



Nickname: Lennart Country: Finland

Registration ID: FI10208/16 Testing date: 2016/2/26

Microchip: 985141000958556

Breed: Cirneco dell´Etna

DNA Identified with standard identification ISAG 2006 markers profile:

Gender: Male

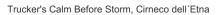
Dog's identity verified from microchip or tattoo by veterinarian or other authorised person during sample taking: Yes

# 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,

SIGNATURE





Country: Finland Nickname: Lennart Registration ID: FI10208/16 **Testing date:** 2016/2/26

Microchip: 985141000958556 **DNA** Identified with standard identification ISAG 2006 markers Breed: Cirneco dell'Etna profile:

Gender: Male

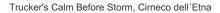
Dog's identity verified from microchip or tattoo by veterinarian or other authorised person during sample taking: Yes

# Test results - Traits - page 1

#### **Coat 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.
KRT71 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 Genoscoper Laboratories,





Nickname: Lennart Country: Finland

Registration ID: FI10208/16 Testing date: 2016/2/26

Microchip: 985141000958556

Breed: Cirneco dell´Etna

DNA Identified with standard identification ISAG 2006 markers profile:

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

#### **Coat Colour**

Trait	Genotype	Description
Colour Locus E - Extensions	e/e	The dog has recessive red coat colour.
Colour Locus B - Brown	b/b	The dog is likely to have brown pigment.
Colour Locus K - Dominant Black	KB/ky    KB/kbr    kbr/ky    kbr/kbr	The dog is genetically dominant black or brindle.
Colour Locus A - Agouti	ay/ay	The dog is genetically sable.
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.
Saddle Tan (RALY gene dupl.)	-/-	The dog may have saddle tan pattern if it has also tan point genotype at the A locus.

On behalf of Genoscoper Laboratories,

SIGNATURE





Nickname: Lennart Country: Finland

Registration ID: FI10208/16 Testing date: 2016/2/26

Microchip: 985141000958556

Breed: Cirneco dell´Etna

DNA Identified with standard identification ISAG 2006 markers profile:

Gender: Male

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
IGF1 (chr15:41221438)	A/G	The dog is heterozygous for the ancestral allele. This means that it carries one copy of the genetic allele typically associated with small body mass and one copy typically associated with large body mass.
IGF1R c.611G>A (p.Arg204His)	A/G	The dog carries one copy of the derived allele and one copy of the ancestral allele.
STC2 (chr4:39182836)	T/T	The dog has two copies of the ancestral allele associated with larger body size.
GHR1 (p.Glu191Lys)	G/G	The dog has two copies of the ancestral allele associated with larger body size.
GHR2 (p.Pro177Leu)	C/C	The dog has two copies of the ancestral allele associated with larger body size.
HMGA2 (chr10:8348804)	G/G	The dog has two copies of the ancestral allele associated with larger body size.

On behalf of Genoscoper Laboratories,

SIGNATURE





Nickname: Lennart Country: Finland

Registration ID: FI10208/16 Testing date: 2016/2/26

Microchip: 985141000958556

Breed: Cirneco dell´Etna

DNA Identified with standard identification ISAG 2006 markers profile:

Gender: Male

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
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.lle63Met)	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



### 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
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
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
Pyruvate Kinase Deficiency; mutation originally found in Beagle	Autosomal Recessive	Clear
Pyruvate Kinase Deficiency; mutation originally found in Pug	Autosomal Recessive	Clear



### Blood Disorders - page 2

Disorder	Mode of Inheritance	Result
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



