

ORTHOPEDIC FOUNDATION FOR ANIMALS, INC.

FE TARO
registered name

BORDER COLLIE
breed

film/test/lab #

985141002560275
tattoo/microchip/DNA profile

2366934
application number

06/06/2022
date of report

RESULTS:

The results of the examination submitted to OFA indicate that no evidence of patellar luxation was recognized.

DN66657501, ABC496748
registration no.

M
sex

02/08/2020
date of birth

27
age at evaluation in months



A Not-For-Profit Organization

BCO-PA444/27M/P-VPI
O.F.A. NUMBER

*This number issued with the right to correct or
revoke by the Orthopedic Foundation for Animals.*

NORMAL - PRACTITIONER

owner
HEATHER WHERLEY
182 CHINO DR
CHINO VALLEY AZ 86323

OFA eCert



Verify QR scan

G.G. Keller, DVM

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

www.ofa.org

This electronic OFA certificate was generated on: 06/06/2022

This certification can be verified on the OFA website by entering the animal's registration number into the orange search box located at the top of the page or by scanning the QR code above.

If there are any errors on this certificate, please email **CORRECTIONS@OFA.ORG** to request a correction.

Orthopedic Foundation for Animals, Inc.
2300 E. Nifong Blvd.
Columbia, MO 65201-3806

OFA website: www.ofa.org
E-mail address: ofa@ofa.org
Phone number: 573-442-0418
Fax number: 573-875-5073

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06/06/2022
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RESULTS:

Normal cardiovascular examination via auscultation - No evidence of congenital or acquired heart disease was noted. Since acquired heart disease may develop later, these evaluation results remain valid for one year, and annual examinations are recommended to continue to monitor cardiac health.

DN66657501, ABC496748
registration no.

M
sex

02/08/2020
date of birth

27
age at evaluation in months



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BCO-BCA87/27M/P-VPI
O.F.A. NUMBER

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NORMAL/CLEAR - PRACTITIONER

owner
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182 CHINO DR
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FE TARO
registered name

BORDER COLLIE
breed

film/test/lab #

985141002560275
tattoo/microchip/DNA profile

2366934
application number

06/09/2022
date of report

RESULTS:

The elbows are normal. No radiographic evidence of elbow dysplasia is present.

DN66657501, ABC496748
registration no.

M
sex

02/08/2020
date of birth

27
age at evaluation in months



A Not-For-Profit Organization

BCO-EL6190M27-P-VPI
O.F.A. NUMBER

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NORMAL

owner
HEATHER WHERLEY
182 CHINO DR
CHINO VALLEY AZ 86323



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BORDER COLLIE
breed

film/test/lab #

985141002560275
tattoo/microchip/DNA profile

2366934
application number

06/09/2022
date of report

RESULTS:

No radiographic evidence of hip dysplasia is present. The consensus evaluation is: **EXCELLENT**

DN66657501, ABC496748
registration no.

M
sex

02/08/2020
date of birth

27
age at evaluation in months



A Not-For-Profit Organization

BCO-15641E27M-P-VPI
O.F.A. NUMBER

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owner **HEATHER WHERLEY**
182 CHINO DR
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OFA eCert



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Optimal Selection™

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BR14 542
Taro, Border Collie

Registered Name: Taro

Owner: Heather Wherley

Nickname: Taro

Country: United States

Registration ID: Not received yet

Testing date: 2020/8/7

Microchip: 985141002560275

Breed: Border Collie

Gender: Male

Test results - Known disorders in the breed

Disorder	Type	Mode of Inheritance	Result
Degenerative Myelopathy, (DM; SOD1A)	Neurological Disorders	Autosomal Recessive (Incomplete Penetrance)	Clear
Dental Hypomineralisation; mutation originally found in Border Collie	Other Disorders	Autosomal Recessive	Clear
Early Adult Onset Deafness (EAOD) in Border Collies (linked marker test)	Other Disorders	Autosomal Recessive (Incomplete Penetrance)	Clear
Goniodysgenesis and glaucoma; mutation originally found in Border Collie	Ocular Disorders	Autosomal Recessive	Clear
Intestinal Cobalamin Malabsorption or Imerslund-Gräsbeck Syndrome, (IGS); mutation originally found in Border Collie	Metabolic Disorders	Autosomal Recessive	Clear
Sensory Neuropathy; mutation originally found in Border Collie	Neurological Disorders	Autosomal Recessive	Clear
Trapped Neutrophil Syndrome, (TNS)	Blood Disorders	Autosomal Recessive	Clear

On behalf of Genoscooper Laboratories,


SIGNATURE

Jonas Donner, PhD, Head of Research and Development
at Genoscooper Laboratories

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Owner: Heather Wherley

Nickname: Taro

Country: United States

Registration ID: Not received yet

Testing date: 2020/8/7

Microchip: 985141002560275

Breed: Border Collie

Gender: Male

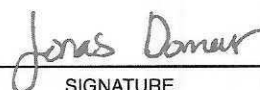
Test results - New potential disorders in the breed

