

Kemi Mae  
Registration: ER27652/16  
Breed: Border Collie

Sample ID: DXKHKFH  
Test Date: 30.1.2021  
MyDogDNA

# DNA Test Report

## Owner Info

---

**First Name**

Maarit

**Last Name**

Kyöstilä

## Pet Info

---

**Registered Name**

Kemi Mae

**Date of Birth**

2.11.2015

**Nickname (Call Name)**

Kemi Mae

**Sample ID**

DXKHKFH

**Sex**

Female

**Registration**

ER27652/16

**Country of Origin**

GB

**Microchip ID**

900032002965630

**Owner Reported Breed**

Border Collie

**Tattoo ID**

N/A

# DNA Test Report

## Health Conditions Known in This Breed

| Genetic Condition  | Gene       | Risk Variant     | Copies   | Result         |
|--|------------|------------------|----------|----------------|
| Early Adult Onset Deafness For Border Collies only (Linkage test)    | Pending    | <b>Insertion</b> | <b>1</b> | <b>Notable</b> |
| Collie Eye Anomaly (CEA)   | NHEJ1      | Deletion         | 0        | Clear          |
| Dental Hypomineralization  | FAM20C     | C>T              | 0        | Clear          |
| Goniodysgenesis and Glaucoma (Discovered in the Border Collie)       | OLFML3     | G>A              | 0        | Clear          |
| Intestinal Cobalamin Malabsorption (Discovered in the Border Collie) | CUBN       | Deletion         | 0        | Clear          |
| MDR1 Medication Sensitivity  | MDR1/ABCB1 | Deletion         | 0        | Clear          |
| Sensory Neuropathy   | FAM134B    | Insertion        | 0        | Clear          |
| Trapped Neutrophil Syndrome  | VPS13B     | Deletion         | 0        | Clear          |

## Other Conditions Tested

| Genetic Condition                                     | Gene    | Risk Variant | Copies | Result |
|---|---------|--------------|--------|--------|
| 2,8-dihydroxyadenine (DHA) Urolithiasis               | APRT    | G>A          | 0      | Clear  |
| Acral Mutilation Syndrome                             | GDNF    | C>T          | 0      | Clear  |
| Acute Respiratory Distress Syndrome                   | ANLN    | C>T          | 0      | Clear  |
| Alaskan Husky Encephalopathy                          | SLC19A3 | G>A          | 0      | Clear  |
| Alexander Disease                                     | GFAP    | G>A          | 0      | Clear  |
| Amelogenesis Imperfecta                               | ENAM    | Deletion     | 0      | Clear  |
| Bandera's Neonatal Ataxia                             | GRM1    | Insertion    | 0      | Clear  |
| Benign Familial Juvenile Epilepsy                     | LGI2    | A>T          | 0      | Clear  |
| Canine Leukocyte Adhesion Deficiency (CLAD), type III | FERMT3  | Insertion    | 0      | Clear  |
| Canine Multifocal Retinopathy 1                       | BEST1   | C>T          | 0      | Clear  |
| Canine Multifocal Retinopathy 2                       | BEST1   | G>A          | 0      | Clear  |
| Canine Multifocal Retinopathy 3                       | BEST1   | Deletion     | 0      | Clear  |

# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition  | Gene     | Risk Variant | Copies | Result |
|--|----------|--------------|--------|--------|
| Canine Scott Syndrome  | ANO6     | G>A          | 0      | Clear  |
| Centronuclear Myopathy (Discovered in the Great Dane)                              | BIN1     | A>G          | 0      | Clear  |
| Centronuclear Myopathy (Discovered in the Labrador Retriever)                      | PTPLA    | Insertion    | 0      | Clear  |
| Cerebellar Ataxia  | RAB24    | A>C          | 0      | Clear  |
| Cerebellar Cortical Degeneration   | SNX14    | C>T          | 0      | Clear  |
| Cerebellar Hypoplasia  | VLDLR    | Deletion     | 0      | Clear  |
| Cerebral Dysfunction   | SLC6A3   | G>A          | 0      | Clear  |
| Chondrodysplasia   | ITGA10   | C>T          | 0      | Clear  |
| Cleft Lip & Palate with Syndactyly   | ADAMTS20 | Deletion     | 0      | Clear  |
| Cleft Palate   | DLX6     | C>A          | 0      | Clear  |
| Complement 3 Deficiency  | C3       | Deletion     | 0      | Clear  |
| Cone Degeneration (Discovered in the Alaskan Malamute)                             | CNGB3    | Deletion     | 0      | Clear  |
| Cone Degeneration (Discovered in the German Shepherd Dog)                          | CNGA3    | C>T          | 0      | Clear  |
| Cone Degeneration (Discovered in the German Shorthaired Pointer)                   | CNGB3    | G>A          | 0      | Clear  |
| Cone-Rod Dystrophy   | NPHP4    | Deletion     | 0      | Clear  |
| Cone-Rod Dystrophy 1   | PDE6B    | Deletion     | 0      | Clear  |
| Cone-Rod Dystrophy 2   | IQCB1    | Insertion    | 0      | Clear  |
| Congenital Dyshormonogenic Hypothyroidism with Goiter (Discovered in the Shih Tzu) | SLC5A5   | G>A          | 0      | Clear  |
| Congenital Hypothyroidism (Discovered in the Tenterfield Terrier)                  | TPO      | C>T          | 0      | Clear  |
| Congenital Hypothyroidism (Discovered in the Toy Fox and Rat Terrier)              | TPO      | C>T          | 0      | Clear  |
| Congenital Myasthenic Syndrome (Discovered in the Golden Retriever)                | COLQ     | G>A          | 0      | Clear  |
| Congenital Myasthenic Syndrome (Discovered in the Jack Russell Terrier)            | CHRNE    | Insertion    | 0      | Clear  |

# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition   | Gene    | Risk Variant | Copies | Result |
|---|---------|--------------|--------|--------|
| Congenital Myasthenic Syndrome (Discovered in the Labrador Retriever)       | COLQ    | T>C          | 0      | Clear  |
| Congenital Myasthenic Syndrome (Discovered in the Old Danish Pointer)       | CHAT    | G>A          | 0      | Clear  |
| Congenital Stationary Night Blindness (CSNB)                                | RPE65   | A>T          | 0      | Clear  |
| Cranio-mandibular Osteopathy  | SLC37A2 | C>T          | 0      | Clear  |
| Cystic Renal Dysplasia and Hepatic Fibrosis                                 | INPP5E  | G>A          | 0      | Clear  |
| Cystinuria Type I-A   | SLC3A1  | C>T          | 0      | Clear  |
| Cystinuria Type II-A  | SLC3A1  | Deletion     | 0      | Clear  |
| Deafness and Vestibular Dysfunction (Discovered in Doberman Pinscher)       | PTPRQ   | Insertion    | 0      | Clear  |
| Degenerative Myelopathy   | SOD1    | G>A          | 0      | Clear  |
| Demyelinating Neuropathy  | SBF2    | G>T          | 0      | Clear  |
| Dilated Cardiomyopathy (Discovered in the Schnauzer)                        | Pending | Deletion     | 0      | Clear  |
| Dominant Progressive Retinal Atrophy  | RHO     | C>G          | 0      | Clear  |
| Dystrophic Epidermolysis Bullosa (Discovered in the Central Asian Ovcharka) | COL7A1  | C>T          | 0      | Clear  |
| Dystrophic Epidermolysis Bullosa (Discovered in the Golden Retriever)       | COL7A1  | C>T          | 0      | Clear  |
| Early Retinal Degeneration (Discovered in the Norwegian Elkhound)           | STK38L  | A>C          | 0      | Clear  |
| Early-onset PRA (Discovered in the Portuguese Water Dog)                    | CCDC66  | Insertion    | 0      | Clear  |
| Early-Onset Progressive Polyneuropathy (Discovered in the Alaskan Malamute) | NDRG1   | G>T          | 0      | Clear  |
| Early-Onset Progressive Polyneuropathy (Discovered in the Greyhound)        | NDRG1   | Deletion     | 0      | Clear  |
| Enamel Hypoplasia (Discovered in the Parson Russell Terrier)                | ENAM    | C>T          | 0      | Clear  |
| Epidermolytic Hyperkeratosis  | KRT10   | G>T          | 0      | Clear  |
| Exercise-Induced Collapse   | DNM1    | G>T          | 0      | Clear  |
| Factor VII Deficiency   | F7      | G>A          | 0      | Clear  |

# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition   | Gene   | Risk Variant | Copies | Result |
|---|--------|--------------|--------|--------|
| Factor XI Deficiency  | FXI    | Insertion    | 0      | Clear  |
| Fanconi Syndrome  | FAN1   | Deletion     | 0      | Clear  |
| Fetal Onset Neuroaxonal Dystrophy                                       | MFN2   | G>C          | 0      | Clear  |
| Focal Non-Epidermolytic Palmoplantar Keratoderma                        | KRT16  | G>C          | 0      | Clear  |
| Generalized Progressive Retinal Atrophy (Discovered in the Schapendoes) | CCDC66 | Insertion    | 0      | Clear  |
| Glanzmann Thrombasthenia Type I   | ITGA2B | C>T          | 0      | Clear  |
| Glanzmann Thrombasthenia Type I (Discovered in Great Pyrenees)          | ITGA2B | C>G          | 0      | Clear  |
| Globoid Cell Leukodystrophy (Discovered in Terriers)                    | GALC   | A>C          | 0      | Clear  |
| Globoid Cell Leukodystrophy (Discovered in the Irish Setter)            | GALC   | A>T          | 0      | Clear  |
| Glycogen Storage Disease Type Ia  | G6PC   | G>C          | 0      | Clear  |
| Glycogen Storage Disease Type IIIa, (GSD IIIa)                          | AGL    | Deletion     | 0      | Clear  |
| GM1 Gangliosidosis (Discovered in the Portuguese Water Dog)             | GLB1   | G>A          | 0      | Clear  |
| GM1 Gangliosidosis (Discovered in the Shiba)                            | GLB1   | Deletion     | 0      | Clear  |
| GM2 Gangliosidosis (Discovered in the Japanese Chin)                    | HEXA   | G>A          | 0      | Clear  |
| GM2 Gangliosidosis (Discovered in the Toy Poodle)                       | HEXB   | Deletion     | 0      | Clear  |
| Hemophilia A (Discovered in Old English Sheepdog)                       | FVIII  | C>T          | 0      | Clear  |
| Hemophilia A (Discovered in the Boxer)                                  | FVIII  | C>G          | 0      | Clear  |
| Hemophilia A (Discovered in the German Shepherd Dog - Variant 1)        | FVIII  | G>A          | 0      | Clear  |
| Hemophilia A (Discovered in the German Shepherd Dog - Variant 2)        | FVIII  | G>A          | 0      | Clear  |
| Hemophilia A (Discovered in the Havanese)                               | FVIII  | Insertion    | 0      | Clear  |
| Hemophilia B  | FIX    | G>A          | 0      | Clear  |
| Hemophilia B (Discovered in the Airedale Terrier)                       | FIX    | A>T          | 0      | Clear  |

# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition  | Gene     | Risk Variant | Copies | Result |
|--|----------|--------------|--------|--------|
| Hemophilia B (Discovered in the Lhasa Apso)                        | FIX      | Deletion     | 0      | Clear  |
| Hereditary Ataxia (Discovered in the Norwegian Buhund)             | KCNIP4   | T>C          | 0      | Clear  |
| Hereditary Elliptocytosis  | SPTB     | C>T          | 0      | Clear  |
| Hereditary Footpad Hyperkeratosis                                  | FAM83G   | G>C          | 0      | Clear  |
| Hereditary Nasal Parakeratosis (Discovered in the Greyhound)       | SUV39H2  | Deletion     | 0      | Clear  |
| Hereditary Vitamin D-Resistant Rickets Type II                     | VDR      | Deletion     | 0      | Clear  |
| Hyperekplexia or Startle Disease                                   | SLC6A5   | G>T          | 0      | Clear  |
| Hyperuricosuria  | SLC2A9   | G>T          | 0      | Clear  |
| Hypocatalasia  | CAT      | G>A          | 0      | Clear  |
| Hypomyelination  | FNIP2    | Deletion     | 0      | Clear  |
| Hypophosphatasia   | Pending  | T>G          | 0      | Clear  |
| Ichthyosis (Discovered in the American Bulldog)                    | NIPAL4   | Deletion     | 0      | Clear  |
| Ichthyosis (Discovered in the Great Dane)                          | SLC27A4  | G>A          | 0      | Clear  |
| Intestinal Cobalamin Malabsorption (Discovered in the Beagle)      | CUBN     | Deletion     | 0      | Clear  |
| Intestinal Cobalamin Malabsorption (Discovered in the Komondor)    | CUBN     | G>A          | 0      | Clear  |
| Juvenile Encephalopathy (Discovered in the Parson Russell Terrier) | Pending  | Deletion     | 0      | Clear  |
| Juvenile Laryngeal Paralysis and Polyneuropathy                    | RAB3GAP1 | Deletion     | 0      | Clear  |
| Juvenile Myoclonic Epilepsy  | DIRAS1   | Deletion     | 0      | Clear  |
| L-2-Hydroxyglutaric Aciduria                                       | L2HGDH   | T>C          | 0      | Clear  |
| L-2-Hydroxyglutaric Aciduria (Discovered in the Westie)            | Pending  | Insertion    | 0      | Clear  |
| Lagotto Storage Disease  | ATG4D    | G>A          | 0      | Clear  |
| Lamellar Ichthyosis  | TGM1     | Insertion    | 0      | Clear  |

# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition  | Gene       | Risk Variant | Copies | Result |
|--|------------|--------------|--------|--------|
| Lethal Acrodermatitis (Discovered in the Bull Terrier)                   | MKLN1      | A>C          | 0      | Clear  |
| Ligneous Membranitis   | PLG        | T>A          | 0      | Clear  |
| Lung Developmental Disease (Discovered in the Airedale Terrier)          | LAMP3      | C>T          | 0      | Clear  |
| Macrothrombocytopenia  | TUBB1      | G>A          | 0      | Clear  |
| May-Hegglin Anomaly  | MYH9       | G>A          | 0      | Clear  |
| Microphthalmia (Discovered in the Soft-Coated Wheaten Terrier)           | RBP4       | Deletion     | 0      | Clear  |
| Mucopolysaccharidosis Type IIIA (Discovered in the Dachshund)            | SGSH       | C>A          | 0      | Clear  |
| Mucopolysaccharidosis Type IIIA (Discovered in the New Zealand Huntaway) | SGSH       | Insertion    | 0      | Clear  |
| Mucopolysaccharidosis Type VII (Discovered in the Brazilian Terrier)     | GUSB       | C>T          | 0      | Clear  |
| Mucopolysaccharidosis Type VII (Discovered in the German Shepherd Dog)   | GUSB       | G>A          | 0      | Clear  |
| Muscular Dystrophy (Discovered in the Cavalier King Charles Spaniel)     | Dystrophin | G>T          | 0      | Clear  |
| Muscular Dystrophy (Discovered in the Golden Retriever)                  | Dystrophin | A>G          | 0      | Clear  |
| Muscular Dystrophy (Discovered in the Landseer)                          | COL6A1     | G>T          | 0      | Clear  |
| Muscular Dystrophy (Discovered in the Norfolk Terrier)                   | Dystrophin | Deletion     | 0      | Clear  |
| Muscular Hypertrophy (Double Muscling)                                   | MSTN       | T>A          | 0      | Clear  |
| Musladin-Lueke Syndrome  | ADAMTSL2   | C>T          | 0      | Clear  |
| Myeloperoxidase Deficiency   | MOP        | C>T          | 0      | Clear  |
| Myotonia Congenita   | CLCN1      | Insertion    | 0      | Clear  |
| Myotonia Congenita (Discovered in the Labrador Retriever)                | CLCN1      | T>A          | 0      | Clear  |
| Myotonia Congenita (Discovered in the Miniature Schnauzer)               | CLCN1      | C>T          | 0      | Clear  |
| Myotubular Myopathy  | MTM1       | A>C          | 0      | Clear  |
| Narcolepsy (Discovered in the Dachshund)                                 | HCRTR2     | G>A          | 0      | Clear  |

# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition   | Gene     | Risk Variant | Copies | Result |
|---|----------|--------------|--------|--------|
| Narcolepsy (Discovered in the Labrador Retriever)                           | HCRTR2   | G>A          | 0      | Clear  |
| Nemaline Myopathy   | NEB      | C>A          | 0      | Clear  |
| Neonatal Cerebellar Cortical Degeneration                                   | SPTBN2   | Deletion     | 0      | Clear  |
| Neonatal Encephalopathy with Seizures                                       | ATF2     | T>G          | 0      | Clear  |
| Neuroaxonal Dystrophy   | TECPR2   | C>T          | 0      | Clear  |
| Neuroaxonal Dystrophy (Discovered in the Papillon)                          | PLA2G6   | G>A          | 0      | Clear  |
| Neuroaxonal Dystrophy (Discovered in the Rottweiler)                        | VPS11    | A>G          | 0      | Clear  |
| Neuronal Ceroid Lipofuscinosis 1  | PPT1     | Insertion    | 0      | Clear  |
| Neuronal Ceroid Lipofuscinosis 12 (Discovered in the Australian Cattle Dog) | ATP13A2  | C>T          | 0      | Clear  |
| Neuronal Ceroid Lipofuscinosis 7  | MFSD8    | Deletion     | 0      | Clear  |
| Neuronal Ceroid Lipofuscinosis 8 (Discovered in the Alpine Dachsbracke)     | CLN8     | Deletion     | 0      | Clear  |
| Neuronal Ceroid Lipofuscinosis 8 (Discovered in the Australian Shepherd)    | CLN8     | G>A          | 0      | Clear  |
| Neuronal Ceroid Lipofuscinosis 8 (Discovered in the English Setter)         | CLN8     | T>C          | 0      | Clear  |
| Neuronal Ceroid Lipofuscinosis 8 (Discovered in the Saluki)                 | CLN8     | Insertion    | 0      | Clear  |
| Osteochondrodysplasia   | SLC13A1  | Deletion     | 0      | Clear  |
| Osteochondromatosis (Discovered in the American Staffordshire Terrier)      | EXT2     | C>A          | 0      | Clear  |
| Osteogenesis Imperfecta (Discovered in the Beagle)                          | COL1A2   | C>T          | 0      | Clear  |
| Osteogenesis Imperfecta (Discovered in the Dachshund)                       | SERPINH1 | T>C          | 0      | Clear  |
| P2RY12-associated Bleeding Disorder   | P2RY12   | Deletion     | 0      | Clear  |
| Paroxysmal Dyskinesia   | PIGN     | C>T          | 0      | Clear  |
| Persistent Müllerian Duct Syndrome  | AMHR2    | C>T          | 0      | Clear  |
| Phosphofruktokinase Deficiency  | PFKM     | G>A          | 0      | Clear  |



# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition  | Gene     | Risk Variant | Copies | Result |
|--|----------|--------------|--------|--------|
| Polycystic Kidney Disease  | PKD1     | G>A          | 0      | Clear  |
| Prekallikrein Deficiency   | KLKB1    | T>A          | 0      | Clear  |
| Primary Ciliary Dyskinesia   | CCDC39   | C>T          | 0      | Clear  |
| Primary Ciliary Dyskinesia (Discovered in the Alaskan Malamute)                    | NME5     | Deletion     | 0      | Clear  |
| Primary Lens Luxation  | ADAMTS17 | G>A          | 0      | Clear  |
| Primary Open Angle Glaucoma (Discovered in Basset Fauve de Bretagne)               | ADAMTS17 | G>A          | 0      | Clear  |
| Primary Open Angle Glaucoma (Discovered in Petit Basset Griffon Vendeen)           | ADAMTS17 | Insertion    | 0      | Clear  |
| Primary Open Angle Glaucoma and Lens Luxation (Discovered in Chinese Shar-Pei)     | ADAMTS17 | Deletion     | 0      | Clear  |
| Progressive Early-Onset Cerebellar Ataxia  | SEL1L    | T>C          | 0      | Clear  |
| Progressive Retinal Atrophy (Discovered in the Basenji)                            | SAG      | T>C          | 0      | Clear  |
| Progressive Retinal Atrophy (Discovered in the Golden Retriever - GR-PRA1 variant) | SLC4A3   | Insertion    | 0      | Clear  |
| Progressive Retinal Atrophy (Discovered in the Lhasa Apso)                         | Pending  | Insertion    | 0      | Clear  |
| Progressive Retinal Atrophy (Discovered in the Papillon and Phalène)               | CNGB1    | Deletion     | 0      | Clear  |
| Progressive Retinal Atrophy (Discovered in the Shetland Sheepdog - BBS2 variant)   | Pending  | G>C          | 0      | Clear  |
| Progressive Retinal Atrophy (Discovered in the Shetland Sheepdog - CNGA1 variant)  | CNGA1    | Deletion     | 0      | Clear  |
| Progressive Retinal Atrophy (Discovered in the Swedish Vallhund)                   | MERTK    | Insertion    | 0      | Clear  |
| Progressive Retinal Atrophy 1 (Discovered in the Italian Greyhound)                | Pending  | G>A          | 0      | Clear  |
| Progressive Retinal Atrophy Type III   | FAM161A  | Insertion    | 0      | Clear  |
| Progressive Rod Cone Degeneration (prcd-PRA)                                       | PRCD     | G>A          | 0      | Clear  |
| Protein Losing Nephropathy   | NPHS1    | G>A          | 0      | Clear  |
| Pyruvate Dehydrogenase Phosphatase 1 Deficiency                                    | PDP1     | C>T          | 0      | Clear  |

# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition   | Gene    | Risk Variant | Copies | Result |
|---|---------|--------------|--------|--------|
| Pyruvate Kinase Deficiency (Discovered in the Basenji)                      | PKLR    | Deletion     | 0      | Clear  |
| Pyruvate Kinase Deficiency (Discovered in the Beagle)                       | PKLR    | G>A          | 0      | Clear  |
| Pyruvate Kinase Deficiency (Discovered in the Pug)                          | PKLR    | T>C          | 0      | Clear  |
| Pyruvate Kinase Deficiency (Discovered in the West Highland White Terrier)  | PKLR    | Insertion    | 0      | Clear  |
| QT Syndrome   | KCNQ1   | C>A          | 0      | Clear  |
| Renal Cystadenocarcinoma and Nodular Dermatofibrosis                        | FLCN    | A>G          | 0      | Clear  |
| Rod-Cone Dysplasia 1  | PDE6B   | G>A          | 0      | Clear  |
| Rod-Cone Dysplasia 1a   | PDE6B   | Insertion    | 0      | Clear  |
| Rod-Cone Dysplasia 3  | PDE6A   | Deletion     | 0      | Clear  |
| Sensory Ataxic Neuropathy   | tRNATyr | Deletion     | 0      | Clear  |
| Severe Combined Immunodeficiency  | PRKDC   | G>T          | 0      | Clear  |
| Severe Combined Immunodeficiency (Discovered in Frisian Water Dogs)         | RAG1    | G>T          | 0      | Clear  |
| Shaking Puppy Syndrome (Discovered in the Border Terrier)                   | Pending | G>A          | 0      | Clear  |
| Skeletal Dysplasia 2  | COL11A2 | G>C          | 0      | Clear  |
| Spinocerebellar Ataxia (Late-Onset Ataxia)                                  | CAPN1   | G>A          | 0      | Clear  |
| Spinocerebellar Ataxia with Myokymia and/or Seizures                        | KCNJ10  | C>G          | 0      | Clear  |
| Spondylocostal Dysostosis   | HES7    | Deletion     | 0      | Clear  |
| Spongy Degeneration with Cerebellar Ataxia                                  | SDCA1   | T>C          | 0      | Clear  |
| Spongy Degeneration with Cerebellar Ataxia (Discovered in Belgian Malinois) | ATP1B2  | Insertion    | 0      | Clear  |
| Stargardt Disease (Discovered in the Labrador Retriever)                    | ABCA4   | Insertion    | 0      | Clear  |
| Van den Ende-Gupta Syndrome   | SCARF2  | Deletion     | 0      | Clear  |
| von Willebrand's Disease, type 1  | VWF     | G>A          | 0      | Clear  |

# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition  | Gene    | Risk Variant | Copies | Result |
|--|---------|--------------|--------|--------|
| von Willebrand's Disease, type 2   | VWF     | T>G          | 0      | Clear  |
| von Willebrand's Disease, type 3 (Discovered in the Kooiker Hound)                 | VWF     | G>A          | 0      | Clear  |
| von Willebrand's Disease, type 3 (Discovered in the Scottish Terrier)              | VWF     | Deletion     | 0      | Clear  |
| von Willebrand's Disease, type 3 (Discovered in the Shetland Sheepdog)             | VWF     | Deletion     | 0      | Clear  |
| X-Linked Ectodermal Dysplasia  | EDA     | G>A          | 0      | Clear  |
| X-Linked Hereditary Nephropathy (Discovered in the Navasota Dog)                   | COL4A5  | Deletion     | 0      | Clear  |
| X-Linked Hereditary Nephropathy (Discovered in the Samoyed)                        | COL4A5  | G>T          | 0      | Clear  |
| X-Linked Myotubular Myopathy   | MTM1    | C>A          | 0      | Clear  |
| X-Linked Progressive Retinal Atrophy 1   | RPGR    | Deletion     | 0      | Clear  |
| X-Linked Progressive Retinal Atrophy 2   | RPGR    | Deletion     | 0      | Clear  |
| X-Linked Severe Combined Immunodeficiency (Discovered in the Basset Hound)         | IL2RG   | Deletion     | 0      | Clear  |
| X-Linked Severe Combined Immunodeficiency (Discovered in the Cardigan Welsh Corgi) | IL2RG   | Insertion    | 0      | Clear  |
| X-Linked Tremors   | PLP1    | A>C          | 0      | Clear  |
| Xanthinuria (Discovered in a mixed breed dog)                                      | Pending | G>A          | 0      | Clear  |
| Xanthinuria (Discovered in the Cavalier King Charles Spaniel)                      | Pending | Deletion     | 0      | Clear  |
| Xanthinuria (Discovered in the Toy Manchester Terrier)                             | Pending | G>T          | 0      | Clear  |

# DNA Test Report

## Coat Color

| Genetic Trait  | Gene   | Variant          | Copies | Result                               |
|--|--------|------------------|--------|--------------------------------------|
| Fawn   | ASIP   | a <sup>y</sup>   | 0      | No effect                            |
| Recessive Black  | ASIP   | a                | 0      | No effect                            |
| Tan Points   | ASIP   | a <sup>t</sup>   | 2      | <b>Tan points possible</b>           |
| Dominant Black   | CBD103 | K <sup>B</sup>   | 0      | No effect                            |
| Mask   | MC1R   | E <sup>m</sup>   | 2      | <b>Dark Muzzle possible</b>          |
| Recessive Red (Variant 1)                                | MC1R   | e <sup>1</sup>   | 0      | No effect                            |
| Recessive Red (Variant 2)                                | MC1R   | e <sup>2</sup>   | 0      | No effect                            |
| Recessive Red (Variant 3)                                | MC1R   | e <sup>3</sup>   | 0      | No effect                            |
| Widow's Peak (Discovered in Ancient dogs)                | MC1R   | e <sup>A</sup>   | 0      | No effect                            |
| Widow's Peak (Discovered in the Afghan Hound and Saluki) | MC1R   | E <sup>G</sup>   | 0      | No effect                            |
| Red Intensity  | MFSD12 | i                | 0      | White to yellow coat shades unlikely |
| Dilution (Variant 1) Linkage test                        | MLPH   | d <sup>1</sup>   | 0      | No effect                            |
| Dilution (Variant 2)                                     | MLPH   | d <sup>2</sup>   | 0      | No effect                            |
| Dilution (Variant 3)                                     | MLPH   | d <sup>3</sup>   | 0      | No effect                            |
| Chocolate (Variant 1)                                    | TYRP1  | b <sup>c</sup>   | 0      | No effect                            |
| Chocolate (Variant 2)                                    | TYRP1  | b <sup>s</sup>   | 0      | No effect                            |
| Chocolate (Variant 3)                                    | TYRP1  | b <sup>d</sup>   | 0      | No effect                            |
| Chocolate (Variant 4)                                    | TYRP1  | b <sup>asd</sup> | 0      | No effect                            |