### Ocular Disorders - page 1

Canine Multifocal Retinopathy 1, (CMR1); mutation originally found in Matifirelated breeds  Canine Multifocal Retinopathy 2, (CMR2); mutation originally found in Autosomal Recessive Clear Coton de Tulear  Canine Multifocal Retinopathy 3, (CMR3); mutation originally found in Autosomal Recessive Clear Lapponian Herder  Canine Multifocal Retinopathy 3, (CMR3); mutation originally found in Autosomal Recessive Clear Lapponian Herder  Cone Degeneration, (CD) or Achromatopsia; mutation originally found in Autosomal Recessive Clear German Shorthaired Pointer  Cone-Rod Dystrophy 1, (crd1); mutation originally found in American Autosomal Recessive Clear Staffordshire Terrier  Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bult Terrier  Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bult Terrier  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Autosomal Recessive Clear  Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD)  Autosomal Recessive Clear  Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD)  Autosomal Recessive Clear  Generalized Progressive Retinal Atrophy  Autosomal Recessive Clear  Golden Retriever Progressive Retinal Atrophy  Golden Retriever Progressive Retinal Atrophy 1, (GR_PRA 1)  Autosomal Recessive Clear  Primary Hereditary Cataract, (PHC); mutation originally found in Australian Shepherd  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Progressive Retinal Atrophy, (PRA); mutation originally found in Basenji Autosomal Recessive Clear  Progressive Retinal Atrophy, (PRA); mutation originally found in Basenji Autosomal Recessive Clear  Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Sloughi Autosomal Recessive Clear	Disorder	Mode of Inheritance	Result
Cotion de Tulear  Canine Multifocal Retinopathy 3, (CMR3); mutation originally found in Lapponian Herder  Cone Degeneration, (CD) or Achromatopsia; mutation originally found in Autosomal Recessive  Clear  Alaskan Malamute  Cone Degeneration, (CD) or Achromatopsia; mutation originally found in Autosomal Recessive  Clear  Cone Degeneration, (CD) or Achromatopsia; mutation originally found in Autosomal Recessive  Clear  Cone-Rod Dystrophy 1, (crd1); mutation originally found in American  Staffordshire Terrier  Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bull Terrier  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Autosomal Recessive  Clear  Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD)  Autosomal Recessive  Clear  Dominant Progressive Retinal Atrophy, (DPRA)  Autosomal Recessive  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  Primary Lens Luxation, (PLL)  Autosomal Recessive  Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in  Rowegian Elkhound  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in  Norwegian Elkhound  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Basenji  Autosomal Recessive  Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in  Bautosomal Recessive  Clear  Clear  Clear  Clear  Clear  Clear  Cone-Rod Dystrophy, (cord1-PRA (rd4))  Autosomal Recessive  Clear  Autosomal Recessive  Clear  Autosomal Recessive  Clear  Clear  Clear  Cone-Rod Dystrophy, (cord1-PRA); mutation originally found in  Autosomal Recessive  Clear  Clear  Clear  Clear  Clear  Cone-Rod Dystrophy, (PAP1_PRA); mutation originally found in Basenji  Autosomal Recessive  Clear  Clear  Clear  Clear  Clear  Cone-Rod Dystrophy  Clear  C		Autosomal Recessive	Clear
Lapponian Herder  Cone Degeneration, (CD) or Achromatopsia; mutation originally found in Autosomal Recessive Clear Alaskan Malamute  Cone Degeneration, (CD) or Achromatopsia; mutation originally found in Autosomal Recessive Clear German Shorthaired Pointer  Cone-Rod Dystrophy 1, (crd1); mutation originally found in American Autosomal Recessive Clear Staffordshire Terrier  Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bull Terrier  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD)  Autosomal Recessive 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 Autosomal Dominant Clear (Incomplete Penetrance)  Primary Lens Luxation, (PLL)  Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy, (PRA type III); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Basenji Autosomal Recessive Clear  Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter Autosomal Recessive Clear		Autosomal Recessive	Clear
Alaskan Malamute  Cone Degeneration, (CD) or Achromatopsia; mutation originally found in German Shorthaired Pointer  Cone-Rod Dystrophy 1, (crd1); mutation originally found in American Staffordshire Terrier  Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bull Terrier  Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bull Terrier  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Clear  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Autosomal Recessive Clear  Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD)  Autosomal Recessive Clear  Dominant Progressive Retinal Atrophy, (DPRA)  Autosomal Recessive 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 Autosomal Recessive Clear  Primary Lens Luxation, (PLL)  Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Beagle  Primary Open Angle Glaucoma, (POAG); mutation originally found in Norwegian Elkhound  Progressive Retinal Atrophy, Type III, (PRA type III); mutation originally  Autosomal Recessive Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Basenji  Autosomal Recessive Clear  Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter  Autosomal Recessive Clear	. , , , , , , , , , , , , , , , , , , ,	Autosomal Recessive	Clear
German Shorthaired Pointer  Cone-Rod Dystrophy 1, (crd1); mutation originally found in American Staffordshire Terrier  Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bull Terrier  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD)  Autosomal Recessive Clear  Dominant Progressive Retinal Atrophy, (DPRA)  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 Autosomal Dominant (Incomplete Penetrance)  Primary Lens Luxation, (PLL)  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Basenji Autosomal Recessive Clear  Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter Autosomal Recessive Clear		Autosomal Recessive	Clear
