



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Registered Name: RIISTANKAUHUN AKARTTI

Owner: Heli Kantola

Nickname: Kartti

Country: Finland

Registration ID: FI15014/16

Testing date: 2017/6/30

Microchip: 981098104947153

Breed: Norwegian Elkhound, Grey

Gender: Female

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

Test results - Known disorders in the breed

| Disorder | Type | Mode of Inheritance | Result |
|---|--------------------|---------------------|--------|
| Chondrodysplasia; mutation originally found in Norwegian Elkhound and Karelian Bear Dog | Skeletal Disorders | Autosomal Recessive | Clear |
| Primary Open Angle Glaucoma, (POAG); mutation originally found in Norwegian Elkhound | Ocular Disorders | Autosomal Recessive | Clear |

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 Genoscooper Laboratories,

SIGNATURE

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



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Registered Name: RIISTANKAUHUN AKARTTI

Owner: Heli Kantola

Nickname: Kartti

Country: Finland

Registration ID: FI15014/16

Testing date: 2017/6/30

Microchip: 981098104947153

Breed: Norwegian Elkhound, Grey

Gender: Female

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

Test results - Traits - page 1

Coat Type

| Trait | Genotype | Description |
|--|----------|--|
| Coat Length | L/L | The dog is likely to have short-haired coat. |
| Furnishings / Improper Coat in Portuguese Water Dogs (marker test) | GG/CC | The dog is not genetically likely to express furnishings. |
| <i>KRT71</i> c.451C>T (p.Arg151Trp) | C/C | The dog does not carry any copies of the tested allele causing curly coat. The dog most likely has non-curly hair. |

On behalf of Genoscooper Laboratories,

SIGNATURE

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



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Registered Name: RIISTANKAUHUN AKARTTI

Owner: Heli Kantola

Nickname: Kartti

Country: Finland

Registration ID: FI15014/16

Testing date: 2017/6/30

Microchip: 981098104947153

Breed: Norwegian Elkhound, Grey

Gender: Female

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

Test results - Traits - page 2

Coat Colour

| Trait | Genotype | Description |
|--|----------------------|--|
| Colour Locus E - Extensions | Em/Em | The dog is likely to have a dark mask. |
| Colour Locus B - Brown | B/B B/bd bd/bd | The dog doesn't have any of the tested b alleles causing 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 S - Piebald or extreme white spotting | S/S | The dog is likely to have solid coat colour with minimal white. |
| Colour Locus H - Harlequin | h/h | The dog doesn't have harlequin pattern. |
| Merle (M allele) | m/m | The dog is genetically non-merle and does not carry a <i>SILV</i> gene SINE insertion. |
| Saddle Tan (<i>RALY</i> gene dupl.) | dup/dup | The dog may have tan points if it has tan point genotype at the A locus. |
| Albinism (caL-allele) | C/C | The dog does not carry the tested mutation for albinism. |

On behalf of Genoscooper Laboratories,

SIGNATURE

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



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Registered Name: RIISTANKAUHUN AKARTTI

Owner: Heli Kantola

Nickname: Kartti

Country: Finland

Registration ID: FI15014/16

Testing date: 2017/6/30

Microchip: 981098104947153

Breed: Norwegian Elkhound, Grey

Gender: Female

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

Test results - Traits - page 3

Body Size

| Trait | Genotype | Description |
|-------------------------------------|----------|--|
| <i>IGF1</i> (chr15:41221438) | A/A | The dog is homozygous for the derived allele typically associated with small body mass. |
| <i>IGF1R</i> c.611G>A (p.Arg204His) | G/G | The dog carries two ancestral alleles typically found in larger-sized breeds. |
| <i>FGF4</i> insertion | D/D | The dog is homozygous for the ancient allele. The dog is likely to have legs of normal length. |
| <i>STC2</i> (chr4:39182836) | T/T | The dog has two copies of the ancestral allele associated with larger body size. |
| <i>GHR1</i> (p.Glu191Lys) | A/G | The dog carries one ancestral allele and one derived allele. |
| <i>GHR2</i> (p.Pro177Leu) | C/C | The dog has two copies of the ancestral allele associated with larger body size. |
| <i>HMGA2</i> (chr10:8348804) | G/G | The dog has two copies of the ancestral allele associated with larger body size. |

