WISDOM PANEL™

# DNA Test Report



## Owner Info

**First Name**
Andrew

**Last Name**
Furrer

## Pet Info

**Registered Name**
Auriga

**Date of Birth**
12/5/2020

**Nickname (Call Name)**
Auriga

**Sample ID**
DWVKRWF

**Sex**
Female

**Registration**
SS23601505

**Country of Origin**
US

**Microchip ID**
N/A

**Owner Reported Breed**
Irish Setter

**Tattoo ID**
N/A

## Genetic Diversity (Heterozygosity)

**Auriga's Percentage of Heterozygosity**

41%

Auriga's genome analysis shows higher than average genetic heterozygosity when compared with other Irishes.

**Typical Range for Irishes**

27 - 35%

## Health Conditions Known in This Breed

| Genetic Condition | Gene | Risk Variant | Copies | Result |
|---|---|---|---|---|
| Globoid Cell Leukodystrophy (Discovered in the Irish Setter) | GALC | A>T | 0 | Clear |
| Rod-Cone Dysplasia 1 | PDE6B | G>A | 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 (Discovered in the Italian Greyhound) | ENAM | Deletion | 0 | Clear |
| Amelogenesis Imperfecta (Discovered in the Parson Russell Terrier) | ENAM | C>T | 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 |
| 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 |

## Other Conditions Tested (continued)

| Genetic Condition | Gene | Risk Variant | Copies | Result |
|---|---|---|---|---|
| Cerebellar Hypoplasia | VLDLR | Deletion | 0 | Clear |
| Cerebral Dysfunction | SLC6A3 | G>A | 0 | Clear |
| Chondrodysplasia (Discovered in Norwegian Elkhound and Karelian Bear Dog) | ITGA10 | C>T | 0 | Clear |
| Cleft Lip & Palate with Syndactyly | ADAMTS20 | Deletion | 0 | Clear |
| Cleft Palate | DLX6 | C>A | 0 | Clear |
| Collie Eye Anomaly (CEA) | NHEJ1 | Deletion | 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 |
| 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 |
| Craniomandibular Osteopathy (Discovered in Scottish Terrier breeds) | SLC37A2 | C>T | 0 | Clear |

## Other Conditions Tested (continued)

| Genetic Condition | Gene | Risk Variant | Copies | Result |
|---|---|---|---|---|
| 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 (DINGS1), (Discovered in Doberman Pinscher) | PTPRQ | Insertion | 0 | Clear |
| Degenerative Myelopathy | SOD1 | G>A | 0 | Clear |
| Demyelinating Neuropathy | SBF2 | G>T | 0 | Clear |
| Dental Hypomineralization | FAM20C | C>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 |
| Dystrophic Epidermolysis Bullosa (Discovered in the Golden Retriever) | COL7A1 | C>T | 0 | Clear |
| Early Adult Onset Deafness For Border Collies only (Linkage test) | Intergenic | Insertion | 0 | Clear |
| Early Retinal Degeneration (Discovered in the Norwegian Elkhound) | STK38L | 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 |
| Early-Onset Progressive Retinal Atrophy (Discovered in the Portuguese Water Dog) | Confidential | — | 0 | Clear |
| Epidermolytic Hyperkeratosis | KRT10 | G>T | 0 | Clear |
| Episodic Falling Syndrome | BCAN | Insertion | 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 |

## Other Conditions Tested (continued)

| Genetic Condition | Gene | Risk Variant | Copies | Result |
|---|---|---|---|---|
| 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 (Discovered in Great Pyrenees) | ITGA2B | C>G | 0 | Clear |
| Glanzmann Thrombasthenia Type I (Discovered in mixed breed dogs) | ITGA2B | C>T | 0 | Clear |
| Globoid Cell Leukodystrophy (Discovered in Terriers) | GALC | A>C | 0 | Clear |
| Glycogen Storage Disease Type Ia (Discovered in the Maltese) | 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 |

## 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 Nasal Parakeratosis (Discovered in the Labrador Retriever) | SUV39H2 | A>C | 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 | Confidential | — | 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 Border Collie) | CUBN | Deletion | 0 | Clear |
| Intestinal Cobalamin Malabsorption (Discovered in the Komondor) | CUBN | G>A | 0 | Clear |
| Juvenile Encephalopathy (Discovered in the Parson Russell Terrier) | Confidential | — | 0 | Clear |
| Juvenile Laryngeal Paralysis and Polyneuropathy | RAB3GAP1 | Deletion | 0 | Clear |
| Juvenile Myoclonic Epilepsy | DIRAS1 | Deletion | 0 | Clear |
| L-2-Hydroxyglutaric aciduria (Discovered in the Staffordshire Bull Terrier) | L2HGDH | T>C | 0 | Clear |
| L-2-Hydroxyglutaric Aciduria (Discovered in the West Highland White Terrier) | Confidential | — | 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 |

## Other Conditions Tested (continued)

| Genetic Condition | Gene | Risk Variant | Copies | Result |
|---|---|---|---|---|
| Ligneous Membranitis | PLG | T>A | 0 | Clear |
| Lung Developmental Disease (Discovered in the Airedale Terrier) | LAMP3 | C>T | 0 | Clear |
| Macrothrombocytopenia (Discovered in Norfolk and Cairn Terrier) | TUBB1 | G>A | 0 | Clear |
| May-Hegglin Anomaly | MYH9 | G>A | 0 | Clear |
| MDR1 Medication Sensitivity | MDR1/ABCB1 | Deletion | 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 (Discovered in Australian Cattle Dog) | 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 |

## 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 (Discovered in Spanish Water Dog) | 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 |
| Obesity risk (POMC) | POMC | Deletion | 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 |