Staffordshire Terrier  Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bull Terrier  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Cone-Rod Dystrophy, (cord1-PRA / crd4)  Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD)  Autosomal Recessive Clear  Dominant Progressive Retinal Atrophy, (DPRA)  Autosomal Dominant Clear  Generalized Progressive Retinal Atrophy  Golden Retriever Progressive Retinal Atrophy 1, (GR_PRA 1)  Autosomal Recessive Clear  Primary Hereditary Cataract, (PHC); mutation originally found in Australian Autosomal Dominant (Incomplete Penetrance)  Primary Lens Luxation, (PLL)  Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally Autosomal Recessive Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy, (PRA); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy, (PRA); mutation originally found in 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		Autosomal Recessive	Clear
Bull Terrier  Cone-Rod Dystrophy, (cord1-PRA / crd4)  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  Primary Lens Luxation, (PLL)  Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Bustralian Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Shopherd  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally Autosomal Recessive Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in 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		Autosomal Recessive	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  Primary Lens Luxation, (PLL)  Autosomal Recessive  Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Beagle  Primary Open Angle Glaucoma, (POAG); mutation originally found in Norwegian Elkhound  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Progressive Retinal Atrophy, (PRA); mutation originally found in Basenji  Autosomal Recessive  Clear  Clear  Clear  Clear  Clear  Autosomal Recessive  Clear		Autosomal Recessive	Clear
Dominant Progressive Retinal Atrophy, (DPRA)  Generalized Progressive Retinal Atrophy  Golden Retriever Progressive Retinal Atrophy 1, (GR_PRA 1)  Autosomal Recessive  Clear  Primary Hereditary Cataract, (PHC); mutation originally found in Australian Shepherd  Primary Lens Luxation, (PLL)  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive  Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Basenji  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally  Autosomal Recessive  Clear  Clear  Clear  Clear  Autosomal Recessive  Clear  Clear  Clear  Clear  Clear  Clear  Autosomal Recessive  Clear	Cone-Rod Dystrophy, (cord1-PRA / crd4)		Clear
Generalized Progressive Retinal Atrophy  Golden Retriever Progressive Retinal Atrophy 1, (GR_PRA 1)  Autosomal Recessive  Clear  Primary Hereditary Cataract, (PHC); mutation originally found in Australian Autosomal Dominant (Incomplete Penetrance)  Primary Lens Luxation, (PLL)  Autosomal Recessive  Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Basenji  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Basenji  Progressive Retinal Atrophy, (PRA); mutation originally found in Basenji  Autosomal Recessive  Clear  Clear  Clear  Autosomal Recessive  Clear  Clear  Autosomal Recessive  Clear  Autosomal Recessive  Clear  Clear  Autosomal Recessive  Clear  Clear  Autosomal Recessive  Clear  Clear  Autosomal Recessive  Clear  Autosomal Recessive  Clear  Clear  Autosomal Recessive  Clear  Autosomal Recessive  Clear  Clear  Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter  Autosomal Recessive  Clear	Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD)	Autosomal Recessive	Clear
Golden Retriever Progressive Retinal Atrophy 1, (GR_PRA 1)  Autosomal Recessive  Clear  Primary Hereditary Cataract, (PHC); mutation originally found in Australian Autosomal Dominant (Incomplete Penetrance)  Primary Lens Luxation, (PLL)  Autosomal Recessive  Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Beagle  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive  Clear  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive  Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive  Clear  Progressive Retinal Atrophy, (PRA); mutation originally found in Basenji  Autosomal Recessive  Clear  Clear  Autosomal Recessive  Clear  Clear  Clear  Autosomal Recessive  Clear  Clear  Clear  Clear  Autosomal Recessive  Clear  Clear  Clear  Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter  Autosomal Recessive  Clear	Dominant Progressive Retinal Atrophy, (DPRA)	Autosomal Dominant	Clear
Primary Hereditary Cataract, (PHC); mutation originally found in Australian Autosomal Dominant (Incomplete Penetrance)  Primary Lens Luxation, (PLL)  Autosomal Recessive  Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Basenji  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive  Clear  Clear  Autosomal Recessive  Clear  Clear  Clear  Autosomal Recessive  Clear  Clear  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in 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	Generalized Progressive Retinal Atrophy	Autosomal Recessive	Clear
Shepherd (Incomplete Penetrance)  Primary Lens Luxation, (PLL) Autosomal Recessive Clear  Primary Open Angle Glaucoma, (POAG); mutation originally found in Beagle  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive Clear  Norwegian Elkhound  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Papillon and Phalene  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	Golden Retriever Progressive Retinal Atrophy 1, (GR_PRA 1)	Autosomal Recessive	Clear
Primary Open Angle Glaucoma, (POAG); mutation originally found in Beagle  Primary Open Angle Glaucoma, (POAG); mutation originally found in Autosomal Recessive  Clear Norwegian Elkhound  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive  Clear Papillon and Phalene  Progressive Retinal Atrophy, (PRA); mutation originally found in Basenji  Autosomal Recessive  Clear Clear Clear Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter  Autosomal Recessive  Clear Cle			Clear
Beagle  Primary Open Angle Glaucoma, (POAG); mutation originally found in Norwegian Elkhound  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive  Clear Papillon and Phalene  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	Primary Lens Luxation, (PLL)	Autosomal Recessive	Clear
Norwegian Elkhound  Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Autosomal Recessive Clear Papillon and Phalene  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		Autosomal Recessive	Clear
found in Tibetan Spaniel and Tibetan Terrier  Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in 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		Autosomal Recessive	Clear
Papillon and Phalene  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		Autosomal Recessive	Clear
Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter Autosomal Recessive Clear		Autosomal Recessive	Clear
	Progressive Retinal Atrophy, (PRA); mutation originally found in Basenji	Autosomal Recessive	Clear
Rod-Cone Dysplasia 1a, (rdc1a); mutation originally found in Sloughi 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