On behalf of Genoscooper Laboratories,

SIGNATURE

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



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Registered Name: RIISTANKAUHUN AKARTTI

Owner: Heli Kantola

Nickname: Kartti

Country: Finland

Registration ID: FI15014/16

Testing date: 2017/6/30

Microchip: 981098104947153

Breed: Norwegian Elkhound, Grey

Gender: Female

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

Test results - Traits - page 4

Morphology

| Trait | Genotype | Description |
|-------------------------------------|----------|---|
| <i>BMP3</i> 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. |
| <i>T</i> 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 Genoscooper Laboratories,

SIGNATURE

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



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

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

Blood Disorders - page 1

| 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 |
| Canine Leukocyte Adhesion Deficiency (CLAD), type III | Autosomal Recessive | Clear |
| Canine Scott Syndrome, (CSS) | 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 Airedale Terrier | X-linked Recessive | Clear |
| Factor IX Deficiency or Hemophilia B; mutation originally found in German Wirehaired Pointer | X-linked Recessive | Clear |
| Factor IX Deficiency or Hemophilia B; mutation originally found in Lhasa Apso | X-linked Recessive | No call |
| Factor IX Deficiency or Hemophilia B; mutation originally found in Rhodesian Ridgeback | X-linked Recessive | Clear |
| Factor VII Deficiency | Autosomal Recessive | Clear |
| Factor VIII Deficiency or Hemophilia A; mutation originally found in Boxer | X-linked Recessive | Clear |
| Factor VIII Deficiency or Hemophilia A; mutation originally found in German Shepherd Dog | X-linked Recessive | Clear |
| Factor VIII Deficiency or Hemophilia A; p.Cys548Tyr mutation originally found in German Shepherd | X-linked Recessive | Clear |
| Factor XI Deficiency | Autosomal Dominant (Incomplete Penetrance) | Clear |
| Glanzmann Thrombasthenia Type I, (GT); mutation originally found in Pyrenean Mountain Dog | Autosomal Recessive | Clear |
| Hereditary Elliptocytosis | | Clear |
| Hereditary Phosphofructokinase (PFK) Deficiency | Autosomal Recessive | Clear |
| Macrothrombocytopenia; disease-linked variant originally found in Norfolk and Cairn Terrier | Autosomal Recessive | Clear |
| May-Hegglin Anomaly (MHA) | Autosomal Dominant | Clear |
| Prekallikrein Deficiency | Autosomal Recessive | Clear |
| Pyruvate Kinase Deficiency; mutation originally found in Basenji | Autosomal Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

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

Blood Disorders - page 2

| Disorder | Mode of Inheritance | Result |
|---|---------------------|--------|
| 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 |
| Thrombopathia; mutation originally found in Basset Hound | Autosomal Recessive | Clear |
| Thrombopathia; mutation originally found in Eskimo Spitz | Autosomal Recessive | Clear |
| Thrombopathia; mutation originally found in Landseer | Autosomal Recessive | Clear |
| Trapped Neutrophil Syndrome, (TNS) | Autosomal Recessive | Clear |
| Von Willebrand's Disease (vWD) Type 1 | 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 Scottish Terrier | Autosomal Recessive | Clear |
| Von Willebrand's Disease (vWD) Type 3; mutation originally found in Shetland Sheepdog | Autosomal Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

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

Ocular Disorders - page 1

| 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 Alaskan Malamute | Autosomal Recessive | Clear |
| Cone Degeneration, (CD) or Achromatopsia; mutation originally found in German Shepherd Dog | Autosomal Recessive | Clear |
| Cone Degeneration, (CD) or Achromatopsia; mutation originally found in German Shorthaired Pointer | Autosomal Recessive | Clear |
| Cone-Rod Dystrophy 1, (crd1); mutation originally found in American Staffordshire Terrier | Autosomal Recessive | Clear |
| Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bull Terrier | 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 |
| Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier | Autosomal Recessive | Clear |
| Progressive Retinal Atrophy, (CNGA1-PRA); mutation originally found in Shetland Sheepdog | Autosomal Recessive | Clear |
| Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Papillon and Phalene | Autosomal Recessive | Clear |
| Progressive Retinal Atrophy, (PRA); mutation originally found in Basenji | Autosomal Recessive | Clear |
| Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter | Autosomal Recessive | Clear |



