8700 2321 6180 942

Mascot Millenium Forest Aglaran 2 Crystal Of Eternity, Saarlooswolfdog

| | | | |
|---|---|---|---|
| **Registered Name:** | Mascot Millenium Forest Aglaran 2 Crystal Of Eternity | **Owner:** | Toni Miettinen |
| **Nickname:** | Hiro | **Country:** | Finland |
| **Microchip:** | 100098100013479 | **Testing date:** | 2014/7/14 |
| **Breed:** | Saarlooswolfdog | **DNA identification profile:** | Identified with standard ISAG 2006 markers |
| **Gender:** | Male | | |

Dog's identity verified from microchip or tattoo by veterinarian or other authorised person during sample taking: **Yes**

## Test results for pharmacogenetics

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Malignant Hyperthermia (MH) | Autosomal Dominant | Clear |
| Multi-Drug Resistance 1, (MDR1) | Autosomal Dominant | Clear |

On behalf of Genoscoper Laboratories,

Jonas Donner

SIGNATURE

Jonas Donner, PhD, Head of Research and Development
at Genoscoper Laboratories

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| **Gender:** | Male | | |

Dog's identity verified from microchip or tattoo by veterinarian or other authorised person during sample taking: **Yes**

## Test results - Traits - page 1

### Coat Colour

| Trait | Genotype | Description |
|---|---|---|
| Colour Locus E - Extensions | E/E | The dog is likely to express the coat colour defined by the K and A loci. |
| Colour Locus B - Brown | b/b | The dog is likely to have brown pigment. |
| Colour Locus K - Dominant Black | ky/ky | The dog is likely to express the coat colour defined by the colour locus A. |
| Colour Locus A - Agouti | aw/aw | The dog is genetically wolf gray. |
| Colour Locus H - Harlequin | h/h | The dog doesn't have harlequin pattern. |

### Coat Type

| Trait | Genotype | Description |
|---|---|---|
| Furnishings / Improper Coat in Portuguese Water Dogs (marker test) | GG/TC | The dog is not genetically likely to express furnishings. |
| *KRT71* c.451C>T (p.Arg151Trp) | No call | |

On behalf of Genoscoper Laboratories,

Jonas Donner

SIGNATURE

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| **Microchip:** | 100098100013479 | **Testing date:** | 2014/7/14 |
| **Breed:** | Saarlooswolfdog | **DNA identification profile:** | Identified with standard ISAG 2006 markers |
| **Gender:** | Male | | |

Dog's identity verified from microchip or tattoo by veterinarian or other authorised person during sample taking: **Yes**

## Test results - Traits - page 2

### Body Size

| Trait | Genotype | Description |
|---|---|---|
| *IGF1* (chr15:41221438) | G/G | The dog is homozygous for the ancestral allele typically associated with large body mass. |
| *IGF1R* c.611G>A (p.Arg204His) | G/G | The dog carries two ancestral alleles typically found in larger-sized breeds. |

### Morphology

| Trait | Genotype | Description |
|---|---|---|
| *BMP3* c.1344C>A (p.Phe448Leu) | C/C | The dog does not carry the tested allele typically associated with shortened head (brachycephaly). The dog is more likely to have an elongated head (dolichocephaly). |
| chr10:11072007 | T/T | The dog does not carry an allele typically associated with floppy ears. The dog is more likely to have pricked than floppy ears. |
| *T* c.189C>G (p.Ile63Met) | C/C | The dog does not carry the tested bobtail-causing genetic variant. The dog is most likely long-tailed. |

On behalf of Genoscoper Laboratories,

SIGNATURE

Jonas Donner, PhD, Head of Research and Development at Genoscoper Laboratories

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Mascot Millenium Forest Aglaran 2 Crystal Of Eternity, Saarlooswolfdog

