested as developmental delay, mental decline, convulsions, coma or blindness. Salivation, loss of appetite, vomiting, diarrhea, polydipsia, polyuria, hematuria, elevated body temperature, etc.

Diagnosed through hematology, biochemistry, imaging, urinalysis and liver biopsy. Anemia is seen, urine specific gravity is usually less than 1.030, ammonium urate crystals are seen, and the kidney volume is about 70% larger than normal. Low serum creatinine And urea nitrogen, low albumin, low cholesterol, moderately elevated AST, ALT, ALKP, GGT. The bile acid concentration is higher than normal regardless of fasting and postprandial. The diagnosis requires rectal imaging examination and laparotomy. Contrast B-ultrasound shows small, reduced and irregular blood vessels in the liver. Pay attention to the differentiation from liver failure, congenital urea cycle enzyme deficiency, epilepsy, intrahepatic arteriovenous fistulas, etc.

2.2 Genetic diseases

Complex disease detection report

Hypothyroidism is due to the lack of thyroxine T4 and 3,5,3,-triiodothyronine T3, leading to clinical symptoms involving almost all organ systems.

Items	Hypothyroidism
Test results	Low risk
Relative risk	26.53
Gene	ZNF76
Genotype	C,A

The relative risk of Hypothyroidism in this sample is higher than 26.53% of dogs.

Mental disorders and abnormal skeletal development, leading to disproportionate dwarfism, goiter may also be present. Skin pigmentation, keratinization and seborrhea, dry coat, shedding or pyoderma due to decreased immunity The tongue and eyeballs of the affected dog are protruding, resulting in abnormal appearance. Lethargy, lethargy, loss of appetite, constipation and cramps, ataxia.

Thyroid function tests can be performed to confirm hypothyroidism. At the same time, CBC, serum biochemistry, thyroid biopsy, histopathology and ultrasound can be performed. It can show mild non-regenerative anemia, high cholesterol, and high creatine. Kinase, high alkaline phosphatase, low sodium, hypoglycemia, etc. The cardiovascular system can show that the heart rate, blood pressure, stroke volume, contractility, and anterior ejection period decrease, and the thickness of the left ventricle posterior wall and ventricular septum decrease. Appears Relevant complications should be treated with symptomatic treatment and thyroid hormone therapy should be performed at the same time.

2.2 Genetic diseases

Complex disease detection report

Osteosarcoma is a primary bone tumor in dogs. It is caused by mesenchymal stem cells in the bones. It originates deep inside the bones. When it grows outwards, the bones are destroyed from the inside and cause strong pain. Osteosarcoma is mainly caused by accumulation or exposure to carcinogens or genetic factors. It accounts for up to 85% of all bone malignant tumors. It mainly affects middle-aged to elderly dogs, especially large dog breeds such as Great Danes and Irish wolfhound. However, it can also appear in any other bone structure. The limbs account for 75%-85% of all cases. Other bones that can be affected include the upper jaw, mandible, spine, skull, ribs, and nasal cavity, paranasal sinuses and pelvis. Osteosarcoma of the external bone is relatively rare, but it can be found in breast tissue, subcutaneous tissue, spleen, intestine, liver, kidney, testis, vagina, eyes, stomach, ligament, synovium, meninges and adrenal glands.

Items	Osteosarcoma
Test results	Low risk
Relative risk	22.58
Gene	FBL near; none
Genotype	G,G; C,A

The relative risk of Osteosarcoma in this sample is higher than 22.58% of dogs.

Long bone pain and lumps (lumps not related to body surface trauma or scars), nodules under the skin, claudication, and weakness. Sudden fractures and frequent fractures and rupture of the periosteum during general physical activity. The intense pain caused irritability, aggressiveness, loss of appetite, weight loss, whimpering, insomnia, and reluctance to exercise.

The disease is most common in the leg bones of large dogs. It usually manifests as limb pain or fractures during low-intensity activities in dogs. If the tumor is large enough, the leg can be seen to be significantly swollen, but it is usually. It is believed that cancer cells have spread. The diagnosis is mainly based on clinical examination, X-ray and histological examination. X-ray shows osteolysis, bone hyperplasia, periosteal reaction, soft tissue swelling, pathological fracture and metastatic lung injury. Related blood tests and MRI examinations Determine body function and tumor metastasis. Bone biopsy is required for pathological diagnosis to confirm the diagnosis. Pay attention to osteomyelitis, trauma, bone infarction and benign cystic lesions. Treatment mainly adopts amputation combined with chemotherapy and immunotherapy.

