Demographic Information

Call Name	Faith	**DOB**	Jan. 1, 2017
Registered Name	Riverlooks Twist of Fate	**Registration #**	DN49022407
Breed	Australian Shepherd	**Tattoo**	-
Sex	Female	**Microchip**	-
Owner	Niki Gilland	**Laboratory #**	343275 (AN-L-CHC-20607)
		Report Date	April 23, 2018

These tests were developed and performed by Paw Print Genetics®, Spokane WA.

Explanation of Results

Normal	A 'Normal' result means that your dog does not have the mutation that causes the associated genetic disease.
Carrier	A 'Carrier' result indicates that your dog has inherited one copy of the mutation that has been reported to cause this genetic disease. Your dog may not be clinically affected by this mutation because two copies of the mutation are usually required to cause disease.
Carrier / At–Risk	A 'Carrier / At–Risk' result indicates that your dog inherited one copy of the mutation that has been reported to cause this genetic disease. Based on the mode of genetic inheritance for this particular disease, inheriting one mutant copy of the gene may result in the disease. Dogs with one copy of the mutation may have a milder phenotype as compared to cats with two copies of this mutation.
At–Risk / Affected	An 'At–Risk / Affected' result indicates that your dog inherited one or two copies of the mutation that has been reported to cause this genetic disease. Based on the mode of genetic inheritance for this particular disease, inheriting one or two mutant copies of the gene may result in the disease.

No Result	'No Result' indicates that we were unable to obtain a genotype for your dog for this specific disease or trait and does not mean that your dog is a carrier or at-risk for this disease. There are a variety of reasons why a specific test may not provide a reportable result. Unique variations in the genetic code of some individuals may exist and cause certain regions of the genome to not perform properly with a specific test. In addition, suboptimal sampling of the dog's cheek cells could also result in poor sample performance due to inadequate cell counts, bacterial and fungal growth, or the presence of other test inhibitors. An acceptable level of tests with no results has been determined by Paw Print Genetics. Dogs with at least 90% of the test results are determined to be acceptable and reportable. If your dog has an unacceptable level of tests with no results, you will be contacted for a new sample to repeat the testing.

Please review our testing terms and disclaimers regarding your results.

WT: wild type (normal) M: mutant Y: Y chromosome (male)

Breed Profile

Disease Name	Genotype	Interpretation
Coagulation Factor VII Deficiency	WT/WT	Normal (clear)
Collie Eye Anomaly	WT/WT	Normal (clear)
Cone Degeneration	WT/WT	Normal (clear)
Degenerative Myelopathy (Common Variant)	WT/WT	Normal (clear)
Exercise-Induced Collapse	WT/WT	Normal (clear)
Hereditary Cataracts (Australian Shepherd Type)	WT/WT	Normal (clear)
Hyperuricosuria	WT/WT	Normal (clear)
Intestinal Cobalamin Malabsorption (Border Collie Type)	WT/WT	Normal (clear)
Multidrug Resistance 1	WT/M	Carrier (At-Risk)
Multifocal Retinopathy 1	WT/WT	Normal (clear)
Neuronal Ceroid Lipofuscinosis 6	WT/WT	Normal (clear)
Neuronal Ceroid Lipofuscinosis 8 (Australian Shepherd Type)	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Progressive Rod-Cone Degeneration (prcd)	WT/WT	Normal (clear)

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Coat Colors & Traits

Trait Name	Genotype	Interpretation
A Locus (Agouti) - A^y, a^t, a	a^t/a^t	Tricolor, black and tan

B Locus - b^c, b^d, b^s (Brown)	**b/b**	**Brown coat, nose and foot pads**
B Locus (Brown) - b^c	0	
B Locus (Brown) - b^d	0	
B Locus (Brown) - b^s	2	
Cu Locus (Curly Hair)	**Cu/Cu**	**Straight coat**
D Locus (Dilute) - d^1	**D/D**	**Non Dilute**
E Locus (Yellow/Red)	**E/E**	**Black**
E^m Locus (Melanistic Mask)	**N/N**	**No melanistic mask**
K Locus (Dominant Black)	**k^y/k^y**	**Agouti expression allowed**
L Locus (Long Hair/Fluffy) - Lh^1	**Lh/Lh**	**Longhaired**
Sex Determination	**X/X**	**Female**
T Locus (Natural Bobtail)	**t/t**	**Normal tail**

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Determinants of coat colors and traits are complex. Many of these variants are known and many of the genes screened in the Canine HealthCheck interact. In addition, not all the genetic factors that contribute to a dog's coat color and traits are known. Because of the complexities in gene-gene interactions, the coat colors and traits reported in your Canine HealthCheck results may vary from your dog's actual appearance. Individual differences in genes throughout the canine genome, not tested in this genetic screen, may also affect the final coat color or traits seen in your dog.

