

Kit type: Essential

ID kit: EDHGRDG

Test date: 2022-04-24

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## Cruiser's Profile

### Pet information

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**Registered name** Cruiser

**Date of birth**

2022-01-11

**Sex**

M

**Neutered**

No

### Top breeds

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100% Australian Shepherd

### Predicted ideal adult weight

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44-77 lbs

### Health summary

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At Risk 0 conditions

Carrier 0 conditions

Clear 29 conditions

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## Breed ancestry

Cruiser appears to be 100% Australian Shepherd.



Herding

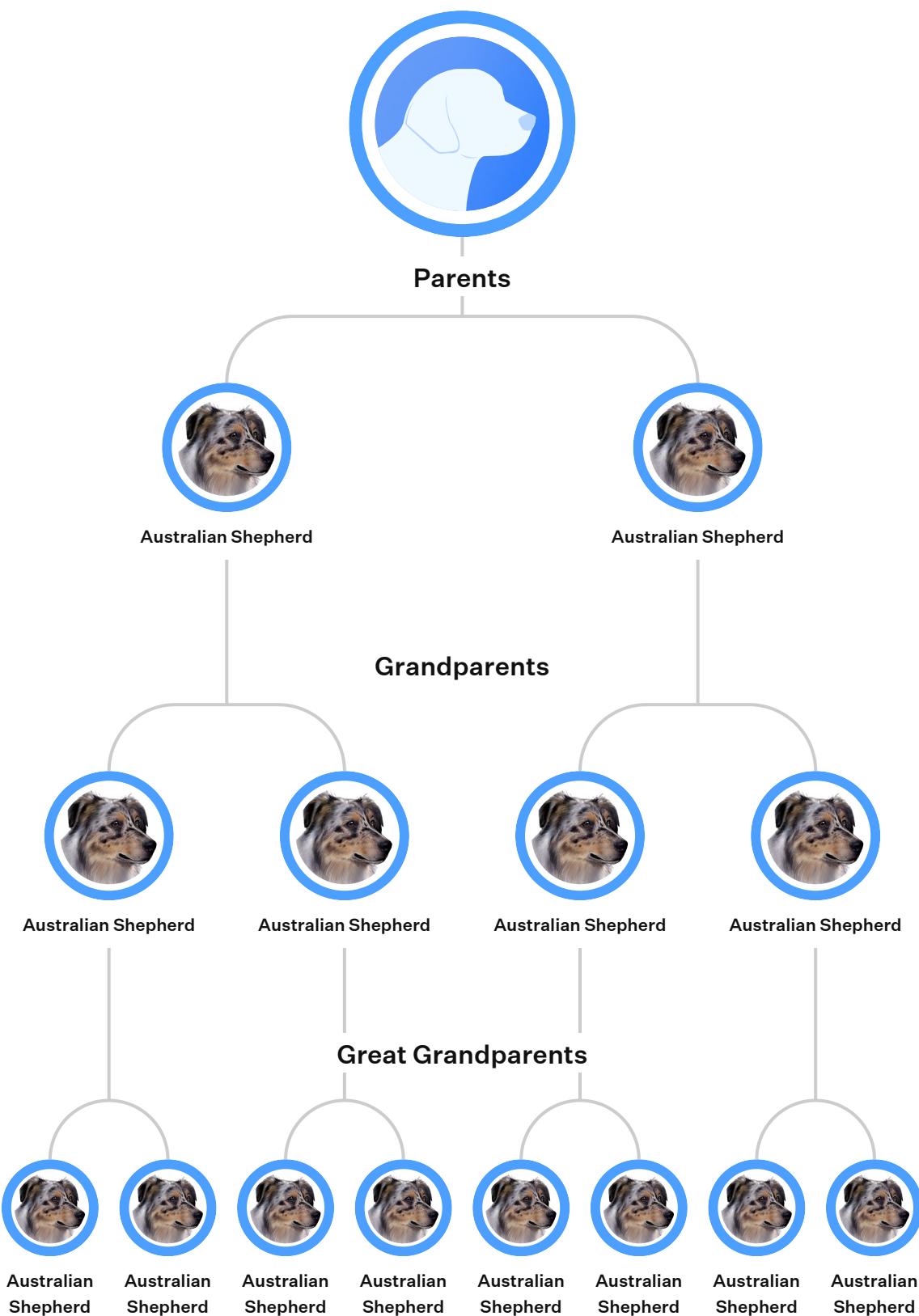
 100 % Australian Shepherd

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## Family Tree



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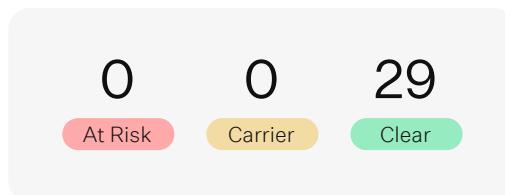
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## Summary of health conditions

### Key Findings

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We detected 0 genetic conditions in Cruiser's DNA.



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## Health conditions tested

Genetic Condition	Gene	Risk Variant	Copies	Inheritance	Result