2.2 Genetic diseases

Complex disease detection report

Hip dysplasia is an abnormality in the hip fossa, due to inconsistencies between muscles and overgrown bones, hip instability leads to subluxation of the acetabular and femoral head, and the hip joint cannot remain stable. Daily body activities such as standing, walking, weight bearing and other sports will produce hip wear, with the increase of damage accumulation over time, the hip joint will appear morphological structural changes such as femoral neck thickening, osteophytes and acetabular sclerosis, secondary osteoarthritis and pain. Severe cases can lead to claudication and painful arthritis. In many dog breeds, especially large dog breeds, hip dysplasia is the single most common cause of hip arthritis.

Items	Hip dysplasia
Test results	Low risk
Relative risk	22.04
Gene	CHST3; SRBD1; RPN1 near; CCND1 near
Genotype	C,C; C,C; C,T; T,C

The relative risk of Hip dysplasia in this sample is higher than 22.04% of dogs.

Hip dysplasia usually occurs at 18 months and can range from mild mobility problems to severe paralysis and osteoarthritis. Sick dogs usually reduce hip movement, which leads to a 'rabbit jump', which means that the two hind legs move together, which can also lead to muscle stiffness. Because the hip joint cannot move freely, the affected dog usually adjusts the spine to adapt to the changes in the hip joint, which can cause spine, knee joint or soft tissue problems. Hip joint pain usually occurs after activities, and it will be significantly reduced or disappeared after rest.

Diagnosis is based on clinical symptoms and X-ray examination. Other environmental factors that may cause illness include excess weight, minor injuries, hip joints overworked or worn, torn ligaments, and repetitive joint movements. There is no way to completely cure the disease, but there are ways to reduce clinical symptoms. Non-surgical treatment options include three elements: weight control, exercise control and drug therapy. Among them, weight control is very important, and sometimes simply reducing weight alone can control all symptoms of diarrhea. Proper exercise stimulates the growth of cartilage, but excessive exercise may cause damage to the cartilage.

2.2 Genetic diseases

Complex disease detection report

Hemangiosarcoma is a malignant hyperplastic tumor of vascular endothelial cells. Skin may be the primary or metastatic site.

Items	Hemangiosarcoma
Test results	Low risk
Relative risk	14.31
Gene	ANGPTL5-TRPC6
Genotype	C,T

The relative risk of Hemangiosarcoma in this sample is higher than 14.31% of dogs.

Lumps appear on the skin or under the skin of dogs, with light blue to red spots or nodules, usually less than 4 cm in diameter. It could also show subcutaneous spongy dark red to blue masses with unclear boundaries, greater than 10 cm in diameter. Symptoma usually accompanied by hair loss, bleeding or ulcers. It mostly occurs in the limbs and trunk of dogs. There may be abnormal bleeding such as thrombocytopenia and diffuse intravascular coagulation.

Diagnosis is based on clinical symptoms, which requires cytological examination and histopathological examination. In most cases of cytological examination, blood contains tumor endothelial cells, which are normal or large, with polymorphic cells and basophilic cytoplasm. There are obvious nucleoli. Histopathology shows skin or subcutaneous infiltrating atypical polymorphous densely stained spindle cell masses, which are easy to form vascular grooves and have different mitotic speeds. At the same time, relevant blood tests and imaging examinations should be performed to assess the body's condition and tumor metastasis. Surgery is the main treatment method.

2.3 Hair trait

Hair trait report

The coat color most likely to be carried by this sample is Mink; Fawn; The hair type most likely to be carried by this sample is short straight hair.

The coat color of dogs is determined by the interaction of multiple genetic loci, and completely opposite results may be obtained between different loci. Therefore, the test is only for reference, please refer to the actual appearance.

Associated genes	Result
B (brown) locus	T,T
B (brown) locus	C,C
B (brown) locus	CCT,CCT
E (extension) locus	G,G
K (dominant black) locus	CCC,CCC
A (agouti) locus	T,T
A (agouti) locus	A,A
A (agouti) locus	nan,nan
A (agouti) locus	C,C
D (dilute) locus	G,G