### Ocular Disorders - page 2

Disorder	Mode of Inheritance	Result
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

#### **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



#### **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
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	No call



#### **Metabolic Disorders**

Autosomal Recessive Autosomal Recessive Autosomal Recessive Autosomal Recessive	Clear Clear
Autosomal Recessive	Clear
Autosomal Recessive	01
	Clear
Autosomal Recessive	Clear
	Autosomal Recessive  Autosomal Recessive  Autosomal Recessive  Autosomal Recessive  Autosomal Recessive  Autosomal Recessive



#### **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
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
X-Linked Myotubular Myopathy	X-linked Recessive	Clear



### 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
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
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
Neuronal Ceroid Lipofuscinosis 8, (NCL8); mutation originally found in English Setter	Autosomal Recessive	Clear
Progressive Early-Onset Cerebellar Ataxia; mutation originally found in Finnish Hound	Autosomal Recessive	No call
Spinal Dysraphism	Autosomal Recessive	Clear



### Neurological Disorders - page 2

Disorder	Mode of Inheritance	Result
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 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



#### **Skeletal Disorders**

Disorder	Mode of Inheritance	Result
Chondrodysplasia; mutation originally found in Norwegian Elkhound and Karelian Bear Dog	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

#### **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
Hereditary Footpad Hyperkeratosis, (HFH)	Autosomal Recessive	Clear
Lamellar Ichthyosis, (LI)	Autosomal Recessive	Clear
Musladin-Lueke syndrome, (MLS)	Autosomal Recessive	Clear
X-Linked Ectodermal Dysplasia, (XHED)	X-linked Recessive	Clear



#### **Other Disorders**

Disorder	Mode of Inheritance	Result
Amelogenesis Imperfecta, (AI); mutation originally found in Italian Greyhound	Autosomal Recessive	Clear
Congenital Keratoconjunctivitis Sicca and Ichthyosiform Dermatosis, (CKCSID)	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



# 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.

### Genoscoper Laboratories - Legal Notice

Genoscoper 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 Genoscoper Laboratories deems appropriate. Genoscoper 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 Genoscoper Laboratories are prepared solely for the use of the Client. For further information, please visit: <a href="https://www.mydogdna.com/legal-notices">www.mydogdna.com/legal-notices</a>