“GREYCIE”

HICKORY HILLS GREYCIE

DNA Test Report | Test Date: November 1st, 2019 | embk.me/hickoryhillsoakley

HEALTH REPORT

How to interpret Greycie’s genetic health results:
If Greycie inherited any of the variants that we tested, they will be listed at the top of the Health Report section, along with a description of how to interpret this result. We also include all of the variants that we tested Greycie for that we did not detect the risk variant for.

A genetic test is not a diagnosis
This genetic test does not diagnose a disease. Please talk to your vet about your dog’s genetic results, or if you think that your pet may have a health condition or disease.

Good news!

Greycie is not at increased risk for the genetic health conditions that Embark tests.

Breed-Relevant Genetic Conditions	**18 variants not detected**
Additional Genetic Conditions	**157 variants not detected**

“GREYCIE”

HICKORY HILLS GREYCIE

DNA Test Report | Test Date: November 1st, 2019 | embk.me/hickoryhillsoakley

BREED-RELEVANT CONDITIONS TESTED

Greycie did not have the variants that we tested for, that are relevant to her breed:

- Congenital Macrothrombocytopenia (TUBB1 Exon 1, Cavalier King Charles Spaniel Variant)
- Canine Elliptocytosis (SPTB Exon 30)
- Pyruvate Kinase Deficiency (PKLR Exon 7 Labrador Variant)
- Progressive Retinal Atrophy, prcd (PRCD Exon 1)
- Golden Retriever Progressive Retinal Atrophy 2, GR-PRA2 (TTC8)
- Progressive Retinal Atrophy - crd4/cord1 (RPGRIP1)
- Achromatopsia (CNGA3 Exon 7 Labrador Retriever Variant)
- Macular Corneal Dystrophy, MCD (CHST6)
- Hyperuricosuria and Hyperuricemia or Urolithiasis, HUU (SLC2A9)
- Alexander Disease (GFAP)
- Narcolepsy (HCRTR2 Intron 6)
- Centronuclear Myopathy (PTPLA)
- Exercise-Induced Collapse (DNM1)
- Myotubular Myopathy 1, X-linked Myotubular Myopathy, XL-MTM (MTM1, Labrador Variant)
- Congenital Myasthenic Syndrome (COLQ)
- Hereditary Nasal Parakeratosis (SUV39H2)
- Oculoskeletal Dysplasia 1, Dwarfism-Retinal Dysplasia, OSD1 (COL9A3, Labrador Retriever)
- Skeletal Dysplasia 2, SD2 (COL11A2)

"GREYCIE"

HICKORY HILLS GREYCIE

ADDITIONAL CONDITIONS TESTED

Greycie did not have the variants that we tested for, in the following conditions that the potential effect on dogs with Greycie's breed may not yet be known.

- MDR1 Drug Sensitivity (MDR1)
- P2Y12 Receptor Platelet Disorder (P2Y12)
- Factor IX Deficiency, Hemophilia B (F9 Exon 7, Terrier Variant)
- Factor IX Deficiency, Hemophilia B (F9 Exon 7, Rhodesian Ridgeback Variant)
- Factor VII Deficiency (F7 Exon 5)
- Factor VIII Deficiency, Hemophilia A (F8 Exon 10, Boxer Variant)
- Factor VIII Deficiency, Hemophilia A (F8 Exon 11, Shepherd Variant 1)
- Factor VIII Deficiency, Hemophilia A (F8 Exon 1, Shepherd Variant 2)
- Thrombopathia (RASGRP1 Exon 5, Basset Hound Variant)
- Thrombopathia (RASGRP1 Exon 8)
- Thrombopathia (RASGRP1 Exon 5, American Eskimo Dog Variant)
- Von Willebrand Disease Type III, Type III vWD (VWF Exon 4)
- Von Willebrand Disease Type III, Type III vWD (VWF Exon 7)
- Von Willebrand Disease Type I (VWF)
- Von Willebrand Disease Type II, Type II vWD (VWF)
- Canine Leukocyte Adhesion Deficiency Type III, CLADIII (FERMT3)
- Glanzmann's Thrombasthenia Type I (ITGA2B Exon 12)
- May-Hegglin Anomaly (MYH9)
- Prekallikrein Deficiency (KLKB1 Exon 8)
- Pyruvate Kinase Deficiency (PKLR Exon 5)
- Pyruvate Kinase Deficiency (PKLR Exon 7 Pug Variant)
- Pyruvate Kinase Deficiency (PKLR Exon 7 Beagle Variant)
- Pyruvate Kinase Deficiency (PKLR Exon 10)