Diseases

Disease Name	Genotype	Interpretation
Alaskan Husky Encephalopathy	**WT/WT**	Normal (clear)
Alaskan Malamute Polyneuropathy	**WT/WT**	Normal (clear)
Amelogenesis Imperfecta	**WT/WT**	Normal (clear)

Benign Familial Juvenile Epilepsy	WT/WT	Normal (clear)
Canine Multiple System Degeneration (Chinese Crested Type)	WT/WT	Normal (clear)
Canine Multiple System Degeneration (Kerry Blue Terrier Type)	WT/WT	Normal (clear)
Cerebellar Ataxia (Finnish Hound Type)	WT/WT	Normal (clear)
Chondrodysplasia (Karelian Bear Dog and Norwegian Elkhound Type)	WT/WT	Normal (clear)
Coagulation Factor VII Deficiency	WT/WT	Normal (clear)
Collie Eye Anomaly	WT/WT	Normal (clear)
Complement 3 Deficiency	WT/WT	Normal (clear)
Cone Degeneration	WT/WT	Normal (clear)
Cone Degeneration (German Shorthaired Pointer Type)	WT/WT	Normal (clear)
Congenital Hypothyroidism with Goiter (Terrier Type)	No Result	No Result
Congenital Myasthenic Syndrome (Labrador Retriever Type)	WT/WT	Normal (clear)
Congenital Myasthenic Syndrome (Old Danish Pointer Type)	WT/WT	Normal (clear)
Congenital Stationary Night Blindness	WT/WT	Normal (clear)
Cyclic Neutropenia	No Result	No Result
Cystinuria (Australian Cattle Dog Type)	WT/WT	Normal (clear)
Cystinuria (Miniature Pinscher Type)	WT/WT	Normal (clear)
Cystinuria (Newfoundland Type)	WT/WT	Normal (clear)
Degenerative Myelopathy (Common Variant)	WT/WT	Normal (clear)

Dilated Cardiomyopathy (Doberman Pinscher Type Risk Factor, Variant 1)	No Result	No Result
Dry Eye Curly Coat Syndrome	**WT/WT**	Normal (clear)
Dystrophic Epidermolysis Bullosa	**WT/WT**	Normal (clear)
Early Retinal Degeneration	**WT/WT**	Normal (clear)
Ectodermal Dysplasia (Chesapeake Bay Retriever Type)	**WT/WT**	Normal (clear)
Ectodermal Dysplasia, X-Linked (Shepherd Type)	**WT/WT**	X-Linked Female Normal
Elliptocytosis	**WT/WT**	Normal (clear)
Epidermolytic Hyperkeratosis	**WT/WT**	Normal (clear)
Episodic Falling Syndrome	**WT/WT**	Normal (clear)
Exercise-Induced Collapse	**WT/WT**	Normal (clear)
Familial Nephropathy (Cocker Spaniel Type)	**WT/WT**	Normal (clear)
Familial Nephropathy (English Springer Spaniel Type)	**WT/WT**	Normal (clear)
Fanconi Syndrome	**WT/WT**	Normal (clear)
Gallbladder Mucoceles	**WT/WT**	Normal (clear)
Glanzmann's Thrombasthenia (Great Pyrenees Type)	**WT/WT**	Normal (clear)
Glanzmann's Thrombasthenia (Otterhound Type)	**WT/WT**	Normal (clear)
Globoid Cell Leukodystrophy (Irish Setter Type)	**WT/WT**	Normal (clear)
Globoid Cell Leukodystrophy (Terrier Type)	**WT/WT**	Normal (clear)
Glycogen Storage Disease Ia	**WT/WT**	Normal (clear)

Glycogen Storage Disease IIIa	**WT/WT**	Normal (clear)
Glycogen Storage Disease VII (Wachtelhund Type)	**WT/WT**	Normal (clear)
GM1 Gangliosidosis (Alaskan Husky Type)	**WT/WT**	Normal (clear)
GM1 Gangliosidosis (Portuguese Water Dog Type)	**WT/WT**	Normal (clear)
GM1 Gangliosidosis (Shiba Inu Type)	**WT/WT**	Normal (clear)
GM2 Gangliosidosis (Japanese Chin Type)	**WT/WT**	Normal (clear)
GM2 Gangliosidosis (Poodle Type)	**WT/WT**	Normal (clear)
Greyhound Polyneuropathy	**WT/WT**	Normal (clear)
Hemophilia A (Boxer Type)	**WT/WT**	X-Linked Female Normal
Hemophilia A (German Shepherd Dog, Type 1)	**WT/WT**	X-Linked Female Normal
Hemophilia A (German Shepherd Dog, Type 2)	**WT/WT**	X-Linked Female Normal
Hemophilia B (Cairn Terrier Type)	**WT/WT**	X-Linked Female Normal
Hemophilia B (Lhasa Apso Type)	**WT/WT**	X-Linked Female Normal
Hemophilia B (Rhodesian Ridgeback Type)	**WT/WT**	X-Linked Female Normal
Hereditary Cataracts (Australian Shepherd Type)	**WT/WT**	Normal (clear)
Hereditary Cataracts	**WT/WT**	Normal (clear)
Hereditary Footpad Hyperkeratosis (Irish Terrier and Kromfohrländer Type)	**WT/WT**	Normal (clear)
Hereditary Nasal Parakeratosis	**WT/WT**	Normal (clear)
Hereditary Nephritis (Samoyed Type)	**WT/WT**	X-Linked Female Normal