Disorder	Type	Mode of Inheritance	Result
Cystinuria Type II-A; mutation originally found in Australian Cattle Dog	Renal Disorders	Autosomal Dominant	Clear
Myotonia Congenita; mutation originally found in Australian Cattle Dog	Muscular Disorders	Autosomal Recessive	Clear

Test results for pharmacogenetics

Disorder	Mode of Inheritance	Result
Multi-Drug Resistance 1, (MDR1)	Autosomal Dominant	Clear

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Laboratories

BR14 542

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Registered Name: Taro

Owner: Heather Wherley

Nickname: Taro

Country: United States

Registration ID: Not received yet

Testing date: 2020/8/7

Microchip: 985141002560275

Breed: Border Collie

Gender: Male

Test results - Traits - page 1

Coat Type

Trait	Genotype	Description
Coat Length	I/I	The dog is genetically long-haired.
Furnishings / Improper Coat in Portuguese Water Dogs (marker test)	GG/CC	The dog is not genetically likely to express furnishings.
KRT71 c.451C>T (p.Arg151Trp)	C/C	The dog does not carry any copies of the tested allele causing curly coat. The dog most likely has non-curly hair.
MC5R c.237A>T	C/C	The dog does not carry the tested allele associated with low shedding. This genotype has no effect on a dog with furnishings, but non-wire-haired dog with this genotype is likely heavy or seasonal shedder.
SGK3 (p.Val96Glyfs)	I/I	The dog does not carry the tested hairlessness allele of the American Hairless Terrier.
SGK3 c.137_138insT (p.Glu47Glyfs)	D/D	The dog does not carry the tested hairlessness allele of the Scottish Deerhound.

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Owner: Heather Wherley

Nickname: Taro

Country: United States

Registration ID: Not received yet

Testing date: 2020/8/7

Microchip: 985141002560275

Breed: Border Collie

Gender: Male

Test results - Traits - page 2

Coat Colour

Trait	Genotype	Description
Colour Locus E - Extensions	Em/E	The dog is likely to have a dark mask.
Colour Locus B - Brown	b/b	The dog is likely to have brown pigment.
Colour Locus K - Dominant Black	KB/ky KB/kbr kbr/ky kbr/kbr	The dog is genetically dominant black or brindle.
Colour Locus A - Agouti	at/at	The dog has genetically tan points or saddle tan pattern.
Colour Locus S - Piebald or extreme white spotting	S/sp	The dog is likely to have solid coat colour or few white spots in its coat.
Colour Locus H - Harlequin	h/h	The dog doesn't have harlequin pattern.
Dilution (d ² allele)	D/D	The dog does not carry any copies of the rare d ² allele associated with dilution in Chow Chow, French Bulldog, Sloughi and Thai Ridgeback.
Merle (M allele)	M/m M*/m	The dog may have merle pattern. It carries one copy of a <i>SILV</i> gene SINE insertion (either normal merle, atypical merle, cryptic merle or harlequin merle).
Saddle Tan (<i>RALY</i> gene dupl.)	dup/dup	The dog may have tan points if it has tan point genotype at the A locus.
Albinism (caL-allele)	C/C	The dog does not carry the tested mutation for albinism.

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Owner: Heather Wherley

Nickname: Taro

Country: United States

Registration ID: Not received yet

Testing date: 2020/8/7

Microchip: 985141002560275

Breed: Border Collie

Gender: Male

Test results - Traits - page 3

Body Size

Trait	Genotype	Description
<i>IGF1</i> (chr15:41221438)	A/G	The dog is heterozygous for the ancestral allele. This means that it carries one copy of the genetic allele typically associated with small body mass and one copy typically associated with large body mass.
<i>IGF1R</i> c.611G>A (p.Arg204His)	G/G	The dog carries two ancestral alleles typically found in larger-sized breeds.
<i>ACSL4</i> chrX:82919525C>T	C/C	The dog doesn't have the allele associated with large skeletal size and heavy muscling with considerable back fat thickness.
<i>IGSF1</i> p.Asp768Glu	C/C	The dog doesn't have the allele associated with heavy muscling
<i>IRS4</i> chrX:82296039	A/A	The dog has two copies of the allele associated with large body size.
<i>FGF4</i> insertion	D/D	The dog is homozygous for the ancient allele. The dog is likely to have legs of normal length.
<i>STC2</i> (chr4:39182836)	A/T	The dog carries one copy of the allele associated with reduced body size and one copy of the allele associated with no size reduction.
<i>GHR1</i> (p.Glu191Lys)	A/G	The dog carries one ancestral allele and one derived allele.
<i>GHR2</i> (p.Pro177Leu)	C/C	The dog has two copies of the ancestral allele associated with larger body size.
<i>HMG2</i> (chr10:8348804)	G/G	The dog has two copies of the ancestral allele associated with larger body size.