"GREYCIE"

HICKORY HILLS GREYCIE

DNA Test Report | Test Date: November 1st, 2019 | embk.me/hickoryhillsoakley

ADDITIONAL CONDITIONS TESTED

- Congenital Hypothyroidism (TPO, Tenterfield Terrier Variant)
- Complement 3 Deficiency, C3 Deficiency (C3)
- Severe Combined Immunodeficiency (PRKDC)
- Severe Combined Immunodeficiency (RAG1)
- X-linked Severe Combined Immunodeficiency (IL2RG Variant 1)
- X-linked Severe Combined Immunodeficiency (IL2RG Variant 2)
- Progressive Retinal Atrophy, rcd1 (PDE6B Exon 21 Irish Setter Variant)
- Progressive Retinal Atrophy, rcd3 (PDE6A)
- Progressive Retinal Atrophy, CNGA (CNGA1 Exon 9)
- Progressive Retinal Atrophy (CNGB1)
- Progressive Retinal Atrophy (SAG)
- Golden Retriever Progressive Retinal Atrophy 1, GR-PRA1 (SLC4A3)
- Progressive Retinal Atrophy, crd1 (PDE6B)
- Progressive Retinal Atrophy, crd2 (IQCB1)
- Collie Eye Anomaly, Choroidal Hypoplasia, CEA (NHEJ1)
- Achromatopsia (CNGA3 Exon 7 German Shepherd Variant)
- Autosomal Dominant Progressive Retinal Atrophy (RHO)
- Canine Multifocal Retinopathy (BEST1 Exon 2)
- Canine Multifocal Retinopathy (BEST1 Exon 5)
- Canine Multifocal Retinopathy (BEST1 Exon 10 Deletion)
- Canine Multifocal Retinopathy (BEST1 Exon 10 SNP)
- Glaucoma (ADAMTS10 Exon 9)
- Glaucoma (ADAMTS10 Exon 17)
- Glaucoma (ADAMTS17 Exon 11)
- Glaucoma (ADAMTS17 Exon 2)

“GREYCIE”

HICKORY HILLS GREYCIE

DNA Test Report | Test Date: November 1st, 2019 | embk.me/hickoryhillsoakley

ADDITIONAL CONDITIONS TESTED

- Hereditary Cataracts, Early-Onset Cataracts, Juvenile Cataracts (HSF4 Exon 9 Shepherd Variant)
- Primary Lens Luxation (ADAMTS17)
- Congenital Stationary Night Blindness (RPE65)
- 2,8-Dihydroxyadenine Urolithiasis, 2,8-DHA Urolithiasis (APRT)
- Cystinuria Type I-A (SLC3A1)
- Cystinuria Type II-A (SLC3A1)
- Cystinuria Type II-B (SLC7A9)
- Polycystic Kidney Disease, PKD (PKD1)
- Primary Hyperoxaluria (AGXT)
- Protein Losing Nephropathy, PLN (NPHS1)
- X-Linked Hereditary Nephropathy, XLHN (COL4A5 Exon 35, Samoyed Variant 2)
- Autosomal Recessive Hereditary Nephropathy, Familial Nephropathy, ARHN (COL4A4 Exon 3)
- Primary Ciliary Dyskinesia, PCD (CCDC39 Exon 3)
- Congenital Keratoconjunctivitis Sicca and Ichthyosiform Dermatosis, Dry Eye Curly Coat Syndrome, CKCSID (FAM83H Exon 5)
- X-linked Ectodermal Dysplasia, Anhidrotic Ectodermal Dysplasia (EDA Intron 8)
- Renal Cystadenocarcinoma and Nodular Dermatofibrosis, RCND (FLCN Exon 7)
- Canine Fucosidosis (FUCA1)
- Glycogen Storage Disease Type II, Pompe's Disease, GSD II (GAA)
- Glycogen Storage Disease Type IA, Von Gierke Disease, GSD IA (G6PC)
- Glycogen Storage Disease Type IIIA, GSD IIIA (AGL)
- Mucopolysaccharidosis Type I, MPS I (IDUA)
- Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6 Variant 1)
- Mucopolysaccharidosis Type IIIA, Sanfilippo Syndrome Type A, MPS IIIA (SGSH Exon 6 Variant 2)
- Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 5)
- Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII (GUSB Exon 3)