## Coat Patterns

| Genetic Trait | Gene | Variant        | Copies | Result    |
|---------------|------|----------------|--------|-----------|
| Piebald       | MITF | s <sup>p</sup> | 0      | No effect |

# DNA Test Report

## Coat Patterns (continued)

| Genetic Trait | Gene  | Variant | Copies | Result    |
|---------------|-------|---------|--------|-----------|
| Merle         | PMEL  | M       | 0      | No effect |
| Harlequin     | PSMB7 | H       | 0      | No effect |
| Saddle Tan    | RALY  | -       | 0      | No effect |

## Coat Length and Curl

| Genetic Trait         | Gene  | Variant         | Copies | Result                                |
|-----------------------|-------|-----------------|--------|---------------------------------------|
| Long Hair (Variant 1) | FGF5  | lh <sup>1</sup> | 1      | Short coat likely, long coat possible |
| Long Hair (Variant 2) | FGF5  | lh <sup>2</sup> | 0      | No effect                             |
| Long Hair (Variant 3) | FGF5  | lh <sup>3</sup> | 0      | No effect                             |
| Long Hair (Variant 4) | FGF5  | lh <sup>4</sup> | 0      | No effect                             |
| Long Hair (Variant 5) | FGF5  | lh <sup>5</sup> | 0      | No effect                             |
| Curly Coat            | KRT71 | C               | 0      | No effect                             |

## Hairlessness

| Genetic Trait  | Gene  | Variant          | Copies | Result    |
|--|-------|------------------|--------|-----------|
| Hairlessness (Discovered in the Chinese Crested Dog)       | FOXI3 | Hr <sup>cc</sup> | 0      | No effect |
| Hairlessness (Discovered in the American Hairless Terrier) | SGK3  | hr <sup>ah</sup> | 0      | No effect |
| Hairlessness (Discovered in the Scottish Deerhound)        | SKG3  | hr <sup>sd</sup> | 0      | No effect |

## More Coat Traits

| Genetic Trait | Gene                      | Variant | Copies | Result    |
|---------------|---------------------------|---------|--------|-----------|
| Hair Ridge    | FGF3, FGF4, FGF19, ORAOV1 | R       | 0      | No effect |

# DNA Test Report

## More Coat Traits (continued)

| Genetic Trait    | Gene    | Variant         | Copies | Result           |
|------------------|---------|-----------------|--------|------------------|
| Reduced Shedding | MC5R    | sd              | 0      | Seasonal shedder |
| Furnishings      | RSPO2   | F               | 0      | No effect        |
| Albino           | SLC45A2 | c <sup>al</sup> | 0      | No effect        |

## Head Shape

| Genetic Trait           | Gene  | Variant | Copies | Result    |
|-------------------------|-------|---------|--------|-----------|
| Short Snout (Variant 2) | BMP3  | -       | 0      | No effect |
| Short Snout (Variant 1) | SMOC2 | -       | 0      | No effect |

## Hind Dewclaws

| Genetic Trait                                | Gene  | Variant | Copies | Result    |
|--|-------|---------|--------|-----------|
| Hind Dewclaws (Discovered in Asian breeds)   | LMBR1 | DC-1    | 0      | No effect |
| Hind Dewclaws (Discovered in Western breeds) | LMBR1 | DC-2    | 0      | No effect |

## Body Features

| Genetic Trait            | Gene  | Variant | Copies | Result                   |
|--------------------------|-------|---------|--------|--------------------------|
| Back Muscle and Bulk     | ACSL4 | -       | 0      | No effect                |
| Blue Eyes                | ALX4  | -       | 0      | No effect                |
| High Altitude Adaptation | EPAS1 | -       | 0      | No effect                |
| Short Legs               | FGF4  | -       | 0      | Medium to long legs      |
| Floppy Ears              | MSRB3 | -       | 0      | Pricked ears more likely |
| Short Tail               | T-box | T       | 0      | Full tail length likely  |