# Test results - Additional disorders found in other breeds - page 1

## Blood Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Bleeding disorder due to P2RY12 defect | Autosomal Recessive | Clear |
| Canine Cyclic Neutropenia, Cyclic Hematopoiesis, Grey Collie Syndrome, (CN) | Autosomal Recessive | Clear |
| Factor IX Deficiency or Hemophilia B; mutation Gly379Glu | X-linked Recessive | Clear |
| Factor IX Deficiency or Hemophilia B; mutation originally found in Lhasa Apso | X-linked Recessive | No call |
| Factor VII Deficiency | Autosomal Recessive | Clear |
| Factor VIII Deficiency or Hemophilia A; mutation originally found in German Shepherd Dog | X-linked Recessive | Clear |
| Glanzmann Thrombasthenia Type I, (GT); mutation originally found in Pyrenean Mountain Dog | Autosomal Recessive | Clear |
| Hereditary Phosphofructokinase (PFK) Deficiency | Autosomal Recessive | Clear |
| May-Hegglin Anomaly (MHA) | Autosomal Dominant | Clear |
| Pyruvate Kinase Deficiency; mutation originally found in Beagle | Autosomal Recessive | Clear |
| Pyruvate Kinase Deficiency; mutation originally found in Pug | Autosomal Recessive | Clear |
| Pyruvate Kinase Deficiency; mutation originally found in West Highland White Terrier | Autosomal Recessive | Clear |
| Trapped Neutrophil Syndrome, (TNS) | Autosomal Recessive | Clear |
| Von Willebrand's Disease (vWD) Type 3; mutation originally found in Kooikerhondje | Autosomal Recessive | Clear |
| Von Willebrand's Disease (vWD) Type 3; mutation originally found in Shetland Sheepdog | Autosomal Recessive | Clear |

# Test results - Additional disorders found in other breeds - page 2

## Ocular Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Canine Multifocal Retinopathy 1, (CMR1); mutation originally found in Mastiff-related breeds | Autosomal Recessive | Clear |
| Canine Multifocal Retinopathy 2, (CMR2); mutation originally found in Coton de Tulear | Autosomal Recessive | Clear |
| Canine Multifocal Retinopathy 3, (CMR3); mutation originally found in Lapponian Herder | Autosomal Recessive | Clear |
| Cone Degeneration, (CD) or Achromatopsia; mutation originally found in German Shorthaired Pointer | Autosomal Recessive | Clear |
| Cone-Rod Dystrophy, (cord1-PRA / crd4) | Autosomal Recessive (Incomplete Penetrance) | Clear |
| Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD) | Autosomal Recessive | Clear |
| Dominant Progressive Retinal Atrophy, (DPRA) | Autosomal Dominant | Clear |
| Generalized Progressive Retinal Atrophy | Autosomal Recessive | Clear |
| Golden Retriever Progressive Retinal Atrophy 1, (GR_PRA 1) | Autosomal Recessive | Clear |
| Primary Hereditary Cataract, (PHC); mutation originally found in Australian Shepherd | Autosomal Dominant (Incomplete Penetrance) | Clear |
| Primary Lens Luxation, (PLL) | Autosomal Recessive | Clear |
| Primary Open Angle Glaucoma, (POAG); mutation originally found in Beagle | Autosomal Recessive | Clear |
| Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter | Autosomal Recessive | Clear |
| Rod-Cone Dysplasia 1a, (rdc1a); mutation originally found in Sloughi | Autosomal Recessive | Clear |
| Rod-Cone Dysplasia 3, (rcd3) | Autosomal Recessive | Clear |
| X-Linked Progressive Retinal Atrophy 1, (XLPRA1) | X-linked Recessive | Clear |
| X-Linked Progressive Retinal Atrophy 2, (XLPRA2; Type A PRA) | X-linked Recessive | No call |

# Test results - Additional disorders found in other breeds - page 3

## Endocrine Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Congenital Hypothyroidism; mutation originally found in Tenterfield Terrier | Autosomal Recessive | Clear |
| Congenital Hypothyroidism; mutation originally found in Toy Fox and Rat Terrier | Autosomal Recessive | Clear |