Hyperuricosuria	WT/WT	Normal (clear)
Ichthyosis (Golden Retriever Type 1)	WT/WT	Normal (clear)
Inherited Myopathy of Great Danes	WT/WT	Normal (clear)
Intestinal Cobalamin Malabsorption (Beagle Type)	WT/WT	Normal (clear)
Intestinal Cobalamin Malabsorption (Border Collie Type)	WT/WT	Normal (clear)
Juvenile Laryngeal Paralysis and Polyneuropathy	WT/WT	Normal (clear)
L-2-Hydroxyglutaric Aciduria (Staffordshire Bull Terrier Type)	WT/WT	Normal (clear)
Late Onset Ataxia	WT/WT	Normal (clear)
Leukocyte Adhesion Deficiency, Type I	WT/WT	Normal (clear)
Leukocyte Adhesion Deficiency, Type III	WT/WT	Normal (clear)
May-Hegglin Anomaly	WT/WT	Normal (clear)
Mucopolysaccharidosis I	WT/WT	Normal (clear)
Mucopolysaccharidosis IIIA (Dachshund Type)	WT/WT	Normal (clear)
Mucopolysaccharidosis IIIA (New Zealand Huntaway Type)	WT/WT	Normal (clear)
Mucopolysaccharidosis VII (Shepherd Type)	WT/WT	Normal (clear)
Multidrug Resistance 1	WT/M	Carrier (At-Risk)
Multifocal Retinopathy 1	WT/WT	Normal (clear)
Multifocal Retinopathy 2	WT/WT	Normal (clear)
Multifocal Retinopathy 3	WT/WT	Normal (clear)
Muscular Dystrophy (Golden Retriever Type)	No Result	No Result

Musladin-Lueke Syndrome	No Result	No Result
Myostatin Deficiency (Whippet and Longhaired Whippet Type)	**WT/WT**	Normal (clear)
Myotonia Congenita (Australian Cattle Dog Type)	**WT/WT**	Normal (clear)
Myotonia Congenita (Schnauzer Type)	**WT/WT**	Normal (clear)
Myotubular Myopathy 1	**WT/WT**	X-Linked Female Normal
Narcolepsy (Dachshund Type)	**WT/WT**	Normal (clear)
Narcolepsy (Doberman Pinscher Type)	**WT/WT**	Normal (clear)
Narcolepsy (Labrador Retriever Type)	**WT/WT**	Normal (clear)
Neonatal Cerebellar Cortical Degeneration	**WT/WT**	Normal (clear)
Neonatal Encephalopathy with Seizures	**WT/WT**	Normal (clear)
Neuronal Ceroid Lipofuscinosis (Tibetan Terrier Type)	**WT/WT**	Normal (clear)
Neuronal Ceroid Lipofuscinosis 1	**WT/WT**	Normal (clear)
Neuronal Ceroid Lipofuscinosis 10	**WT/WT**	Normal (clear)
Neuronal Ceroid Lipofuscinosis 2	**WT/WT**	Normal (clear)
Neuronal Ceroid Lipofuscinosis 4A	**WT/WT**	Normal (clear)
Neuronal Ceroid Lipofuscinosis 5 (Australian Cattle Dog/Border Collie Type)	**WT/WT**	Normal (clear)
Neuronal Ceroid Lipofuscinosis 6	**WT/WT**	Normal (clear)
Neuronal Ceroid Lipofuscinosis 8 (Australian Shepherd Type)	**WT/WT**	Normal (clear)
Neuronal Ceroid Lipofuscinosis 8 (Setter Type)	**WT/WT**	Normal (clear)