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

Ocular Disorders - page 2

| Disorder | Mode of Inheritance | Result |
|--|---------------------|--------|
| 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 | Clear |

Cardiac Disorders

| Disorder | Mode of Inheritance | Result |
|------------------|---------------------|--------|
| Long QT Syndrome | Autosomal Dominant | Clear |

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 |
|--|---------------------|--------|
| Autosomal Recessive Severe Combined Immunodeficiency, (ARSCID) | Autosomal Recessive | Clear |
| Complement 3 (C3) Deficiency | Autosomal Recessive | Clear |
| Severe Combined Immunodeficiency in Frisian Water Dogs, (SCID) | 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 |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

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

Renal Disorders

| Disorder | Mode of Inheritance | Result |
|--|---------------------|--------|
| Cystinuria Type I-A; mutation originally found in Newfoundland Dog | Autosomal Recessive | Clear |
| Cystinuria Type II-A; mutation originally found in Australian Cattle Dog | Autosomal Dominant | Clear |
| Cystinuria, Type II-B; mutation originally found in Miniature Pinscher | Autosomal Dominant | Clear |
| 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 |
| Fanconi Syndrome | 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 |
| Protein Losing Nephropathy, (PLN); NPHS1 gene variant | | Clear |
| Renal Cystadenocarcinoma and Nodular Dermatofibrosis, (RCND) | Autosomal Dominant | Clear |
| X-Linked Hereditary Nephropathy, (XLHN) | X-linked Recessive | Clear |
| X-Linked Hereditary Nephropathy, (XLHN); mutation originally found in Navasota Dog | X-linked Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

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

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 Acatlasemia | Autosomal Recessive | Clear |
| Intestinal Cobalamin Malabsorption or Imerslund-Gräsbeck Syndrome, (IGS); mutation originally found in Beagle | Autosomal Recessive | Clear |
| Intestinal Cobalamin Malabsorption or Imerslund-Gräsbeck Syndrome, (IGS); mutation originally found in Border Collie | Autosomal Recessive | Clear |
| Mucopolysaccharidosis Type IIIA, (MPS IIIA); mutation originally found in Dachshund | Autosomal Recessive | Clear |
| Mucopolysaccharidosis Type IIIA, (MPS IIIA); mutation originally found in New Zealand Huntaway | Autosomal Recessive | Clear |
| Mucopolysaccharidosis Type VII, (MPS VII); mutation originally found in Brazilian Terrier | Autosomal Recessive | Clear |
| Mucopolysaccharidosis Type VII, (MPS VII); mutation originally found in German Shepherd | Autosomal Recessive | Clear |
| Pyruvate Dehydrogenase Phosphatase 1 (PDP1) Deficiency | Autosomal Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

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

Muscular Disorders

| Disorder | Mode of Inheritance | Result |
|---|---------------------|--------|
| Cavalier King Charles Spaniel Muscular Dystrophy, (CKCS-MD) | X-linked Recessive | Clear |
| Centronuclear Myopathy, (CNM); mutation originally found in Great Dane | Autosomal Recessive | Clear |
| Centronuclear Myopathy, (CNM); mutation originally found in Labrador Retriever | Autosomal Recessive | Clear |
| Duchenne or Dystrophin Muscular Dystrophy, (DMD); mutation originally found in Golden Retriever | X-linked Recessive | Clear |
| Duchenne or Dystrophin Muscular Dystrophy, (DMD); mutation originally found in Norfolk Terrier | X-linked Recessive | Clear |
| Muscular Dystrophy, Ullrich-type; mutation originally found in Landseer | Autosomal Recessive | Clear |
| Myostatin deficiency (Double Muscling, "Bully") | Autosomal Recessive | Clear |
| Myotonia Congenita; mutation originally found in Australian Cattle Dog | Autosomal Recessive | Clear |
| Myotonia Congenita; mutation originally found in Miniature Schnauzer | Autosomal Recessive | Clear |
| Myotubular Myopathy; mutation originally found in Rottweiler | X-linked Recessive | Clear |
| X-Linked Myotubular Myopathy | X-linked Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Test results - Additional disorders found in other breeds - page 8