## Other Conditions Tested (continued)

| Genetic Condition | Gene | Risk Variant | Copies | Result |
|---|---|---|---|---|
| Phosphofructokinase 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 |
| 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) | Confidential | — | 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) | Confidential | — | 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) | Confidential | — | 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 |

## Other Conditions Tested (continued)

| Genetic Condition | Gene | Risk Variant | Copies | Result |
|---|---|---|---|---|
| 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 |
| QT Syndrome | KCNQ1 | C>A | 0 | Clear |
| Renal Cystadenocarcinoma and Nodular Dermatofibrosis | FLCN | A>G | 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 |
| Sensory Neuropathy | FAM134B | Insertion | 0 | Clear |
| Severe Combined Immunodeficiency (Discovered in Frisian Water Dogs) | RAG1 | G>T | 0 | Clear |
| Severe Combined Immunodeficiency (Discovered in Russell Terriers) | PRKDC | G>T | 0 | Clear |
| Shaking Puppy Syndrome (Discovered in the Border Terrier) | Confidential | — | 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 |

## Other Conditions Tested (continued)

| Genetic Condition | Gene | Risk Variant | Copies | Result |
|---|---|---|---|---|
| Startle Disease (Discovered in Irish Wolfhounds) | SLC6A5 | G>T | 0 | Clear |
| Trapped Neutrophil Syndrome | VPS13B | Deletion | 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 |
| 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) | Confidential | — | 0 | Clear |
| Xanthinuria (Discovered in the Cavalier King Charles Spaniel) | Confidential | — | 0 | Clear |
| Xanthinuria (Discovered in the Toy Manchester Terrier) | Confidential | — | 0 | Clear |

## Coat Color

| Genetic Trait | Gene | Variant | Copies | Result |
|---|---|---|---|---|
| Fawn | ASIP | $a^y$ | 1 | **Fawn possible** |
| Recessive Black | ASIP | a | 0 | No effect |
| Tan Points | ASIP | $a^t$ | 1 | **Tan points possible** |
| Dominant Black | CBD103 | $K^B$ | 1 | **Black or brindle possible** |
| Mask | MC1R | $E^m$ | 0 | No effect |
| Recessive Red (e1) | MC1R | $e^1$ | 2 | **Cream to red coat likely** |
| Recessive Red (e2) | MC1R | $e^2$ | 0 | No effect |
| Recessive Red (e3) | MC1R | $e^3$ | 0 | No effect |
| Widow's Peak (Discovered in Ancient dogs) | MC1R | $e^A$ | 0 | No effect |
| Widow's Peak (Discovered in the Afghan Hound and Saluki) | MC1R | $E^G$ | 0 | No effect |

## Color Modification

| Genetic Trait | Gene | Variant | Copies | Result |
|---|---|---|---|---|
| Red Intensity | MFSD12 | i | 0 | No effect |
| Dilution (d1) Linkage test | MLPH | $d^1$ | 0 | No effect |
| Dilution (d2) | MLPH | $d^2$ | 0 | No effect |
| Dilution (d3) | MLPH | $d^3$ | 0 | No effect |
| Chocolate (basd) | TYRP1 | $b^{asd}$ | 0 | No effect |
| Chocolate (bc) | TYRP1 | $b^c$ | 0 | No effect |
| Chocolate (bd) | TYRP1 | $b^d$ | 0 | No effect |
| Chocolate (bs) | TYRP1 | $b^s$ | 0 | No effect |

## Coat Patterns

| Genetic Trait | Gene | Variant | Copies | Result |
|---|---|---|---|---|
| Piebald | MITF | $s^{p}$ | 0 | No effect |
| Merle | PMEL | M | 0 | No effect |
| Harlequin | PSMB7 | H | 0 | No effect |
| Saddle Tan | RALY | - | **1** | **Saddle possible** |

## Coat Length and Curl

| Genetic Trait | Gene | Variant | Copies | Result |
|---|---|---|---|---|
| Long Hair (lh1) | FGF5 | **$lh^{1}$** | **2** | **Long coat** |
| Long Hair (lh2) | FGF5 | $lh^{2}$ | 0 | No effect |
| Long Hair (lh3) | FGF5 | $lh^{3}$ | 0 | No effect |
| Long Hair (lh4) | FGF5 | $lh^{4}$ | 0 | No effect |
| Long Hair (lh5) | FGF5 | $lh^{5}$ | 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 | $Hr^{cc}$ | 0 | No effect |
| Hairlessness (Discovered in the American Hairless Terrier) | SGK3 | $hr^{aht}$ | 0 | No effect |
| Hairlessness (Discovered in the Scottish Deerhound) | SKG3 | $hr^{sd}$ | 0 | No effect |

## Shedding

| Genetic Trait | Gene | Variant | Copies | Result |
|---|---|---|---|---|
| Reduced Shedding | MC5R | **sd** | **2** | **Low shedder** |

## More Coat Traits

| Genetic Trait | Gene | Variant | Copies | Result |
|---|---|---|---|---|
| Hair Ridge | FGF3, FGF4, FGF19, ORAOV1 | R | 0 | No effect |
| Furnishings | RSPO2 | F | 0 | No effect |
| Albino | SLC45A2 | $c^{al}$ | 0 | No effect |

## Head Shape

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

## Eye Color

| Genetic Trait | Gene | Variant | Copies | Result |
|---|---|---|---|---|
| Blue Eyes (Discovered in the Siberian Husky) | ALX4 | - | 0 | No effect |

## Ears

| Genetic Trait | Gene | Variant | Copies | Result |
|---|---|---|---|---|
| Floppy Ears | MSRB3 | - | **2** | **Floppy 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 | 0 | No effect |

## 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 (Chondrodysplasia, CDPA) | FGF4 | - | 0 | No effect |
| Short Tail | T-box | T | 0 | Full tail length likely |