"GREYCIE"

HICKORY HILLS GREYCIE

DNA Test Report | Test Date: November 1st, 2019 | embk.me/hickoryhillsoakley

ADDITIONAL CONDITIONS TESTED

- Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM Whippet and English Springer Spaniel Variant)
- Glycogen storage disease Type VII, Phosphofructokinase Deficiency, PFK Deficiency (PFKM Wachtelhund Variant)
- Lagotto Storage Disease (ATG4D)
- Neuronal Ceroid Lipofuscinosis 1, NCL 1 (PPT1 Exon 8)
- Neuronal Ceroid Lipofuscinosis 2, NCL 2 (TPP1 Exon 4)
- Neuronal Ceroid Lipofuscinosis 1, Cerebellar Ataxia, NCL4A (ARSG Exon 2)
- Neuronal Ceroid Lipofuscinosis 1, NCL 5 (CLN5 Border Collie Variant)
- Neuronal Ceroid Lipofuscinosis 6, NCL 6 (CLN6 Exon 7)
- Neuronal Ceroid Lipofuscinosis 8, NCL 8 (CLN8 English Setter Variant)
- Neuronal Ceroid Lipofuscinosis (MFSD8)
- Neuronal Ceroid Lipofuscinosis (CLN8 Australian Shepherd Variant)
- Neuronal Ceroid Lipofuscinosis 10, NCL 10 (CTSD Exon 5)
- Neuronal Ceroid Lipofuscinosis (CLN5 Golden Retriever Variant)
- Adult-Onset Neuronal Ceroid Lipofuscinosis (ATP13A2, Tibetan Terrier Variant)
- GM1 Gangliosidosis (GLB1 Exon 15 Shiba Inu Variant)
- GM1 Gangliosidosis (GLB1 Exon 15 Alaskan Husky Variant)
- GM1 Gangliosidosis (GLB1 Exon 2)
- GM2 Gangliosidosis (HEXB, Poodle Variant)
- GM2 Gangliosidosis (HEXA)
- Globoid Cell Leukodystrophy, Krabbe disease (GALC Exon 5)
- Autosomal Recessive Amelogenesis Imperfecta, Familial Enamel Hypoplasia (Italian Greyhound Variant)
- Persistent Mullerian Duct Syndrome, PMDS (AMHR2)
- Deafness and Vestibular Syndrome of Dobermans, DVDob, DINGS (MYO7A)
- Shar-Pei Autoinflammatory Disease, SPAID, Shar-Pei Fever (MTBP)
- Alaskan Husky Encephalopathy, Subacute Necrotizing Encephalomyelopathy (SLC19A3)

"GREYCIE"

