

# DNA Test Report

## Owner Info

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**First Name**

Sylvia

**Last Name**

Passchier

## Pet Info

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**Registered Name**

Big City Borders Jiggles

**Date of Birth**

23-6-2022

**Nickname (Call Name)**

Big City Borders Jiggles

**Sample ID**

DSVQYDL

**Sex**

Male

**Registration**

G-2- 3278390

**Country of Origin**

NL

**Microchip ID**

528140000884696

**Owner Reported Breed**

Border Collie

**Tattoo ID**

N/A

# DNA Test Report

## Genetic Diversity (Heterozygosity)

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**Big City Borders Jiggles's Percentage of Heterozygosity**

37%

Big City Borders Jiggles's genome analysis shows an average level of genetic heterozygosity when compared with other Border Collies.

**Typical Range for Border Collies**

32 - 39%

# DNA Test Report

## Health Conditions Known in This Breed

| Genetic Condition  | Gene       | Risk Variant | Copies | Result |
|--|------------|--------------|--------|--------|
| Collie Eye Anomaly (CEA)   | NHEJ1      | Deletion     | 0      | Clear  |
| Dental Hypomineralization  | FAM20C     | C>T          | 0      | Clear  |
| Early Adult Onset Deafness For Border Collies only (Linkage test)    | Pending    | Insertion    | 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  |

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## 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 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  |
| Congenital Myasthenic Syndrome (Discovered in the Labrador Retriever)              | COLQ     | T>C          | 0      | Clear  |

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## Other Conditions Tested (continued)

| Genetic Condition   | Gene    | Risk Variant | Copies | Result |
|---|---------|--------------|--------|--------|
| 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)                        | RBM20   | 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  |
| Early Retinal Degeneration (Discovered in the Norwegian Elkhound)           | STK38L  | Insertion    | 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  |
| Factor XI Deficiency  | FXI     | Insertion    | 0      | Clear  |
| Fanconi Syndrome  | FAN1    | Deletion     | 0      | Clear  |

# DNA Test Report

## Other Conditions Tested (continued)

| Genetic Condition   | Gene   | Risk Variant | Copies | Result |
|---|--------|--------------|--------|--------|
| 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    | Insertion    | 0      | Clear  |
| Hemophilia B (Discovered in the Lhasa Apso)                             | FIX    | Deletion     | 0      | Clear  |
| Hereditary Ataxia (Discovered in the Norwegian Buhund)                  | KCNIP4 | T>C          | 0      | Clear  |

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## Other Conditions Tested (continued)

| Genetic Condition  | Gene     | Risk Variant | Copies | Result |
|--|----------|--------------|--------|--------|
| 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  |
| 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  |
| 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  |

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## Other Conditions Tested (continued)

| Genetic Condition  | Gene       | Risk Variant | Copies | Result |
|--|------------|--------------|--------|--------|
| 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  |
| 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  |
| 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  |



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## Other Conditions Tested (continued)

| Genetic Condition   | Gene     | Risk Variant | Copies | Result |
|---|----------|--------------|--------|--------|
| 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  |
| 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  |

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## Other Conditions Tested (continued)

| Genetic Condition  | Gene     | Risk Variant | Copies | Result |
|--|----------|--------------|--------|--------|
| 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 Vendéen)           | 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)                         | IMPG2    | 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  |
| 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  |

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## Other Conditions Tested (continued)

| Genetic Condition   | Gene    | Risk Variant | Copies | Result |
|---|---------|--------------|--------|--------|
| 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 (Discovered in Belgian Malinois - SDCA1) | KCNJ10  | T>C          | 0      | Clear  |
| Spongy Degeneration with Cerebellar Ataxia (Discovered in Belgian Malinois - SDCA2) | 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  |
| 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  |

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## Other Conditions Tested (continued)

| Genetic Condition  | Gene    | Risk Variant | Copies | Result       |
|--|---------|--------------|--------|--------------|
| 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        |
| Congenital Hypothyroidism (Discovered in the Tenterfield Terrier)                  | TPO     | C>T          | —      | Inconclusive |
| Dystrophic Epidermolysis Bullosa (Discovered in the Golden Retriever)              | COL7A1  | C>T          | —      | Inconclusive |
| Hyperekplexia or Startle Disease   | SLC6A5  | G>T          | —      | Inconclusive |
| Myeloperoxidase Deficiency   | MOP     | C>T          | —      | Inconclusive |

# 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>   | 2      | <b>Black possible</b>                            |
| Mask   | MC1R   | E <sup>m</sup>   | 0      | No effect  |
| 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>   | 1      | <b>Black features likely, chocolate possible</b> |
| 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  | -       | 2      | <b>Saddle possible</b> |

## Coat Length and Curl

| Genetic Trait         | Gene  | Variant         | Copies | Result           |
|-----------------------|-------|-----------------|--------|------------------|
| Long Hair (Variant 1) | FGF5  | lh <sup>1</sup> | 2      | <b>Long coat</b> |
| 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) Linkage test | FOXI3 | Hr <sup>cc</sup>  | 0      | No effect |
| Hairlessness (Discovered in the American Hairless Terrier)        | SGK3  | hr <sup>ahT</sup> | 0      | No effect |
| Hairlessness (Discovered in the Scottish Deerhound)               | SKG3  | hr <sup>sd</sup>  | 0      | No effect |

## Shedding

| Genetic Trait    | Gene | Variant | Copies | Result           |
|------------------|------|---------|--------|------------------|
| Reduced Shedding | MC5R | sd      | 0      | Seasonal shedder |

# DNA Test Report

## More Coat Traits

| Genetic Trait | Gene                      | Variant         | Copies | Result    |
|---------------|---------------------------|-----------------|--------|-----------|
| Hair Ridge    | FGF3, FGF4, FGF19, ORAOV1 | R               | 0      | No effect |
| Furnishings   | RSP02                     | 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 |

## Eye Color

| Genetic Trait | Gene | Variant | Copies | Result    |
|---------------|------|---------|--------|-----------|
| Blue Eyes     | ALX4 | -       | 0      | No effect |

## Ears

| Genetic Trait | Gene  | Variant | Copies | Result                   |
|---------------|-------|---------|--------|--------------------------|
| Floppy Ears   | MSRB3 | -       | 0      | Pricked ears more likely |

## Extra Toes

| 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    | 1      | Hind dewclaws possible |

# DNA Test Report

## More Body Features

| Genetic Trait            | Gene  | Variant | Copies | Result                  |
|--------------------------|-------|---------|--------|-------------------------|
| Back Muscle and Bulk     | ACSL4 | -       | 0      | No effect               |
| High Altitude Adaptation | EPAS1 | -       | 0      | No effect               |
| Short Legs               | FGF4  | -       | 0      | Medium to long legs     |
| Short Tail               | T-box | T       | 0      | Full tail length likely |