<b>Canine Leukocyte Adhesion Deficiency (CLAD), type III</b>	FERMT3	Insertion	0	AR	Clear
<b>Canine Scott Syndrome</b>	ANO6	G>A	0	AR	Clear
<b>Complement 3 Deficiency</b>	C3	Deletion	0	AR	Clear
<b>Factor VII Deficiency</b>	F7	G>A	0	AR	Clear
<b>Factor XI Deficiency</b>	FXI	Insertion	0	AD	Clear
<b>Glanzmann Thrombasthenia Type I (Discovered in Great Pyrenees)</b>	ITGA2B	C>G	0	AR	Clear
<b>Glanzmann Thrombasthenia Type I (Discovered in mixed breed dogs)</b>	ITGA2B	C>T	0	AR	Clear
<b>Hemophilia A (Discovered in Old English Sheepdog)</b>	FVIII	C>T	0	XR	Clear
<b>Hemophilia A (Discovered in the Boxer)</b>	FVIII	C>G	0	XR	Clear
<b>Hemophilia A (Discovered in the German Shepherd Dog - Variant 1)</b>	FVIII	G>A	0	XR	Clear
<b>Hemophilia A (Discovered in the German Shepherd Dog - Variant 2)</b>	FVIII	G>A	0	XR	Clear
<b>Hemophilia A (Discovered in the Havanese)</b>	FVIII	Insertion	0	XR	Clear
<b>Hemophilia B</b>	FIX	G>A	0	XR	Clear
<b>Hemophilia B (Discovered in the Airedale Terrier)</b>	FIX	Insertion	0	XR	Clear
<b>Hemophilia B (Discovered in the Lhasa Apso)</b>	FIX	Deletion	0	XR	Clear
<b>May-Hegglin Anomaly</b>	MYH9	G>A	0	AD	Clear
<b>MDR1 Medication Sensitivity</b>	MDR1/ABCB1	Deletion	0	AD	Clear
<b>P2RY12-associated Bleeding Disorder</b>	P2RY12	Deletion	0	AR	Clear
<b>Prekallikrein Deficiency</b>	KLKB1	T>A	0	AR	Clear
<b>Severe Combined Immunodeficiency (Discovered in Frisian Water Dogs)</b>	RAG1	G>T	0	AR	Clear