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Owner: Heather Wherley

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Registration ID: Not received yet

Testing date: 2020/8/7

Microchip: 985141002560275

Breed: Border Collie

Gender: Male

Test results - Traits - page 4

Morphology

Trait	Genotype	Description
<i>BMP3</i> c.1344C>A (p.Phe448Leu)	C/C	The dog does not carry the tested allele typically associated with shortened head (brachycephaly). The dog is more likely to have an elongated head (dolichocephaly).
<i>SMOC2</i>	D/D	The dog does not carry the tested allele typically associated with shortened head (brachycephaly). The dog is more likely to have an elongated head (dolichocephaly).
chr10:11072007	T/T	The dog does not carry an allele typically associated with floppy ears. The dog is more likely to have pricked than floppy ears.
<i>T</i> c.189C>G (p.Ile63Met)	C/C	The dog does not carry the tested bobtail-causing genetic variant. The dog is most likely long-tailed.
<i>EPAS1</i> (p.Gly305Ser)	G/G	The dog does not carry the tested variant associated with adaptation to high altitudes.
<i>LIMBR1</i> DC-1	G/G	The dog does not carry the tested allele associated with hind dewclaws in Asian breeds. The dog is not likely to have hind dewclaws.
<i>LIMBR1</i> DC-2	G/G	The dog does not carry the tested allele associated with hind dewclaws in western breeds. The dog is likely not to have hind dewclaws.
<i>AXL4</i>	D/D	The dog does not have the tested allele typically associated with blue eyes in Siberian Huskies. The dog is likely to have brown eyes.

On behalf of Genoscooper Laboratories,



SIGNATURE

Jonas Donner, PhD, Head of Research and Development
at Genoscooper Laboratories

Test results - Additional disorders found in other breeds - page 1

Blood Disorders - page 1

Disorder	Mode of Inheritance	Result
Bleeding disorder due to P2RY12 defect	Autosomal Recessive	Clear
Canine Cyclic Neutropenia, Cyclic Hematopoiesis, Grey Collie Syndrome, (CN)	Autosomal Recessive	Clear
Canine Leukocyte Adhesion Deficiency (CLAD), type III	Autosomal Recessive	Clear
Canine Scott Syndrome, (CSS)	Autosomal Recessive	Clear
Factor IX Deficiency or Hemophilia B; mutation Gly379Glu	X-linked Recessive	Clear
Factor IX Deficiency or Hemophilia B; mutation originally found in Airedale Terrier	X-linked Recessive	Clear
Factor IX Deficiency or Hemophilia B; mutation originally found in Lhasa Apso	X-linked Recessive	Clear
Factor VII Deficiency	Autosomal Recessive	Clear
Factor VIII Deficiency or Hemophilia A; mutation originally found in Boxer	X-linked Recessive	Clear
Factor VIII Deficiency or Hemophilia A; mutation originally found in German Shepherd Dog	X-linked Recessive	Clear
Factor VIII Deficiency or Hemophilia A; mutation originally found in Havanaese	X-linked Recessive	Clear
Factor VIII Deficiency or Hemophilia A; mutation originally found in Old English Sheepdog	X-linked Recessive	Clear
Factor VIII Deficiency or Hemophilia A; p.Cys548Tyr mutation originally found in German Shepherd	X-linked Recessive	Clear
Factor XI Deficiency	Autosomal Dominant (Incomplete Penetrance)	Clear
Familial Congenital Methemoglobinemia; mutation originally found in Pomeranian	Autosomal Recessive	Clear
Glanzmann Thrombasthenia Type I, (GT); mutation originally found in Pyrenean Mountain Dog	Autosomal Recessive	Clear
Glanzmann Thrombasthenia Type I, (GT); mutation originally found in mixed breed dogs	Autosomal Recessive	Clear
Hereditary Elliptocytosis		Clear
Hereditary Phosphofructokinase (PFK) Deficiency	Autosomal Recessive	Clear
Macrothrombocytopenia; disease-linked variant originally found in Norfolk and Cairn Terrier	Autosomal Recessive	Clear
May-Hegglin Anomaly (MHA)	Autosomal Dominant	Clear

Test results - Additional disorders found in other breeds - page 2

Blood Disorders - page 2

Disorder	Mode of Inheritance	Result
Prekallikrein Deficiency	Autosomal Recessive	Clear
Pyruvate Kinase Deficiency; mutation originally found in Basenji	Autosomal Recessive	Clear
Pyruvate Kinase Deficiency; mutation originally found in Beagle	Autosomal Recessive	Clear
Pyruvate Kinase Deficiency; mutation originally found in Pug	Autosomal Recessive	Clear
Pyruvate Kinase Deficiency; mutation originally found in West Highland White Terrier	Autosomal Recessive	Clear
Von Willebrand's Disease (vWD) Type 1	Autosomal Recessive	Clear
Von Willebrand's Disease (vWD) Type 2	Autosomal Recessive	Clear
Von Willebrand's Disease (vWD) Type 3; mutation originally found in Kooikerhondje	Autosomal Recessive	Clear
Von Willebrand's Disease (vWD) Type 3; mutation originally found in Scottish Terrier	Autosomal Recessive	Clear
Von Willebrand's Disease (vWD) Type 3; mutation originally found in Shetland Sheepdog	Autosomal Recessive	Clear