HICKORY HILLS GREYCIE

DNA Test Report | Test Date: November 1st, 2019 | embk.me/hickoryhillsoakley

ADDITIONAL CONDITIONS TESTED

- Cerebellar Abiotrophy, Neonatal Cerebellar Cortical Degeneration, NCCD (SPTBN2)
- Cerebellar Ataxia, Progressive Early-Onset Cerebellar Ataxia (SEL1L)
- Cerebellar Hypoplasia (VLDLR)
- Spinocerebellar Ataxia, Late-Onset Ataxia, LoSCA (CAPN1)
- Spinocerebellar Ataxia with Myokymia and/or Seizures (KCNJ10)
- Benign Familial Juvenile Epilepsy, Remitting Focal Epilepsy (LGI2)
- Degenerative Myelopathy, DM (SOD1A)
- Fetal-Onset Neonatal Neuroaxonal Dystrophy (MFN2)
- Hypomyelination and Tremors (FNIP2)
- Shaking Puppy Syndrome, X-linked Generalized Tremor Syndrome (PLP)
- Neuroaxonal Dystrophy, NAD (Spanish Water Dog Variant)
- L-2-Hydroxyglutaricaciduria, L2HGA (L2HGDH)
- Neonatal Encephalopathy with Seizures, NEWS (ATF2)
- Polyneuropathy, NDRG1 Greyhound Variant (NDRG1 Exon 15)
- Polyneuropathy, NDRG1 Malamute Variant (NDRG1 Exon 4)
- Progressive Neuronal Abiotrophy, Canine Multiple System Degeneration, CMSD (SERAC1 Exon 15)
- Progressive Neuronal Abiotrophy, Canine Multiple System Degeneration, CMSD (SERAC1 Exon 4)
- Juvenile Laryngeal Paralysis and Polyneuropathy, Polyneuropathy with Ocular Abnormalities and Neuronal Vacuolation, POANV (RAB3GAP1, Rottweiler Variant)
- Hereditary Sensory Autonomic Neuropathy, Acral Mutilation Syndrome, AMS (GDNF-AS)
- Juvenile-Onset Polyneuropathy, Leonberger Polyneuropathy 1, LPN1 (LPN1, ARHGEF10)
- Spongy Degeneration with Cerebellar Ataxia 1, SDCA1, SeSAME/EAST Syndrome (KCNJ10)
- Spongy Degeneration with Cerebellar Ataxia 2, SDCA2 (ATP1B2)
- Dilated Cardiomyopathy, DCM1 (PDK4)
- Dilated Cardiomyopathy, DCM2 (TTN)
- Long QT Syndrome (KCNQ1)

"GREYCIE"

HICKORY HILLS GREYCIE

DNA Test Report | Test Date: November 1st, 2019 | embk.me/hickoryhillsoakley

ADDITIONAL CONDITIONS TESTED

- Muscular Dystrophy (DMD, Cavalier King Charles Spaniel Variant 1)
- Muscular Dystrophy (DMD Pembroke Welsh Corgi Variant)
- Muscular Dystrophy (DMD Golden Retriever Variant)
- Inherited Myopathy of Great Danes (BIN1)
- Myostatin Deficiency, Bully Whippet Syndrome (MSTN)
- Myotonia Congenita (CLCN1 Exon 7)
- Myotonia Congenita (CLCN1 Exon 23)
- Hypocatalasia, Acatalasemia (CAT)
- Pyruvate Dehydrogenase Deficiency (PDP1)
- Malignant Hyperthermia (RYR1)
- Imerslund-Grasbeck Syndrome, Selective Cobalamin Malabsorption (CUBN Exon 53)
- Imerslund-Grasbeck Syndrome, Selective Cobalamin Malabsorption (CUBN Exon 8)
- Congenital Myasthenic Syndrome (CHAT)
- Episodic Falling Syndrome (BCAN)
- Dystrophic Epidermolysis Bullosa (COL7A1)
- Ectodermal Dysplasia, Skin Fragility Syndrome (PKP1)
- Ichthyosis, Epidermolytic Hyperkeratosis (KRT10)
- Ichthyosis (PNPLA1)
- Ichthyosis (SLC27A4)
- Ichthyosis (NIPAL4)
- Focal Non-Epidermolytic Palmoplantar Keratoderma, Pachyonychia Congenita (KRT16)
- Hereditary Footpad Hyperkeratosis (FAM83G)
- Musladin-Lueke Syndrome (ADAMTSL2)
- Cleft Lip and/or Cleft Palate (ADAMTS20)
- Hereditary Vitamin D-Resistant Rickets (VDR)

“GREYCIE”

HICKORY HILLS GREYCIE

ADDITIONAL CONDITIONS TESTED

- **Osteogenesis Imperfecta, Brittle Bone Disease (COL1A2)**
- **Osteogenesis Imperfecta, Brittle Bone Disease (SERPINH1)**
- **Osteogenesis Imperfecta, Brittle Bone Disease (COL1A1)**
- **Osteochondrodysplasia, Skeletal Dwarfism (SLC13A1)**
- **Craniomandibular Osteopathy, CMO (SLC37A2)**
- **Chondrodystrophy and Intervertebral Disc Disease, CDDY/IVDD, Type I IVDD (FGF4 retrogene - CFA12)**
- **Chondrodystrophy, Norwegian Elkhound and Karelian Bear Dog Variant (ITGA10)**