Osteochondrodysplasia	**WT/WT**	Normal (clear)
Osteogenesis Imperfecta (Beagle Type)	**WT/WT**	Normal (clear)
Osteogenesis Imperfecta (Dachshund Type)	No Result	No Result
Osteogenesis Imperfecta (Golden Retriever Type)	**WT/WT**	Normal (clear)
P2RY12 Receptor Platelet Disorder	**WT/WT**	Normal (clear)
Pembroke Welsh Corgi Duchenne Muscular Dystrophy	**WT/WT**	X-Linked Female Normal
Persistent Müllerian Duct Syndrome	**WT/WT**	Normal (clear)
Polyneuropathy (Leonberger and Saint Bernard Type)	**WT/WT**	Normal (clear)
Pompe Disease	**WT/WT**	Normal (clear)
Prekallikrein Deficiency	**WT/WT**	Normal (clear)
Primary Ciliary Dyskinesia	**WT/WT**	Normal (clear)
Primary Hyperoxaluria	**WT/WT**	Normal (clear)
Primary Lens Luxation	**WT/WT**	Normal (clear)
Primary Open Angle Glaucoma	**WT/WT**	Normal (clear)
Progressive Retinal Atrophy (Basenji Type)	**WT/WT**	Normal (clear)
Progressive Retinal Atrophy (Bullmastiff/Mastiff Type)	**WT/WT**	Normal (clear)
Progressive Retinal Atrophy (Irish Setter Type)	**WT/WT**	Normal (clear)
Progressive Retinal Atrophy (Sloughi Type)	**WT/WT**	Normal (clear)
Progressive Retinal Atrophy, Cone-Rod Dystrophy 1	**WT/WT**	Normal (clear)
Progressive Retinal Atrophy, Cone-Rod Dystrophy 2	No Result	No Result

Progressive Retinal Atrophy, Cone-Rod Dystrophy 3	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Generalized	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Golden Retriever 1	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Golden Retriever 2	WT/WT	Normal (clear)
Progressive Retinal Atrophy, PRA1 (Papillon Type)	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Progressive Rod-Cone Degeneration (prcd)	WT/WT	Normal (clear)
Progressive Retinal Atrophy, Rod-Cone Dysplasia 3	WT/WT	Normal (clear)
Pyruvate Dehydrogenase Deficiency	WT/WT	Normal (clear)
Pyruvate Kinase Deficiency (Basenji Type)	WT/WT	Normal (clear)
Pyruvate Kinase Deficiency (Beagle Type)	WT/WT	Normal (clear)
Pyruvate Kinase Deficiency (Labrador Retriever Type)	WT/WT	Normal (clear)
Pyruvate Kinase Deficiency (Pug Type)	WT/WT	Normal (clear)
Pyruvate Kinase Deficiency (Terrier Type)	WT/WT	Normal (clear)
Renal Cystadenocarcinoma and Nodular Dermatofibrosis	WT/WT	Normal (clear)
Sensory Ataxic Neuropathy	WT	Normal (Clear)
Severe Combined Immunodeficiency Disease (Terrier Type)	WT/WT	Normal (clear)
Severe Combined Immunodeficiency Disease (Wetterhoun Type)	WT/WT	Normal (clear)
Severe Combined Immunodeficiency Disease, X-Linked (Basset Hound Type)	WT/WT	X-Linked Female Normal

Severe Combined Immunodeficiency Disease, X-Linked (Corgi Type)	**WT/WT**	X-Linked Female Normal
Skeletal Dysplasia 2	**WT/WT**	Normal (clear)
Spinal Dysraphism	**WT/WT**	Normal (clear)
Spinocerebellar Ataxia	**WT/WT**	Normal (clear)
Startle Disease	**WT/WT**	Normal (clear)
Thrombopathia (American Eskimo Dog Type)	**WT/WT**	Normal (clear)
Thrombopathia (Basset Hound Type)	**WT/WT**	Normal (clear)
Thrombopathia (Newfoundland Type)	**WT/WT**	Normal (clear)
Trapped Neutrophil Syndrome	**WT/WT**	Normal (clear)
Vitamin D Dependent Rickets, Type II (Pomeranian Type)	**WT/WT**	Normal (clear)
Von Willebrand Disease I	**WT/WT**	Normal (clear)
Von Willebrand Disease II	No Result	No Result
Von Willebrand Disease III (Kooikerhondje Type)	**WT/WT**	Normal (clear)
Von Willebrand Disease III (Scottish Terrier Type)	**WT/WT**	Normal (clear)

WT: wild type (normal) M: mutant Y: Y chromosome (male)

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Canine HealthCheck® is a product of Paw Print Genetics®. This test was developed and its performance determined by Paw Print Genetics®. This laboratory has established and verified the test's accuracy and precision. Because all tests performed are DNA-based, rare genomic variations may interfere with the performance of some tests producing false results. If you think any results are in error, please contact the laboratory for further evaluation.