## Immunological Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Complement 3 (C3) Deficiency | Autosomal Recessive | Clear |
| X-Linked Severe Combined Immunodeficiency (XSCID); mutation originally found in Basset Hound | X-linked Recessive | Clear |
| X-Linked Severe Combined Immunodeficiency (XSCID); mutation originally found in Cardigan Welsh Corgi | X-linked Recessive | Clear |

## Renal Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Familial Nephropathy (FN); mutation originally found in English Cocker Spaniel | Autosomal Recessive | Clear |
| Familial Nephropathy (FN); mutation originally found in English Springer Spaniel | Autosomal Recessive | Clear |
| Hyperuricosuria, (HUU) | Autosomal Recessive | Clear |
| Polycystic Kidney Disease in Bull Terriers, (BTPKD) | Autosomal Dominant | Clear |
| Primary Hyperoxaluria, (PH); mutation originally found in Coton de Tulear | Autosomal Recessive | Clear |
| X-Linked Hereditary Nephropathy, (XLHN) | X-linked Recessive | Clear |

# Test results - Additional disorders found in other breeds - page 4

## Metabolic Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Glycogen Storage Disease Type II or Pompe's Disease, (GSD II) | Autosomal Recessive | Clear |
| Glycogen Storage Disease Type IIIa, (GSD IIIa) | Autosomal Recessive | Clear |
| Glycogen Storage Disease Type Ia, (GSD Ia) | Autosomal Recessive | Clear |
| Hypocatalasia or Acatalasemia | Autosomal Recessive | Clear |
| Mucopolysaccharidosis Type IIIA, (MPS IIIA); mutation originally found in Dachshund | Autosomal Recessive | Clear |
| Mucopolysaccharidosis Type VII, (MPS VII); mutation originally found in Brazilian Terrier | Autosomal Recessive | Clear |
| Pyruvate Dehydrogenase Phosphatase 1 (PDP1) Deficiency | Autosomal Recessive | Clear |

## Muscular Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Cavalier King Charles Spaniel Muscular Dystrophy, (CKCS-MD) | X-linked Recessive | Clear |
| Duchenne or Dystrophin Muscular Dystrophy, (DMD); mutation originally found in Golden Retriever | X-linked Recessive | Clear |
| Myotonia Congenita; mutation originally found in Miniature Schnauzer | Autosomal Recessive | Clear |
| X-Linked Myotubular Myopathy | X-linked Recessive | Clear |

# Test results - Additional disorders found in other breeds - page 5

## Neurological Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Bandera's Neonatal Ataxia, (BNAt) | Autosomal Recessive | No call |
| Benign Familial Juvenile Epilepsy or Remitting Focal Epilepsy | Autosomal Recessive | Clear |
| Early-Onset Progressive Polyneuropathy; mutation originally found in Alaskan Malamute | Autosomal Recessive | Clear |
| Early-Onset Progressive Polyneuropathy; mutation originally found in Greyhound | Autosomal Recessive | Clear |
| Fetal Onset Neuroaxonal Dystrophy, (FNAD) | Autosomal Recessive | Clear |
| Hyperekplexia or Startle Disease | Autosomal Recessive | Clear |
| L-2-Hydroxyglutaric aciduria, (L2HGA); mutation originally found in Staffordshire Bull Terrier | Autosomal Recessive | Clear |
| Neonatal Cerebellar Cortical Degeneration or Cerebellar Abiotrophy, (NCCD) | Autosomal Recessive | Clear |
| Neonatal Encephalopathy with Seizures, (NEWS) | Autosomal Recessive | Clear |
| Neuronal Ceroid Lipofuscinosis 1, (NCL1); mutation originally found in Dachshund | Autosomal Recessive | Clear |
| Neuronal Ceroid Lipofuscinosis 10, (NCL10); mutation originally found in American Bulldog | Autosomal Recessive | Clear |
| Neuronal Ceroid Lipofuscinosis 4A, (NCL4); mutation originally found in American Staffordshire Terrier | Autosomal Recessive | Clear |
| Neuronal Ceroid Lipofuscinosis 5, (NCL5); mutation originally found in Border Collie | Autosomal Recessive | Clear |
| Progressive Early-Onset Cerebellar Ataxia; mutation originally found in Finnish Hound | Autosomal Recessive | Clear |