Neurological Disorders - page 1

| Disorder | Mode of Inheritance | Result |
|---|---------------------|--------|
| Alaskan Husky Encephalopathy, (AHE) | Autosomal Recessive | Clear |
| Bandera's Neonatal Ataxia, (BNAt) | Autosomal Recessive | Clear |
| Benign Familial Juvenile Epilepsy or Remitting Focal Epilepsy | Autosomal Recessive | Clear |
| Cerebral Dysfunction; mutation originally found in Friesian Stabyhoun | Autosomal Recessive | Clear |
| Dandy-Walker-Like Malformation (DWLM); mutation originally found in Eurasier | 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 |
| Hereditary Ataxia or Cerebellar Ataxia; mutation originally found in Old English Sheepdog and Gordon Setter | Autosomal Recessive | Clear |
| Hyperekplexia or Startle Disease | Autosomal Recessive | Clear |
| Hypomyelination; mutation originally found in Weimaraner | Autosomal Recessive | Clear |
| L-2-Hydroxyglutaric aciduria, (L2HGA); mutation originally found in Staffordshire Bull Terrier | Autosomal Recessive | Clear |
| Lagotto Storage Disease, (LSD) | Autosomal Recessive | Clear |
| Neonatal Cerebellar Cortical Degeneration or Cerebellar Abiotrophy, (NCCD) | Autosomal Recessive | Clear |
| Neonatal Encephalopathy with Seizures, (NEWS) | Autosomal Recessive | Clear |
| Neuroaxonal Dystrophy (NAD); mutation originally found in Spanish Water Dog | 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 |
| Neuronal Ceroid Lipofuscinosis 8, (NCL8); mutation originally found in Australian Shepherd | Autosomal Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Test results - Additional disorders found in other breeds - page 9

Neurological Disorders - page 2

| Disorder | Mode of Inheritance | Result |
|--|---------------------|--------|
| Neuronal Ceroid Lipofuscinosis 8, (NCL8); mutation originally found in English Setter | Autosomal Recessive | Clear |
| Neuronal Ceroid Lipofuscinosis, (NCL7); mutation originally found in Chinese Crested Dog and Chihuahua | Autosomal Recessive | Clear |
| Progressive Early-Onset Cerebellar Ataxia; mutation originally found in Finnish Hound | Autosomal Recessive | Clear |
| Spinal Dysraphism | Autosomal Recessive | Clear |
| Spinocerebellar Ataxia with Myokymia and/or Seizures (SCA) | Autosomal Recessive | Clear |
| Spinocerebellar Ataxia/ Late-Onset Ataxia (SCA, LOA) | Autosomal Recessive | Clear |
| X-Linked Tremors; mutation originally found in English Springer Spaniel | X-linked Recessive | Clear |

Neuromuscular Disorders

| Disorder | Mode of Inheritance | Result |
|---|---------------------|--------|
| Congenital Myasthenic Syndrome (CMS); mutation originally found in Labrador Retriever | Autosomal Recessive | Clear |
| Congenital Myasthenic Syndrome, (CMS); mutation originally found in Jack Russell Terrier | Autosomal Recessive | Clear |
| Congenital Myasthenic Syndrome, (CMS); mutation originally found in Old Danish Pointing Dog | Autosomal Recessive | Clear |
| 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 Japanese Chin | 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 Irish Setter | Autosomal Recessive | Clear |
| Globoid Cell Leukodystrophy or Krabbe Disease, (GLD); mutation originally found in Terriers | Autosomal Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Test results - Additional disorders found in other breeds - page 10