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## Health conditions tested

Genetic Condition	Gene	Risk Variant	Copies	Inheritance	Result
<b>Severe Combined Immunodeficiency (Discovered in Russell Terriers)</b>	PRKDC	G>T	0	AR	Clear
<b>Trapped Neutrophil Syndrome</b>	VPS13B	Deletion	0	AR	Clear
<b>von Willebrand's Disease, type 1</b>	VWF	G>A	0	AD	Clear
<b>von Willebrand's Disease, type 2</b>	VWF	T>G	0	AR	Clear
<b>von Willebrand's Disease, type 3 (Discovered in the Kooiker Hound)</b>	VWF	G>A	0	AR	Clear
<b>von Willebrand's Disease, type 3 (Discovered in the Scottish Terrier)</b>	VWF	Deletion	0	AR	Clear
<b>von Willebrand's Disease, type 3 (Discovered in the Shetland Sheepdog)</b>	VWF	Deletion	0	AR	Clear
<b>X-Linked Severe Combined Immunodeficiency (Discovered in the Basset Hound)</b>	IL2RG	Deletion	0	XR	Clear
<b>X-Linked Severe Combined Immunodeficiency (Discovered in the Cardigan Welsh Corgi)</b>	IL2RG	Insertion	0	XR	Clear

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## Traits

### Coat Color

	Gene	Variant	Copies	Result
<b>Fawn</b>	ASIP	ay	0	No effect
<b>Recessive Black</b>	ASIP	a	0	No effect
<b>Tan Points</b>	ASIP	at	2	Tan points possible
Two copies, or occasionally one copy, of this variant may result in a black and tan coat color pattern.				
<b>Dominant Black</b>	CBD103	K <sup>B</sup>	0	No effect
<b>Mask</b>	MC1R	E <sup>m</sup>	0	No effect
<b>Recessive Red (e1)</b>	MC1R	e <sup>1</sup>	0	No effect
<b>Widow's Peak (Discovered in the Afghan Hound and Saluki)</b>	MC1R	e <sup>G</sup>	0	No effect

### Color Modification

	Gene	Variant	Copies	Result
<b>Chocolate (bc)</b>	TYRP1	b <sup>c</sup>	1	Black features likely, chocolate possible
To show chocolate coloration a dog must inherit two chocolate variants, one from each parent. This can either be two copies of a particular variant, such as this one ("bc"), or two of any combination of chocolate variants.				
<b>Chocolate (bs)</b>	TYRP1	b <sup>s</sup>	0	No effect

### Coat Patterns

	Gene	Variant	Copies	Result
<b>Piebald</b>	MITF	s <sup>p</sup>	0	No effect

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## Coat Patterns

	Gene	Variant	Copies	Result
<b>Merle</b>	PMEL	M	1	Merle possible
Most dogs with one copy of the Merle variant will show Merle patterning. Most dogs with two copies will be mostly white, but in some cases will show Merle patterning. Some dogs with this variant will not show the Merle pattern. This is because the Merle variant can sometimes be shortened (known as cryptic or atypical Merle), and these forms do not have an effect on appearance.				
<b>Harlequin</b>	PSMB7	H	0	No effect
<b>Saddle Tan</b>	RALY	-	0	No effect

## Coat Length and Curl

	Gene	Variant	Copies	Result
<b>Long Hair (lh1)</b>	FGF5	lh <sup>1</sup>	2	Long coat
To show a long coat, a dog must inherit two copies of a Long Hair variant, one from each parent. This can either be two copies of a particular variant, such as this one (lh1) or two of any combination of long hair variants. However, there are other variants suspected to influence coat length.				
<b>Curly Coat</b>	KRT71	C	0	No effect

## Hairlessness

	Gene	Variant	Copies	Result
<b>Hairlessness (Discovered in the Chinese Crested Dog)</b> Linkage test	FOXI3	Hrc <sup>c</sup>	0	No effect
<b>Hairlessness (Discovered in the American Hairless Terrier)</b>	SGK3	hra <sup>ht</sup>	0	No effect
<b>Hairlessness (Discovered in the Scottish Deerhound)</b>	SKG3	hr <sup>sd</sup>	0	No effect

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## Shedding

	Gene	Variant	Copies	Result
Reduced Shedding	MC5R	sd	0	Seasonal shedder

## More Coat Traits

	Gene	Variant	Copies	Result
Hair Ridge	FGF3, FGF4, FGF19, ORAOV1	R	0	No effect
Furnishings	RSPO2	F	0	No effect
Albino	SLC45A2	c <sup>al</sup>	0	No effect

## Head Shape

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

## Eye Color

	Gene	Variant	Copies	Result
Blue Eyes (Discovered in the Siberian Husky)	ALX4	-	1	Blue eyes possible

Dogs with one or two copies of the blue eye variant are likely to have one or two blue eyes.