Test results - Additional disorders found in other breeds - page 3

Ocular Disorders - page 1

Disorder	Mode of Inheritance	Result
Canine Multifocal Retinopathy 1, (CMR1); mutation originally found in Mastiff-related breeds	Autosomal Recessive	Clear
Canine Multifocal Retinopathy 2, (CMR2); mutation originally found in Coton de Tulear	Autosomal Recessive	Clear
Canine Multifocal Retinopathy 3, (CMR3); mutation originally found in Lapponian Herder	Autosomal Recessive	Clear
Cone Degeneration, (CD) or Achromatopsia; mutation originally found in Alaskan Malamute	Autosomal Recessive	Clear
Cone Degeneration, (CD) or Achromatopsia; mutation originally found in German Shepherd Dog	Autosomal Recessive	Clear
Cone Degeneration, (CD) or Achromatopsia; mutation originally found in German Shorthaired Pointer	Autosomal Recessive	Clear
Cone-Rod Dystrophy 1, (crd1); mutation originally found in American Staffordshire Terrier	Autosomal Recessive	Clear
Cone-Rod Dystrophy 2, (crd2); mutation originally found in American Pit Bull Terrier	Autosomal Recessive	Clear
Cone-Rod Dystrophy, (cord1-PRA / crd4)	Autosomal Recessive (Incomplete Penetrance)	Clear
Cone-Rod Dystrophy, Standard Wirehaired Dachshund, (crd SWD)	Autosomal Recessive	Clear
Congenital Eye Disease; mutation originally found in Irish Soft-Coated Wheaten Terrier	Autosomal Recessive	Clear
Dominant Progressive Retinal Atrophy, (DPRA)	Autosomal Dominant	Clear
Early Onset PRA (EOPRA); mutation originally found in Portuguese Water Dog	Autosomal Recessive	Clear
Early Retinal Degeneration, (erd); mutation originally found in Norwegian Elkhound	Autosomal Recessive	Clear
Generalized Progressive Retinal Atrophy	Autosomal Recessive	Clear
Golden Retriever Progressive Retinal Atrophy 1, (GR_PRA 1)	Autosomal Recessive	Clear
Italian Greyhound Progressive Retinal Atrophy 1 (IG-PRA1)	Autosomal Recessive	Clear
Primary Hereditary Cataract, (PHC); mutation originally found in Australian Shepherd	Autosomal Dominant (Incomplete Penetrance)	Clear
Primary Lens Luxation, (PLL)	Autosomal Recessive	Clear
Primary Open Angle Glaucoma, (POAG); mutation originally found in Basset Fauve de Bretagne	Autosomal Recessive	Clear
Primary Open Angle Glaucoma, (POAG); mutation originally found in Beagle	Autosomal Recessive	Clear

Test results - Additional disorders found in other breeds - page 4

Ocular Disorders - page 2

Disorder	Mode of Inheritance	Result
Primary Open Angle Glaucoma, (POAG); mutation originally found in Norwegian Elkhound	Autosomal Recessive	Clear
Primary Open Angle Glaucoma, (POAG); mutation originally found in Petit Basset Griffon Vendeen	Autosomal Recessive	Clear
Primary lens luxation (PLL) and glaucoma; mutation originally found in Shar Pei	Autosomal Recessive	Clear
Progressive Retinal Atrophy (PRA4); mutation originally found in Lhasa Apso	Autosomal Recessive	Clear
Progressive Retinal Atrophy Type III, (PRA type III); mutation originally found in Tibetan Spaniel and Tibetan Terrier	Autosomal Recessive	Clear
Progressive Retinal Atrophy, (CNGA1-PRA); mutation originally found in Shetland Sheepdog	Autosomal Recessive	Clear
Progressive Retinal Atrophy, (PAP1_PRA); mutation originally found in Papillon and Phalene	Autosomal Recessive	Clear
Progressive Retinal Atrophy, (PRA); mutation originally found in Basenji	Autosomal Recessive	Clear
Progressive Retinal Atrophy, (PRA); mutation originally found in Swedish Vallhund	Autosomal Recessive	Clear
Rod-Cone Dysplasia 1, (rcd1); mutation originally found in Irish Setter	Autosomal Recessive	Clear
Rod-Cone Dysplasia 1a, (rdc1a); mutation originally found in Sloughi	Autosomal Recessive	Clear
Rod-Cone Dysplasia 3, (rcd3)	Autosomal Recessive	Clear
X-Linked Progressive Retinal Atrophy 1, (XLPR1)	X-linked Recessive	Clear
X-Linked Progressive Retinal Atrophy 2, (XLPR2; Type A PRA)	X-linked Recessive	Clear

Cardiac Disorders

Disorder	Mode of Inheritance	Result
Dilated Cardiomyopathy, (DCM); mutation originally found in Schnauzer	Autosomal Recessive	Clear
Long QT Syndrome	Autosomal Dominant	Clear

Test results - Additional disorders found in other breeds - page 5

Endocrine Disorders

Disorder	Mode of Inheritance	Result
Congenital Dysphormogenic Hypothyroidism with Goiter; mutation originally found in Shih Tzu	Autosomal Recessive	Clear
Congenital Hypothyroidism; mutation originally found in Tenterfield Terrier	Autosomal Recessive	Clear
Congenital Hypothyroidism; mutation originally found in Toy Fox and Rat Terrier	Autosomal Recessive	Clear

