DNA Test Report

Owner Info

First Name
Jackee

Last Name
Grote

Pet Info

Registered Name
GTK Finn Grote

Date of Birth
8/5/2021

Nickname (Call Name)
GTK Finn Grote

Sample ID
DTGKMBG

Sex
Male

Registration
WS73595010

Country of Origin
US

Microchip ID
991003001253507

Owner Reported Breed
Portuguese Water Dog

Tattoo ID
N/A

Genetic Diversity (Heterozygosity)

GTK Finn Grote's Percentage of Heterozygosity

37%

GTK Finn Grote's genome analysis shows an average level of genetic heterozygosity when compared with other Portuguese Water Dogs.

Typical Range for Portuguese Water Dogs

32 - 39%

Health Conditions Known in This Breed

Genetic Condition	Gene	Risk Variant	Copies	Result
Early-onset PRA (Discovered in the Portuguese Water Dog)	CCDC66	Insertion	0	Clear
GM1 Gangliosidosis (Discovered in the Portuguese Water Dog)	GLB1	G>A	0	Clear
Progressive Rod Cone Degeneration (prcd-PRA)	PRCD	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	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
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	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	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 (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)	Pending	Insertion	0	Clear
Early Retinal Degeneration (Discovered in the Norwegian Elkhound)	STK38L	A>C	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
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
Fanconi Syndrome	FAN1	Deletion	0	Clear

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 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
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

Other Conditions Tested (continued)

Genetic Condition	Gene	Risk Variant	Copies	Result
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
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 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)	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

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	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	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	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)	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
Protein Losing Nephropathy	NPHS1	G>A	0	Clear
Pyruvate Dehydrogenase Phosphatase 1 Deficiency	PDP1	C>T	0	Clear

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
Sensory Neuropathy	FAM134B	Insertion	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

Other Conditions Tested (continued)

Genetic Condition	Gene	Risk Variant	Copies	Result
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)	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

Coat Color

Genetic Trait	Gene	Variant	Copies	Result
Fawn	ASIP	a^{y}	0	No effect
Recessive Black	ASIP	**a**	**1**	**Not black due to this variant**
Tan Points	ASIP	$\mathbf{a^{t}}$	**1**	**Tan points possible**
Dominant Black	CBD103	$\mathbf{K^{B}}$	**2**	**Black possible**
Mask	MC1R	$\mathbf{E^{m}}$	**2**	**Dark Muzzle possible**
Recessive Red (Variant 1)	MC1R	e^{1}	0	No effect
Recessive Red (Variant 2)	MC1R	e^{2}	0	No effect
Recessive Red (Variant 3)	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
Red Intensity	MFSD12	i	0	White to yellow coat shades unlikely
Dilution (Variant 1) Linkage test	MLPH	d^{1}	0	No effect
Dilution (Variant 2)	MLPH	d^{2}	0	No effect
Dilution (Variant 3)	MLPH	d^{3}	0	No effect
Chocolate (Variant 1)	TYRP1	b^{c}	0	No effect
Chocolate (Variant 2)	TYRP1	$\mathbf{b^{s}}$	**1**	**Black features likely, chocolate possible**
Chocolate (Variant 3)	TYRP1	b^{d}	0	No effect
Chocolate (Variant 4)	TYRP1	b^{asd}	0	No effect

Coat Patterns

Genetic Trait	Gene	Variant	Copies	Result
Piebald	MITF	$\mathbf{s^{p}}$	**1**	**White markings possible**

Coat Patterns (continued)

Genetic Trait	Gene	Variant	Copies	Result
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 (Variant 1)	FGF5	**lh^{1}**	2	**Long coat**
Long Hair (Variant 2)	FGF5	lh^{2}	0	No effect
Long Hair (Variant 3)	FGF5	lh^{3}	0	No effect
Long Hair (Variant 4)	FGF5	lh^{4}	0	No effect
Long Hair (Variant 5)	FGF5	lh^{5}	0	No effect
Curly Coat	KRT71	**C**	1	**Soft curl or wave likely**