## Test results - Additional disorders found in other breeds - page 6

### Neuromuscular Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| GM1 Gangliosidosis; mutation originally found in Alaskan Husky | Autosomal Recessive | Clear |
| GM1 Gangliosidosis; mutation originally found in Portuguese Water Dog | Autosomal Recessive | Clear |
| GM1 Gangliosidosis; mutation originally found in Shiba Dog | Autosomal Recessive | Clear |
| GM2 Gangliosidosis; mutation originally found in Toy Poodle | Autosomal Recessive | Clear |
| Globoid Cell Leukodystrophy or Krabbe Disease, (GLD); mutation originally found in Terriers | Autosomal Recessive | Clear |

### Skeletal Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Chondrodysplasia; mutation originally found in Norwegian Elkhound and Karelian Bear Dog | Autosomal Recessive | Clear |
| Craniomandibular Osteopathy, (CMO); mutation associated with terrier breeds | Autosomal Dominant (Incomplete Penetrance) | Clear |
| Osteogenesis Imperfecta, (OI); mutation originally found in Dachshund | Autosomal Recessive | Clear |
| Skeletal Dysplasia 2, (SD2) | Autosomal Recessive | Clear |

### Dermal Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Dystrophic Epidermolysis Bullosa; mutation originally found in Golden Retriever | Autosomal Recessive | Clear |
| Epidermolytic Hyperkeratosis | Autosomal Recessive | Clear |
| Golden Retriever Ichthyosis | Autosomal Recessive | Clear |
| Musladin-Lueke syndrome, (MLS) | Autosomal Recessive | Clear |

## Test results - Additional disorders found in other breeds - page 7

### Other Disorders

| Disorder | Mode of Inheritance | Result |
|---|---|---|
| Congenital Keratoconjunctivitis Sicca and Ichthyosiform Dermatosis, (CKCSID) | Autosomal Recessive | Clear |
| Narcolepsy; mutation originally found in Doberman Pinscher | Autosomal Recessive | Clear |
| Persistent Müllerian Duct Syndrome, (PMDS); mutation originally found in Miniature Schnauzer | Autosomal Recessive | Clear |
| Primary Ciliary Dyskinesia, (PCD) | Autosomal Recessive | Clear |

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# APPENDIX
# Explanation of the results of the tested disorders

Autosomal recessive inheritance (ARI)

Clear - A dog carries no copies of the tested mutation and has no or reduced likelihood of developing and passing on the disease/condition.
Carrier - A dog carries one copy of the tested mutation. Carriers typically have a normal, healthy appearance but pass on the mutation to approximately 50% of their offspring.
At risk - A dog carries two copies of the tested mutation and is at high or increased risk of developing the disease/condition.

Autosomal dominant inheritance (ADI)

Clear - A dog carries no copies of the tested mutation and has no or reduced likelihood of developing and passing on the disease/condition.
At risk - A dog carries one or two copies of the tested mutation and is at high or increased risk of developing the disease/condition.

X-linked recessive inheritance (X-linked)

Clear - A dog carries no copies of the tested mutation and has no or reduced likelihood of developing and passing on the disease/condition.
Carrier - Female carriers typically have a normal, healthy appearance but carry one copy of the tested mutation on one of their X chromosomes. As males only have one X chromosome, there are no male carriers.
At risk - Female dogs at risk carry two mutated copies of the tested mutation. Males carry one copy of the tested mutation on their single X chromosome. Dogs at risk are at high or increased risk of developing the disease/condition.

Please note that the descriptions above are generalized based on typically observed inheritance patterns. When obtaining a 'carrier' or 'at risk' test result, always refer to the corresponding online test documentation for more detailed information on the condition and any exceptions.

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