Immunological Disorders

Disorder	Mode of Inheritance	Result
Autosomal Recessive Severe Combined Immunodeficiency, (ARSCID)	Autosomal Recessive	Clear
Complement 3 (C3) Deficiency	Autosomal Recessive	Clear
Myeloperoxidase Deficiency	Autosomal Recessive	Clear
Severe Combined Immunodeficiency in Frisian Water Dogs, (SCID)	Autosomal Recessive	Clear
X-Linked Severe Combined Immunodeficiency (XSCID); mutation originally found in Basset Hound	X-linked Recessive	Clear
X-Linked Severe Combined Immunodeficiency (XSCID); mutation originally found in Cardigan Welsh Corgi	X-linked Recessive	Clear

Test results - Additional disorders found in other breeds - page 6

Renal Disorders

Disorder	Mode of Inheritance	Result
2,8-Dihydroxyadenine (2,8-DHA) urolithiasis	Autosomal Recessive	Clear
Cystic Renal Dysplasia and Hepatic Fibrosis; mutation originally found in Norwich Terrier	Autosomal Recessive	Clear
Cystinuria Type I-A; mutation originally found in Newfoundland Dog	Autosomal Recessive	Clear
Cystinuria Type II-A; mutation originally found in Australian Cattle Dog	Autosomal Dominant	Clear
Fanconi Syndrome	Autosomal Recessive	Clear
Hyperuricosuria, (HUU)	Autosomal Recessive	Clear
Polycystic Kidney Disease in Bull Terriers, (BTPKD)	Autosomal Dominant	Clear
Primary Hyperoxaluria, (PH); mutation originally found in Coton de Tulear	Autosomal Recessive	Clear
Protein Losing Nephropathy, (PLN); NPHS1 gene variant		Clear
Renal Cystadenocarcinoma and Nodular Dermatofibrosis, (RCND)	Autosomal Dominant	Clear
X-Linked Hereditary Nephropathy, (XLHN)	X-linked Recessive	Clear
X-Linked Hereditary Nephropathy, (XLHN); mutation originally found in Navasota Dog	X-linked Recessive	Clear
Xanthinuria, Type 1a; mutation originally found in mixed breed dogs	Autosomal Recessive	Clear
Xanthinuria, Type 2a; mutation originally found in Toy Manchester Terrier	Autosomal Recessive	Clear
Xanthinuria, Type 2b; mutation originally found in Cavalier King Charles Spaniel and English Cocker Spaniel	Autosomal Recessive	Clear

Test results - Additional disorders found in other breeds - page 7

Metabolic Disorders

Disorder	Mode of Inheritance	Result
Glycogen Storage Disease Type II or Pompe's Disease, (GSD II)	Autosomal Recessive	Clear
Glycogen Storage Disease Type IIIa, (GSD IIIa)	Autosomal Recessive	Clear
Glycogen Storage Disease Type Ia, (GSD Ia)	Autosomal Recessive	Clear
Hypocatalasia or Acatlasemia	Autosomal Recessive	Clear
Intestinal Cobalamin Malabsorption or Imerslund-Gräsbeck Syndrome, (IGS); mutation originally found in Beagle	Autosomal Recessive	Clear
Mucopolysaccharidosis Type IIIA, (MPS IIIA); mutation originally found in Dachshund	Autosomal Recessive	Clear
Mucopolysaccharidosis Type IIIA, (MPS IIIA); mutation originally found in New Zealand Huntaway	Autosomal Recessive	Clear
Mucopolysaccharidosis Type VII, (MPS VII); mutation originally found in Brazilian Terrier	Autosomal Recessive	Clear
Mucopolysaccharidosis Type VII, (MPS VII); mutation originally found in German Shepherd	Autosomal Recessive	Clear
Pyruvate Dehydrogenase Phosphatase 1 (PDP1) Deficiency	Autosomal Recessive	Clear

Test results - Additional disorders found in other breeds - page 8

Muscular Disorders

Disorder	Mode of Inheritance	Result
Cavalier King Charles Spaniel Muscular Dystrophy, (CKCS-MD)	X-linked Recessive	Clear
Centronuclear Myopathy, (CNM); mutation originally found in Great Dane	Autosomal Recessive	Clear
Centronuclear Myopathy, (CNM); mutation originally found in Labrador Retriever	Autosomal Recessive	Clear
Duchenne or Dystrophin Muscular Dystrophy, (DMD); mutation originally found in Golden Retriever	X-linked Recessive	Clear
Duchenne or Dystrophin Muscular Dystrophy, (DMD); mutation originally found in Norfolk Terrier	X-linked Recessive	Clear
Muscular Dystrophy, Ullrich-type; mutation originally found in Landseer	Autosomal Recessive	Clear
Myostatin deficiency (Double Muscling, "Bully")	Autosomal Recessive	Clear
Myotonia Congenita; mutation originally found in Australian Cattle Dog	Autosomal Recessive	Clear
Myotubular Myopathy; mutation originally found in Rottweiler	X-linked Recessive	Clear
Nemaline Myopathy; mutation originally found in American Bulldog	Autosomal Recessive	Clear
X-Linked Myotubular Myopathy	X-linked Recessive	Clear