Hairlessness

Genetic Trait	Gene	Variant	Copies	Result
Hairlessness (Discovered in the Chinese Crested Dog)	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	0	Seasonal shedder

More Coat Traits

Genetic Trait	Gene	Variant	Copies	Result
Hair Ridge	FGF3, FGF4, FGF19, ORAOV1	R	0	No effect
Furnishings	RSPO2	**F**	**2**	**Furnishings likely**
Albino	SLC45A2	c^{al}	0	No effect

Head Shape

Genetic Trait	Gene	Variant	Copies	Result
Short Snout (Variant 2)	BMP3	-	**1**	**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	-	**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**	**1**	**Hind dewclaws possible**

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

PennGen Laboratories | School of Veterinary Medicine | University of Pennsylvania
3900 Delancey Street, Room 4022, Philadelphia, PA 19104
Lab: 215-898-5703 | PennVetDNA@lists.upenn.edu | http://www.vet.upenn.edu/penngen

DNA Testing: Owner/Patient Report 5/9/2022

Submitter Information

Owner's Name Jackee Grote

Patient Information

Official Name	GTK Finn Grote		
Call Name	Finn	**DOB**	8/5/2021 (0 Years 9 Months)
Breed	Portuguese Water Dog	**Sex**	Male (Intact)
Registration #	WS73595010	**Microchip #**	991003001253507

Testing Information

Submission ID	36712		
Testing Date	5/9/2022	**Processed By**	Dr. Paula Henthorn
Test	Juvenile Dilated Cardiomyopathy (JDCM) Linked Marker-DNA [Cheek brushes/swabs]		

Result Information

Genotype 1-1 (Homozygous Normal Markers)

Phenotype Probable Normal (Healthy)

Interpretation 1-1 (Probable Normal) dogs are not expected to develop JDCM, nor are they expected to pass a JDCM-causing allele to their offspring. Due to the inherent nature of linked marker tests, there is a slight chance that a pattern 1-1 dog is a carrier of JDCM and an even smaller chance that a pattern 1-1 dog is affected.

Sincerely,

Paula Henthorn, PhD
Professor of Medical Genetics

Michael Raducha, BS
Research Specialist

PennGen Laboratories | School of Veterinary Medicine | University of Pennsylvania
3900 Delancey Street, Room 4022, Philadelphia, PA 19104
Lab: 215-898-5703 | PennVetDNA@lists.upenn.edu | http://www.vet.upenn.edu/penngen

DNA Testing: Owner/Patient Report 5/9/2022

Submitter Information

Owner's Name Jackee Grote

Patient Information

Official Name	GTK Finn Grote		
Call Name	Finn	**DOB**	8/5/2021 (0 Years 9 Months)
Breed	Portuguese Water Dog	**Sex**	Male (Intact)
Registration #	WS73595010	**Microchip #**	991003001253507

Testing Information

Submission ID	36712		
Testing Date	5/9/2022	**Processed By**	Dr. Margret Casal
Test	Microphthalmia Syndrome (MOS-PWD)-DNA [Cheek brushes/swabs]		

Result Information

Genotype	1-1 (Homozygous Normal)
Phenotype	Healthy (Normal, Clear)
Interpretation	Homozygous Normals (1-1) are not expected to develop signs of Microphthalmia Syndrome (MOS-PWD) and none of their offspring will inherit the disease variant allele. 1 = Normal allele; 2 = Variant allele.

Sincerely,

Paula Henthorn, PhD
Professor of Medical Genetics

Michael Raducha, BS
Research Specialist

Scan

AIS PennHIP

(877) 727-6800 www.antechimagingservices.com

Doctor's Copy

PennHIP Report

Referring Veterinarian: Dr Derek Lowe
Email: FWAH@farrwestanimalhospital.com

Clinic Name: Farr West Animal Hospital
Clinic Address: 1400 North 2000 West
Farr West, UT 84404
Phone: (801) 731-0511
Fax:(801) 731-0769

Patient Information

Client: Grope, Jackie
Patient Name: Finn
Reg. Name:
PennHIP Num: 167676
Species: Canine
Date of Birth: 05 Aug 2021
Sex: Male
Date of Study: 17 Jan 2022
Date of Report: 19 Jan 2022