## Ears

	Gene	Variant	Copies	Result
Floppy Ears	MSRB3	-	0	Pricked ears more likely

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## Extra Toes

	Gene	Variant	Copies	Result
<b>Hind Dewclaws (Discovered in Asian breeds)</b>	LMBR1	DC-1	0	No effect
<b>Hind Dewclaws (Discovered in Western breeds)</b>	LMBR1	DC-2	0	No effect

## More Body Features

	Gene	Variant	Copies	Result
<b>Back Muscle and Bulk</b>	ACSL4	-	0	No effect
<b>High Altitude Adaptation</b>	EPAS1	-	0	No effect
<b>Short Legs (Chondrodysplasia, CDPA)</b>	FGF4	-	0	No effect
<b>Short Tail</b>	T-box	T	0	Full tail length likely

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## Glossary of genetic terms

### Test result definitions

**At Risk:** Based on the disorder's mode of inheritance, the dog inherited a number of genetic variant(s) which increases the dog's risk of being diagnosed with the associated disorder.

**Carrier:** The dog inherited one copy of a genetic variant when two copies are usually necessary to increase the dog's risk of being diagnosed with the associated disorder. While carriers are usually not at risk of clinical expression of the disorder, carriers of some complex variants may be associated with a low risk of developing the disorder.

**Clear:** The dog did not inherit the genetic variant(s) associated with the disorder and will not be at elevated risk of being diagnosed with the disorder due to this genotype. However, similar clinical signs could develop from different genetic or clinical causes.

**Inconclusive:** An inconclusive result indicates a confident call could not be made based on the data for that genetic variant. Health testing is performed in replicates, and on occasion the outcomes do not agree. This may occur due to an unusual sequence of DNA in the region tested, multiple cell genotypes present due to chimerism or acquired mutations, or due to quality of the DNA sample.

### Inheritance mode definitions

**Autosomal Recessive (AR):** For autosomal recessive disorders, dogs with two copies of the genetic variant are at risk of developing the associated disorder. Dogs with one copy of the variant are considered carriers and are usually not at risk of developing the disorder. However, carriers of some complex variants grouped in this category may be associated with a low risk of developing the disorder. Dogs with one or two copies may pass the disorder-associated variant to their puppies if bred.

**Autosomal Dominant (AD):** For autosomal dominant disorders, dogs with one or two copies of the genetic variant are at risk of developing the associated disorder. Inheriting two copies of the variant may increase the risk of development of the disorder or cause the condition to be more severe. These dogs may pass the disorder-associated variant to their puppies if bred.

**X-linked Recessive (XR):** For X-linked recessive disorders, the genetic variant is found on the X chromosome. Female dogs must inherit two copies of the variant to be at risk of developing the condition, whereas male dogs only need one copy to be at risk. Males and females with any copies of the variant may pass the disorder-associated variant to their puppies if bred.

**X-linked Dominant (XD):** For X-linked dominant disorders, the genetic variant is found on the X chromosome. Both male and female dogs with one copy of the variant are at risk of developing the disorder. Females inheriting two copies of the variant may be at higher risk or show a more severe form of the disorder than with one copy. Males and females with any copies of the variant may pass the disorder-associated variant to their puppies if bred.

**Mitochondrial (MT):** Unlike the two copies of genomic DNA held in the nucleus, there are thousands of mitochondria in each cell of the body, and each holds its own mitochondrial DNA (mtDNA). Mitochondria are called the "powerhouses" of the cell. For a dog to be at risk for a mitochondrial disorder, it must inherit a certain ratio of mtDNA with the associated variant compared to normal mtDNA. mtDNA is inherited only from the mother.