Test results - Additional disorders found in other breeds - page 9

Neurological Disorders - page 1

Disorder	Mode of Inheritance	Result
Acral Mutilation Syndrome, (AMS)	Autosomal Recessive	Clear
Alaskan Husky Encephalopathy, (AHE)	Autosomal Recessive	Clear
Alexander Disease (AxD); mutation originally found in Labrador Retriever	Autosomal Dominant	Clear
Bandera's Neonatal Ataxia, (BNAt)	Autosomal Recessive	Clear
Benign Familial Juvenile Epilepsy or Remitting Focal Epilepsy	Autosomal Recessive	Clear
Cerebellar Cortical Degeneration, (CCD); mutation originally found in Vizsla	Autosomal Recessive	Clear
Cerebral Dysfunction; mutation originally found in Friesian Stabyhoun	Autosomal Recessive	Clear
Dandy-Walker-Like Malformation (DWLM); mutation originally found in Eurasier	Autosomal Recessive	Clear
Early-Onset Progressive Polyneuropathy; mutation originally found in Alaskan Malamute	Autosomal Recessive	Clear
Fetal Onset Neuroaxonal Dystrophy, (FNAD)	Autosomal Recessive	Clear
Hereditary Ataxia or Cerebellar Ataxia; mutation originally found in Old English Sheepdog and Gordon Setter	Autosomal Recessive	Clear
Hereditary Ataxia; mutation originally found in in Norwegian Buhund	Autosomal Recessive	Clear
Hyperekplexia or Startle Disease	Autosomal Recessive	Clear
Hypomyelination; mutation originally found in Weimaraner	Autosomal Recessive	Clear
Juvenile Myoclonic Epilepsy, (JME); mutation originally found in Rhodesian Ridgeback	Autosomal Recessive	Clear
Juvenile encephalopathy; mutation originally found in Parson Russell Terrier	Autosomal Recessive	Clear
L-2-Hydroxyglutaric aciduria, (L2HGA); mutation originally found in Staffordshire Bull Terrier	Autosomal Recessive	Clear
L-2-Hydroxyglutaric aciduria, (L2HGA); mutation originally found in West Highland White Terrier	Autosomal Recessive	Clear
Lagotto Storage Disease, (LSD)	Autosomal Recessive	Clear
Neonatal Cerebellar Cortical Degeneration or Cerebellar Abiotrophy, (NCCD)	Autosomal Recessive	Clear
Neonatal Encephalopathy with Seizures, (NEWS)	Autosomal Recessive	Clear

Test results - Additional disorders found in other breeds - page 10

Neurological Disorders - page 2

Disorder	Mode of Inheritance	Result
Neuroaxonal Dystrophy (NAD); mutation originally found in Rottweiler	Autosomal Recessive	Clear
Neuroaxonal Dystrophy (NAD); mutation originally found in Spanish Water Dog	Autosomal Recessive	Clear
Neuroaxonal Dystrophy, (NAD); mutation originally found in Papillon	Autosomal Recessive	Clear
Neuronal Ceroid Lipofuscinosis 1, (NCL1); mutation originally found in Dachshund	Autosomal Recessive	Clear
Neuronal Ceroid Lipofuscinosis 10, (NCL10); mutation originally found in American Bulldog	Autosomal Recessive	Clear
Neuronal Ceroid Lipofuscinosis 8, (NCL8); mutation originally found in Alpine Dachsbracke	Autosomal Recessive	Clear
Neuronal Ceroid Lipofuscinosis 8, (NCL8); mutation originally found in Australian Shepherd	Autosomal Recessive	Clear
Neuronal Ceroid Lipofuscinosis 8, (NCL8); mutation originally found in English Setter	Autosomal Recessive	Clear
Neuronal Ceroid Lipofuscinosis, (NCL7); mutation originally found in Chinese Crested Dog and Chihuahua	Autosomal Recessive	Clear
Polyneuropathy with ocular abnormalities and neuronal vacuolation, (POANV); mutation originally found in Black Russian Terrier	Autosomal Recessive	Clear
Progressive Early-Onset Cerebellar Ataxia; mutation originally found in Finnish Hound	Autosomal Recessive	Clear
Shaking Puppy Spongiform LeucoEncephaloMyelopathy, (SLEM); mutation originally found in Border Terrier	Autosomal Recessive	Clear
Spinocerebellar Ataxia with Myokymia and/or Seizures (SCA)	Autosomal Recessive	Clear
Spinocerebellar Ataxia/ Late-Onset Ataxia (SCA, LOA)	Autosomal Recessive	Clear
Spongy Degeneration with Cerebellar Ataxia, (SDCA1); mutation originally found in Belgian Shepherd Dog	Autosomal Recessive	Clear
Spongy Degeneration with Cerebellar Ataxia, (SDCA2); mutation originally found in Belgian Shepherd Dog	Autosomal Recessive	Clear
X-Linked Tremors; mutation originally found in English Springer Spaniel	X-linked Recessive	Clear