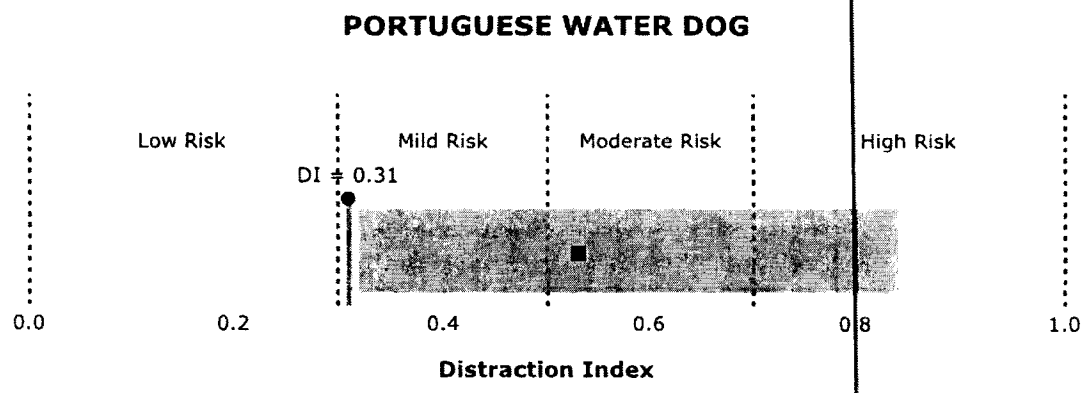
Tattoo Num:
Patient ID: 23938
Registration Num:
Microchip Num: 991003001253507
Breed: PORTUGUESE WATER DOG
Age: 5 months
Weight: 34 lbs/15.4 kgs
Date Submitted: 18 Jan 2022

Findings

Distraction Index (DI): Right DI = 0.25, Left DI = 0.31.
Osteoarthritis (OA): **No radiographic evidence of OA for either hip.**
Cavitation/Other Findings: No cavitation present.

Interpretation

Distraction Index (DI): The laxity ranking is based on the hip with the greater laxity (larger DI). In this case the DI used is 0.31.
OA Risk Category: The DI is between 0.31 and 0.49. This patient is at mild risk for hip OA.
Distraction Index Chart:



BREED STATISTICS: This interpretation is based on a cross-section of 666 canine patients of the PORTUGUESE WATER DOG breed in the AIS PennHIP database. The gray strip represents the central 90% range of DIs (0.32 - 0.84) for the breed. The breed average DI is 0.53 (solid square). The patient DI is the solid circle (0.31).

SUMMARY: The degree of laxity (DI = 0.31) ranks the hip within the tightest 5% of DIs for the breed. This amount of hip laxity places the hip at a mild risk to develop hip OA. **No radiographic evidence of OA for either hip.**

INTERPRETATION AND RECOMMENDATIONS:

No OA/Mild Risk: Low risk to develop radiographic evidence of hip OA early in life, however OA may manifest after 6 years of age or later. Risk of OA increases as DI, age, body weight, and activity level increase. OA susceptibility is breed specific, larger breeds being more susceptible.
Recommendations: Evidence-based strategies to lower the risk of dogs developing hip OA or to treat those having OA fall into 5 modalities.* For detailed information, consult these documents.* Use any or all of these modalities as needed:
1) For acute or chronic pain prescribe NSAID PO short or long term. Amantadine can be added if response is marginal or if a neuropathic component to the pain is suspected.
2) Optimize body weight, keep lean, at BCS = 5/9.
3) Prescribe therapeutic exercise at intensities that do not precipitate lameness.
4) Administer polysulfated glycosaminoglycans IM or SQ, so-called DMOAD.
5) Feed an EPA-rich prescription diet preventatively for dogs at risk for OA or therapeutically for dogs already showing radiographic signs of OA.
At the present time there is inadequate evidence to confidently recommend any of the many other remedies to prevent or treat OA. Studies are in progress. Consider repeating radiographs at periodic intervals to determine the rate of OA progression and adjust treatment accordingly. Older dogs may show clinical signs such as chronic pain, reluctance to go stairs or jump onto the bed, and stiffness particularly after resting. It is unlikely that end-stage hip disease will develop for dogs at this risk level so surgical therapy for the pain of hip OA would rarely be indicated.
Breeding Recommendations: Please consult the PennHIP Manual.