***BB refers to black;**

***EE refers to normal extension, means pattern expressed as per alleles present at A and K loci;**

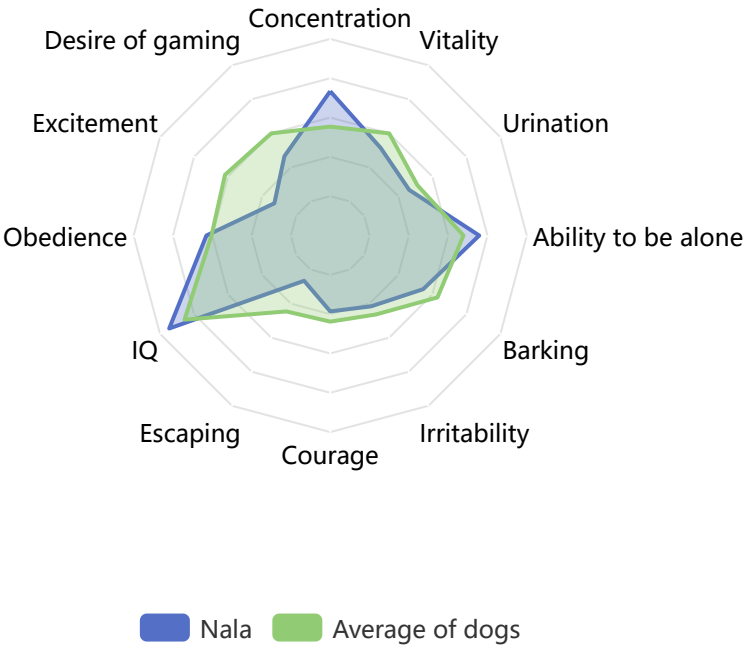
***K^yK^y refers to phaeomelanin permitted (pattern expressed as per alleles present at A and E loci);**

***A^yA^y refers to fawn or sable;**

***DD refers to not diluted color.**

2.4 Behaviours

Behaviours determination



Concentration refers to the degree to which a dog's attention is affected by external stimuli, such as being attracted to a leaf on the asphalt, being attracted to many short intermittent sounds, being attracted to a plastic bag blowing in the wind, or tending to chase a fly and walking birds and other small animals. The lower the score, the greater the influence of external stimulation and the lower the concentration.

Desire of gaming refers to the activity of the dog, the desire to play games. The higher the score, the more active, the more energetic, and the stronger the desire to play.

Excitement refers to the dog's response after being stimulated. The higher the score, the stronger the response to stimulation or excitement, such as walking, driving, doorbell ringing, guests visiting, the owner returning home after a period of time, and the dog's excitement.

Obedience refers to dog’ s willingness to obey orders. Dogs with high scores show more concern for their owners, willingness to obey orders, positive reactions, quick learning, and high obedience.

IQ refers to the dog's IQ index, the higher the score, the smarter it is.

Escaping refers to the probability that the dog will run away, or escape home or owner at the first opportunity. The higher the score, the greater the probability.

Courage refers to the dog's fear and anxiety about unfamiliar things. The higher the score, the easier it is to have fear or anxiety.

Irritability refers to the dog's aggression. The higher the score, the easier it is to produce aggressive behavior, which has nothing to do with combat effectiveness.

Barking refers to the degree of continuous barking of the dog. The higher the score, the more severe the continuous barking when the dog is excited or stimulated.

Ability to be alone refers to the dog's perception of loneliness and whether it is prone to separation anxiety. The higher the score, the stronger the perception of loneliness and the lower the ability to be alone.

Urination refers to the disorder of urination when the dog is at home alone. The higher the score, the greater the possibility of disorderly urination.

Vitality refers to the activity of the dog, the higher the score, the more lively, energetic, and the more interesting and noisy personality, the greater the amount of exercise required.

3 References

Single-gene genetic diseases:

2-8-Dihydroxyadenine
Alexander disease
Alport Syndrome
Autosomal Recessive Amelogenesis Imperfecta
Axonal Disease Fetal-onset neonatal neuroaxonal
Axonal Disease Hypomyelination and Tremor
Axonal Disease Shaking Puppy Syndrome
C3 deficiency
Canine elliptocytosis
Canine Multifocal Retinopathy - Type 1
Canine Multifocal Retinopathy - Type 2
Canine Multifocal Retinopathy - Type 3
Catalase Deficiency
Centronuclear Myopathy
Cerebellar abiotrophy
Cerebellar Ataxia
Cerebellar disease Cerebellar ataxia
Cerebellar disease Cerebellar hypoplasia
Chondrodysplasia
Cleft lip with or without cleft palate
Coagulopathy Thrombopathia
Collie eye anomaly
Congenital hypothyroidism
Congenital Macrothrombocytopenia
Congenital Myasthenic Syndrome
Congenital Myotonia
Congenital Stationary Night Blindness
Cyclic neutropenia
Cystinuria
Cystinuria Type II-A
Cystinuria Type II-B
Cystinuria 1
Cystinuria 2
Cystinuria 4
Day blindness
Degenerative Myelopathy
Dermatofibrosis
Dilated Cardiomyopathy
Dry eye curly coat syndrome
Dwarfism
Dystrophic epidermolysis bullosa
Early retinal degeneration
Ectodermal dysplasia
Encephalopathy
Episodic falling syndrome
Exercise Induced Collapse
Factor VII deficiency
Familial Nephropathy
Fetal-onset neuroaxonal dystrophy
Fucosidosis
Gallbladder mucocele formation
Gangliosidosis 1
Gangliosidosis GM2 Gangliosidosis
Glanzmanns thrombasthenia Type I
Globoid cell leukodystrophy
Glycogen Storage Disease Type Ia
Glycogen Storage Disease Type II
Glycogen Storage Disease Type IIIa
Hemophilia A
Hemophilia B
Hereditary Cataract
Hereditary Footpad Hyperkeratosis
Hereditary Nasal Parakeratosis
Hereditary Vitamin D-Resistant Rickets
Hyperuricosuria
Ichthyosis
Imerslund-Grasbeck Syndrome
Intestinal malabsorption of cobalamin
Juvenile Epilepsy
L-2-HGA-L-2-hydroxyglutaric aciduria
Late Onset Ataxia
Ligneous Membranitis

**❌: Carrier

Long QT Syndrome
Lysosomal Storage Disease
Malignant Hyperthermia
May-Hegglin anomaly
MPS VI
Mucopolysaccharidosis Type IIIA
Mucopolysaccharidosis Type VII
Multi-Drug Sensitivity
Muscular dystrophy
Musladin-Lueke Syndrome
Myostatin defect
Myotubular Myopathy 1
Narcolepsy
Neonatal ataxia
Neonatal Encephalopathy with Seizures
Neuroaxonal Dystrophy
Neuronal Ceroid Lipofuscinosis
Neuronal Ceroid Lipofuscinosis 1
Neuronal Ceroid Lipofuscinosis 10
Neuronal Ceroid Lipofuscinosis 12
Neuronal Ceroid Lipofuscinosis 2
Neuronal Ceroid Lipofuscinosis 5
Neuronal Ceroid Lipofuscinosis 6
Neuronal Ceroid Lipofuscinosis 8
Oculoskeletal Dysplasia 1
Osteogenesis imperfecta
Pachyonychia congenita
Persistent Mullerian Duct Syndrome
Phosphofructokinase deficiency
Platelet Adhesion Defect
Polyneuropathy
Prekallikrein Deficiency
Primary ciliary dyskinesia
Primary hyperoxaluria type I
Primary Lens Luxation
Primary Open Angle Glaucoma
Progressive neuronal abiotrophy
Progressive Retinal Atrophy
Progressive Retinal Atrophy - cord1
Progressive Retinal Atrophy - cord2
Progressive retinal atrophy - Dominant
Progressive Retinal Atrophy - PRA1
Progressive Retinal Atrophy - PRCD
Progressive Retinal Atrophy - RCD1
Progressive Retinal Atrophy - RCD3
Progressive Retinal Atrophy - rcd4
Progressive Retinal Atrophy - Type A
Protein Losing Nephropathy
Pyruvate Dehydrogenase Phosphatase Deficiency
Pyruvate kinase deficiency
Renal Cystadenocarcinoma and Nodular
Sensory ataxic neuropathy
Severe Combined Immunodeficiency
Spinocerebellar Ataxia
Spondylocostal Dysostosis
Spongiform leukoencephalomyelopathy
Trapped Neutrophil Syndrome
Von Willebrand Disease Type I
Von Willebrand Disease Type II
Von Willebrand Disease Type III
X-linked Severe Combined Immunodeficiency

Complex genetic diseases:

Adult dog deafness
Amylase
B-cell lymphoma
Congenital megaesophagus
✕ Congenital sensorineural deafness
Duchenne muscular dystrophy
ED
✕ Hemangiosarcoma
✕ Hip dysplasia
✕ Hypothyroidism
✕ Lymphoma
✕ Mast cell tumor(MCT)
✕ Obsessive-compulsive disorder
✕ Osteosarcoma
✕ Portosystemic vascular anomaly(PSVA)
Rupture of the cranial cruciate ligament

**✕ : Carrier

Breed list:

- Abruzzo Mastiff
- Afghan Hound
- Airedale Terrier
- Akita
- Alaskan Malamute
- American Cocker Spaniel
- American Eskimo Dog
- American Hairless Terrier
- American Pit Bull Terrier
- American Staffordshire Terrier
- Anatolian Shepherd
- Australia Terrier
- ✔ Australian Cattle Dog
- Australian Kelpie
- Australian Shepherd
- Australian Silky Terrier
- Azawakh
- Basenji
- Basset Hound
- Beagle
- Bearded Collie
- Belgian Malinois
- Belgian Shepherd
- Bellington Terrier
- Bernese Mountain Dog
- Bichon Frise
- Black Russia Terrier
- Boerboel
- Border Collie
- Border Terrier
- Borzoi
- Boston Terrier
- Bouvier des Flandres
- Boxer
- Bracco
- Briard
- Brittany
- Bull Terrier
- Bullmastiff
- Cairn Terrier
- Cane Corso
- Canis aureus
- Cardigan Welsh Corgi
- Carolina Dog
- Catehola Leopard Dog
- Cavalier King Charles Spaniel
- Chesapeake Bay Retriever
- Chihuahua
- Chinese Crested
- Chinese Shar-pei
- Chinook
- Chow Chow
- Cirneco dell'Etna
- Coton de Tulear
- Curly Coated retriever
- Czechoslovakian Wolfdog
- Dachshund
- Dalmatian
- Doberman Pinscher
- Dogue de Bordeaux
- English Bulldog
- English Cocker Spaniel
- English Foxhound
- English Mastiff
- English Setter
- English Springer Spaniel
- Eurasier
- Field Spaniel
- Finnish Spitz
- Flat-coated Retriever
- French Bulldog
- German Shepherd Dog
- German Shorthaired Pointer
- German Wirehaired Pointer
- Giant Schnauzer
- Glen of Imaal Terrier

✔ : Carrier

Golden Retriever
Goldendoodle
Gordon Setter
Great Dane
✔ Great Pyrenees
Greater Swiss Mountain Dog
Greenland Dog
Greyhound
Griffon Bruxellois
Havanese
Ibiza Hound
Icelandic Sheepdog
Irish Setter
Irish Terrier
Irish Water Spaniel
Irish Wolfhound
Italian Greyhound
Jack Russell Terrier
Japanese Chin
Keeshond
Kerry Blue Terrier
Komondor
Kuvasz
Labrador Retriever
Large Münsterländer
Leonberger
Lhasa Apso
Maltese
Miniature Bull Terrier
Miniature Dachshund
Miniature Pinscher
Miniature Schnauzer
Molosser
Neapolitan Mastiff
New Guinea Singing Dog
Newfoundland
Norfolk Terrier
Norwegian Elkhound
Norwich Terrier
Nova Scotia Duck Hunting Retriever
Old English Sheepdog
Otterhound
Palatore Dog
Papillon
Parson Russell Terrier
Pekingese
Pembroke Welsh Corgi
Peruvian Inca Orchid
Petit Basset Griffon Vendéen
Pharaoh Hound
Picardy Spaniel
Pomeranian
Portuguese Water Dog
Poodle - Miniature
Poodle - Standard
Poodle - Toy
Pug Dog
Puli
Pumi
Pyrenean Mountain Dog
Rat Terrier
Redbone Coonhound
Rhodesian Ridgeback
Rottweiler
Saarlooswolfdog
Saluki
Samoyed
Schipperke
Collie
Scotland Terrier
Scottish Deerhound
Shetland Sheepdog
Shiba Inu
Shih Tzu
Siberian Husky
Sloughi
Soft-coated Wheaten Terrier
Saint Bernard
St.huberthound
✔ Staffordshire Bull Terrier
Standard Schnauzer
Sussex Spaniel
Sweden Wa Hande dogs
Tervuren
Tibet Terrier
Tibetan Mastiff
Tibetan Spaniel
Toy Fox Terrier
Toy Manchester Terrier
Vizsla
Volpino
Weimaraner
West Highland White Terrier
Whibit
Whippet
Wire Fox Terrier
Wirehaired Pointing Griffon
Wolf
Xigou
Xoloitzcuintle
Yorkshire Terrier

**✔ : Carrier

CANINE BREED COMPOSITION CERTIFICATE

Certified breed analysis and genetic makeup for

Nala

BREED BREAKDOWN

Australian Cattle Dog – 50.26%

Staffordshire Bull Terrier – 45.5%

Great Pyrenees – 4.24%

LAB SAMPLE ID – PET24114

CASE REF: Easy DNA[PGENC1411AU]

24 December 2024