Test results - Additional disorders found in other breeds - page 11

Neuromuscular Disorders

Disorder	Mode of Inheritance	Result
Congenital Myasthenic Syndrome (CMS); mutation originally found in Labrador Retriever	Autosomal Recessive	Clear
Congenital Myasthenic Syndrome, (CMS); mutation originally found in Jack Russell Terrier	Autosomal Recessive	Clear
Congenital Myasthenic Syndrome, (CMS); mutation originally found in Old Danish Pointing Dog	Autosomal Recessive	Clear
Episodic Falling Syndrome, (EFS)	Autosomal Recessive	Clear
Exercise-Induced Collapse, (EIC)	Autosomal Recessive (Incomplete Penetrance)	Clear
GM1 Gangliosidosis; mutation originally found in Portuguese Water Dog	Autosomal Recessive	Clear
GM2 Gangliosidosis, mutation originally found in Japanese Chin	Autosomal Recessive	Clear
GM2 Gangliosidosis; mutation originally found in Toy Poodle	Autosomal Recessive	Clear
Globoid Cell Leukodystrophy or Krabbe Disease, (GLD); mutation originally found in Irish Setter	Autosomal Recessive	Clear
Globoid Cell Leukodystrophy or Krabbe Disease, (GLD); mutation originally found in Terriers	Autosomal Recessive	Clear
Paroxysmal Dyskinesia, (PxD); mutation originally found in Irish Soft Coated Wheaten Terrier	Autosomal Recessive	Clear

Test results - Additional disorders found in other breeds - page 12

Skeletal Disorders

Disorder	Mode of Inheritance	Result
Chondrodysplasia; mutation originally found in Norwegian Elkhound and Karelian Bear Dog	Autosomal Recessive	Clear
Cleft Palate; Cleft Lip and Palate with Syndactyly; ADAMTS20 gene mutation originally found in Nova Scotia Duck Tolling Retriever	Autosomal Recessive	Clear
Cleft Palate; DLX6 gene mutation originally found in Nova Scotia Duck Tolling Retriever	Autosomal Recessive	Clear
Cranio-mandibular Osteopathy, (CMO); mutation associated with terrier breeds	Autosomal Dominant (Incomplete Penetrance)	Clear
Hereditary Vitamin D-Resistant Rickets, (HVDRR)	Autosomal Recessive	Clear
Osteochondrodysplasia; mutation originally found in Miniature Poodle	Autosomal Recessive	Clear
Osteochondromatosis; mutation originally found in American Staffordshire Terrier	Autosomal Dominant	Clear
Osteogenesis Imperfecta, (OI); mutation originally found in Beagle	Autosomal Dominant	Clear
Osteogenesis Imperfecta, (OI); mutation originally found in Dachshund	Autosomal Recessive	Clear
Skeletal Disease (Hypophosphatasia); mutation originally found in Karelian Bear Dog	Autosomal Recessive	Clear
Skeletal Dysplasia 2, (SD2)	Autosomal Recessive	Clear
Spondylocostal Dysostosis	Autosomal Recessive	Clear
Van den Ende-Gupta Syndrome, (VDEGS)	Autosomal Recessive	Clear

Test results - Additional disorders found in other breeds - page 13

Dermal Disorders

Disorder	Mode of Inheritance	Result
Dystrophic Epidermolysis Bullosa; mutation originally found in Central Asian Ovcharka	Autosomal Recessive	Clear
Dystrophic Epidermolysis Bullosa; mutation originally found in Golden Retriever	Autosomal Recessive	Clear
Epidermolytic Hyperkeratosis	Autosomal Recessive	Clear
Focal Non-Epidermolytic Palmoplantar Keratoderma, (FNEPPK); mutation originally found in Dogue de Bordeaux	Autosomal Recessive	Clear
Hereditary Footpad Hyperkeratosis, (HFH)	Autosomal Recessive	Clear
Hereditary Nasal Parakeratosis, (HNPK); mutation originally found in Greyhound	Autosomal Recessive	Clear
Ichthyosis; mutation originally found in American Bulldog	Autosomal Recessive	Clear
Ichthyosis; mutation originally found in Great Dane	Autosomal Recessive	Clear
Lamellar Ichthyosis, (LI)	Autosomal Recessive	Clear
Lethal Acrodermatitis, (LAD); mutation originally found in in Bull Terrier and Miniature Bull Terrier	Autosomal Recessive	Clear
Ligneous Membranitis	Autosomal Recessive	Clear
Musladin-Lueke syndrome, (MLS)	Autosomal Recessive	Clear
X-Linked Ectodermal Dysplasia, (XHED)	X-linked Recessive	Clear