Skeletal Disorders

| Disorder | Mode of Inheritance | Result |
|---|--|--------|
| Cleft Palate; Cleft Lip and Palate with Syndactyly; ADAMTS20 gene mutation originally found in Nova Scotia Duck Tolling Retriever | Autosomal Recessive | Clear |
| Cleft Palate; DLX6 gene mutation originally found in Nova Scotia Duck Tolling Retriever | Autosomal Recessive | Clear |
| Craniomandibular Osteopathy, (CMO); mutation associated with terrier breeds | Autosomal Dominant (Incomplete Penetrance) | Clear |
| Hereditary Vitamin D-Resistant Rickets, (HVDRR) | Autosomal Recessive | Clear |
| Oculoskeletal Dysplasia 2 or Dwarfism-Retinal Dysplasia 2, (OSD2) | Autosomal Recessive | Clear |
| Osteochondrodysplasia; mutation originally found in Miniature Poodle | Autosomal Recessive | Clear |
| Osteogenesis Imperfecta, (OI); mutation originally found in Beagle | Autosomal Dominant | Clear |
| Osteogenesis Imperfecta, (OI); mutation originally found in Dachshund | Autosomal Recessive | Clear |
| Skeletal Dysplasia 2, (SD2) | Autosomal Recessive | Clear |
| Spondylocostal Dysostosis | Autosomal Recessive | Clear |
| Van den Ende-Gupta Syndrome, (VDEGS) | Autosomal Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Test results - Additional disorders found in other breeds - page 11

Dermal Disorders

| Disorder | Mode of Inheritance | Result |
|--|---------------------|--------|
| Dystrophic Epidermolysis Bullosa; mutation originally found in Central Asian Ovcharka | Autosomal Recessive | Clear |
| Dystrophic Epidermolysis Bullosa; mutation originally found in Golden Retriever | Autosomal Recessive | Clear |
| Epidermolytic Hyperkeratosis | Autosomal Recessive | Clear |
| Focal Non-Epidermolytic Palmoplantar Keratoderma, (FNEPPK); mutation originally found in Dogue de Bordeaux | Autosomal Recessive | Clear |
| Golden Retriever Ichthyosis | Autosomal Recessive | Clear |
| Hereditary Footpad Hyperkeratosis, (HFH) | Autosomal Recessive | Clear |
| Ichthyosis; mutation originally found in Great Dane | Autosomal Recessive | Clear |
| Lamellar Ichthyosis, (LI) | Autosomal Recessive | Clear |
| Ligneous Membranitis | Autosomal Recessive | Clear |
| Musladin-Lueke syndrome, (MLS) | Autosomal Recessive | Clear |
| X-Linked Ectodermal Dysplasia, (XHED) | X-linked Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

Test results - Additional disorders found in other breeds - page 12

Other Disorders

| Disorder | Mode of Inheritance | Result |
|--|---------------------|--------|
| Amelogenesis Imperfecta, (AI); mutation originally found in Italian Greyhound | Autosomal Recessive | Clear |
| Congenital Keratoconjunctivitis Sicca and Ichthyosiform Dermatitis, (CKCSID) | Autosomal Recessive | Clear |
| Dental Hypomineralisation; mutation originally found in Border Collie | Autosomal Recessive | Clear |
| Narcolepsy; mutation originally found in Dachshund | Autosomal Recessive | Clear |
| Narcolepsy; mutation originally found in Doberman Pinscher | Autosomal Recessive | Clear |
| Narcolepsy; mutation originally found in Labrador Retriever | Autosomal Recessive | Clear |
| Persistent Müllerian Duct Syndrome, (PMDS); mutation originally found in Miniature Schnauzer | Autosomal Recessive | Clear |
| Primary Ciliary Dyskinesia, (PCD) | Autosomal Recessive | Clear |



8700 2590 4018

RIISTANKAUHUN AKARTTI, Norwegian Elkhound, Grey

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.

Genoscooper Laboratories - Legal Notice

Genoscooper Laboratories' services and test results are produced based on samples and materials supplied by the Client. Testing and analysis is performed by using methods and processes that Genoscooper Laboratories deems appropriate. Genoscooper Laboratories reserves the right to make changes in the collection of the single-gene tests included in the testing service as well as to remove results derived from them, if new information comes available that in any way questions the validity of the test results. Results provided by Genoscooper Laboratories are prepared solely for the use of the Client.

For further information, please visit: www.mydogdna.com/legal-notices