* From WSAVA Global Pain Council Guidelines and the 2015 AAHA/AAFP Pain Management Guidelines

COMMENTS:

None

Orthopedic Foundation for Animals

Elbow Dysplasia Evaluation Report

A Not-for-Profit Organization

GTK FINN GROTE
registered name

PORTUGUESE WATER DOG
breed

film/test/lab #

991003001253507
tattoo/microchip/DNA profile

2324714
application number

01/20/2022
date of report

WS73595010
registration no.

M
sex

08/05/2021
date of birth

5
age at evaluation in months

Owner

JACKIE GROTE
213 S 100 W
WELLSVILLE UT 84339

Veterinarian

FARR WEST ANIMAL HOSPITAL
1400 N 2000 W
OGDEN UT 84404

Preliminary Elbow Dysplasia Evaluation Report

ELBOW JOINTS -- FLEXED LATERAL VIEW

√ negative for elbow dysplasia	L √	R √

ELBOW DYSPLASIA

GRADE I	L _____	R _____
GRADE II	L _____	R _____
GRADE III	L _____	R _____

RADIOGRAPHIC FINDINGS

degenerative joint disease (DJD)	L _____	R _____
ununited anconeal process (UAP)	L _____	R _____
fragmented coronoid process (FCP)	L _____	R _____
osteochondrosis	L _____	R _____

G.G. KELLER, DVM, MS, DACVR
CHIEF OF VETERINARY SERVICES

2300 E Nifong Blvd | Columbia MO 65201 | Phone (573) 442-0418 | Fax (573) 875-5073 | ofa@offa.org | www.ofa.org

Orthopedic Foundation for Animals

Hip Dysplasia Evaluation Report

A Not-for-Profit Organization

GTK FINN GROTE
registered name

PORTUGUESE WATER DOG
breed

film/test/lab #

991003001253507
tattoo/microchip/DNA profile

2324714
application number

01/20/2022
date of report

WS73595010
registration no.

M
sex

08/05/2021
date of birth

5
age at evaluation in months

Owner

JACKIE GROTE
213 S 100 W
WELLSVILLE UT 84339

Veterinarian

FARR WEST ANIMAL HOSPITAL
1400 N 2000 W
OGDEN UT 84404

Preliminary Hip Dysplasia Evaluation Report

_____ **EXCELLENT HIP JOINT CONFORMATION**
superior hip joint conformation as compared with other individuals of the same breed and age

_____ **GOOD HIP JOINT CONFORMATION**
well formed hip joint conformation as compared with other individuals of the same breed and age

__√__ **FAIR HIP JOINT CONFORMATION**
minor irregularities of the hip joint conformation as compared with other individuals of the same breed and age

_____ **BORDERLINE HIP JOINT CONFORMATION**
marginal hip joint conformation of indeterminate status with respect to hip dysplasia at this time -- Repeat study in six months

_____ **MILD HIP DYSPLASIA**
radiographic evidence of minor dysplastic changes of the hip joints

_____ **MODERATE HIP DYSPLASIA**
well defined radiographic evidence of dysplastic changes of the hip joints

_____ **SEVERE HIP DYSPLASIA**
radiographic evidence of marked dysplastic changes of the hip joints

RADIOGRAPHIC FINDINGS

_____ subluxation
_____ remodeling of femoral head/neck
_____ osteoarthritis/degenerative joint disease
_____ shallow acetabula
_____ acetabular rim/edge change

_____ unilateral pathology _____ left _____ right
_____ transitional vertebra
_____ spondylosis
_____ panosteitis

G.G. KELLER, DVM, MS, DACVR
CHIEF OF VETERINARY SERVICES

2300 E Nifong Blvd | Columbia MO 65201 | Phone (573) 442-0418 | Fax (573) 875-5073 | ofa@offa.org | www.ofa.org