Test results - Additional disorders found in other breeds - page 14

Other Disorders

Disorder	Mode of Inheritance	Result
Acute Respiratory Distress Syndrome, (ARDS); mutation originally found in Dalmatian	Autosomal Recessive	Clear
Amelogenesis Imperfecta, (AI); mutation originally found in Italian Greyhound	Autosomal Recessive	Clear
Amelogenesis Imperfecta, (AI); mutation originally found in Parson Russell Terrier	Autosomal Recessive	Clear
Congenital Keratoconjunctivitis Sicca and Ichthyosiform Dermatitis, (CKCSID)	Autosomal Recessive	Clear
Lung Developmental Disease; mutation originally found in Airedale Terrier	Autosomal Recessive	Clear
Narcolepsy; mutation originally found in Dachshund	Autosomal Recessive	Clear
Narcolepsy; mutation originally found in Labrador Retriever	Autosomal Recessive	Clear
Persistent Müllerian Duct Syndrome, (PMDS); mutation originally found in Miniature Schnauzer	Autosomal Recessive	Clear
Primary Ciliary Dyskinesia, (PCD)	Autosomal Recessive	Clear

APPENDIX

Explanation of the results of the tested disorders

Autosomal recessive inheritance (ARI)

Clear - A dog carries no copies of the tested mutation and has no or reduced likelihood of developing and passing on the disease/condition.

Carrier - A dog carries one copy of the tested mutation. Carriers typically have a normal, healthy appearance but pass on the mutation to approximately 50% of their offspring.

At risk - A dog carries two copies of the tested mutation and is at high or increased risk of developing the disease/condition.

Autosomal dominant inheritance (ADI)

Clear - A dog carries no copies of the tested mutation and has no or reduced likelihood of developing and passing on the disease/condition.

At risk - A dog carries one or two copies of the tested mutation and is at high or increased risk of developing the disease/condition.

X-linked recessive inheritance (X-linked)

Clear - A dog carries no copies of the tested mutation and has no or reduced likelihood of developing and passing on the disease/condition.

Carrier - Female carriers typically have a normal, healthy appearance but carry one copy of the tested mutation on one of their X chromosomes. As males only have one X chromosome, there are no male carriers.

At risk - Female dogs at risk carry two mutated copies of the tested mutation. Males carry one copy of the tested mutation on their single X chromosome. Dogs at risk are at high or increased risk of developing the disease/condition.

Please note that the descriptions above are generalized based on typically observed inheritance patterns. When obtaining a 'carrier' or 'at risk' test result, always refer to the corresponding online test documentation for more detailed information on the condition and any exceptions.



BR14 542
Taro, Border Collie

Terms and Conditions

[block-terms-and-conditions](#)

American Border Collie Association, Inc.

Certificate of Registration

ABC No: 496748

Name FE TARO Sex Male Date of Birth 2/8/2020 Tran. No. Litter Females 2 Litter Males 4

Owner HEATHER WHERLEY Breeder: SCOTT REDDEN Color and Markings: RED MERLE; Rough ; Large

182 CHINO DR
CHINO VALLEY, AZ
86323

P.O. BOX 41
BURNES, CO
80426

T.H. MOSS ABC 402175

BRAD BUNDERSON
GRANTSVILLE, UT

RICK SCRIVNER
UNION CITY, OK

CAP ABC 118493

CASEY/JULIE RINDAL
ROY, MT

T.H. SUE ABC 342855

ROBIN W. DILLON
MT. HERMON, LA

ABC 69468

CASEY/JULIE RINDAL, PAULS VALL
JILL ABC 62058

CASEY/JULIE RINDAL, ROY, MT
DOG ABC 293065

BILL RIVERS, BRANDON, MS
LIZ ABC 276340

RICK SCRIVNER, UNION CITY, OK
KING ABC 221531

ERIC WANNMAN, BUHL, ID
JACKIE ABC 248858

TRENT NEF, TOLEDO, WA
PHANTOM ABC 394259

SARA/JOE MICHAELS, MAGNA, UT
PANDORA ABC 368507

JOE MICHAELS, MAGNA, UT
BEN ISDS 187728

JAMES HYLAND, BURNCOURT, CAHIF
JET ISDS 239369

JAMES HYLAND, BURNCOURT, CAHIF
JOE ISDS 253124

P. ROBINSON, HALIFAX, YORKS.,
DOT ISDS 244468

B. EVANS, LLANFARIAN, ABERYS,
CHIP ISDS 224138

M. L. EVANS, DOLGELLAU, GWYNEDD
ERYRI SIAN ISDS 248052

K. B. WILLIAMS, GWYNEDD, WALES,
@ROOK ABC 138214

CHRISTINE E. KOVAL, HOUSATONIC,
TBC HATTIE ABC 261970

ANNE DEVINE, CONCRETE, WA
This the 23 day of October, 2020

Signature

Deborah N. Bailey

Transfer of Ownership To:

Name: CHRISTINE E. KOVAL
Address: HOUSATONIC, MA

This the day of

SIGNATURE OF PREVIOUS OWNER(S)

This is to certify that the above named and described Border Collie has been registered in the Stud Book of the American Border Collie Association that the Association has the right to correct and/or cancel this certificate for cause under its rules and regulations.
@Hips Veterinary Readologist approved (Of A or Canadian Equivalent)
#G B International Champion #G B National Champion *USBCA Finals Champion #CEA Normal
Note: If this dog is named a confirmation champion by any registry after January 1, 2004, its ABCA registration will be rescinded and its offspring will not be eligible for registration with the American Border Collie Association.

ABCA, PO Box 535, Pine Mountain, GA 31822
abca@americandordercollie.org (706) 663-5999