embark

# DNA Test Report

## Dog Information

| | |
|---|---|
| **Freda**<br>NAME | **Female**<br>SEX |
| **German Shepherd Dog**<br>BREED ANCESTRY | **July 5th, 2023**<br>DATE OF BIRTH |
| **American Kennel Club (AKC)**<br>REGISTRATION | **n/a**<br>MICROCHIP |

**Pine Hill German Shepherds**
OWNER NAME

**Canine Genetic Health Screen**
TEST

**October 7th, 2024**
TEST DATE

## BREED HEALTH TESTS

To ensure completeness, this report includes all carrier and at risk results for this dog.

| DISEASE | GENE | GENOTYPE | RESULT | TESTING RECOMMENDED BY |
|---|---|---|---|---|
| Canine Leukocyte Adhesion Deficiency Type III, CLAD III | FERMT3 | NN | Clear | |
| Degenerative Myelopathy, DM | SOD1A | GG | Clear | |
| Factor VIII Deficiency, Hemophilia A | F8 Exon 1 | GG | Clear | |
| Factor VIII Deficiency, Hemophilia A | F8 Exon 11 | GG | Clear | |
| Hyperuricosuria and Hyperuricemia or Urolithiasis, HUU | SLC2A9 (Exon 5) | GG | Clear | |
| MDR1 Drug Sensitivity | ABCB1 | NN | Clear | |
| Mucopolysaccharidosis Type VII, Sly Syndrome, MPS VII | GUSB | GG | Clear | |
| Achromatopsia | CNGA3 (Exon 7 SNP) | CC | Clear | |
| Ichthyosis | ASPRV1 Exon 2 | TT | Clear | |
| Platelet Factor X Receptor Deficiency, Scott Syndrome | TMEM16F | GG | Clear | |
| Renal Cystadenocarcinoma and Nodular Dermatofibrosis, RCND | FLCN | GG | Clear | |
| X-linked Ectodermal Dysplasia, Anhidrotic Ectodermal Dysplasia, XHED | EDA | GG | Clear | |
| Copper Toxicosis (Accumulating) | ATP7B | GA | 1 Variant | |

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**Freda**
**NAME**

## INBREEDING AND DIVERSITY

| Genetic Diversity | RESULT | GENETIC RESULT |
|---|---|---|
| **Coefficient Of Inbreeding** | | **37%** |
| **MHC Class II - DLA DRB1** | | **High Diversity** |
| **MHC Class II - DLA DQA1 and DQB1** | | **High Diversity** |

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## Dog Information

**Freda**
NAME

## TRAIT TESTS (1/3)

| Coat Color | RESULT | GENETIC RESULT |
|---|---|---|
| E Locus (MC1R) | Can have a melanistic mask | $E^mE$ |
| K Locus (CBD103) | More likely to have a patterned haircoat | $k^yk^y$ |
| Intensity Loci | Any light hair likely yellow or tan | Intermediate Red Pigmentation |
| A Locus (ASIP) | Agouti (Wolf Sable) coat color pattern | $a^wa^w$ |
| D Locus (MLPH) | Dark areas of hair and skin are not lightened | DD |
| Cocoa (HPS3) | No co alleles, not expressed | NN |
| B Locus (TYRP1) | Black or gray hair and skin | BB |
| Saddle Tan (RALY) | Not expressed | II |
| S Locus (MITF) | Likely to have little to no white in coat | SS |
| M Locus (PMEL) | No merle alleles | mm |
| R Locus (USH2A) | Likely no impact on coat pattern | Rr |

# DNA Test Report

## Dog Information

**Freda**
NAME

## TRAIT TESTS (2/3)

| Coat Color | RESULT | GENETIC RESULT |
|---|---|---|
| H Locus (Harlequin) | No harlequin alleles | hh |
| Panda White Spotting | Not expected to display Panda pattern | NN |

| Other Coat Traits | RESULT | GENETIC RESULT |
|---|---|---|
| Furnishings (RSPO2) | Likely unfurnished (no mustache, beard, and/or eyebrows) | II |
| Coat Length (FGF5) | Likely short or mid-length coat | ShSh |
| Shedding (MC5R) | Likely heavy/seasonal shedding | CC |
| Coat Texture (KRT71) | Likely straight coat | CC |
| Hairlessness (FOXI3) | Very unlikely to be hairless | NN |
| Hairlessness (SGK3) | Very unlikely to be hairless | NN |
| Oculocutaneous Albinism Type 2 (SLC45A2) | Likely not albino | NN |

| Other Body Features | RESULT | GENETIC RESULT |
|---|---|---|
| Muzzle Length (BMP3) | Likely medium or long muzzle | CC |
| Tail Length (T) | Likely normal-length tail | CC |

# DNA Test Report

## Dog Information

**Freda**
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## TRAIT TESTS (3/3)

| Other Body Features | RESULT | GENETIC RESULT |
|---|---|---|
| Hind Dewclaws (LMBR1) | Unlikely to have hind dew claws | CC |
| Chondrodysplasia (Chr. 18 FGF4 Retrogene) | Not indicative of chondrodysplasia (normal leg length) | NN |
| Blue Eye Color (ALX4) | Less likely to have blue eyes | NN |
| Back Muscling & Bulk, Large Breed (ACSL4) | Likely normal muscling | CC |

| Body Size | RESULT | GENETIC RESULT |
|---|---|---|
| Body Size (IGF1) | Larger | NN |
| Body Size (IGFR1) | Larger | GG |
| Body Size (STC2) | Larger | TT |
| Body Size (GHR - E191K) | Larger | GG |
| Body Size (GHR - P177L) | Larger | CC |

| Performance | RESULT | GENETIC RESULT |
|---|---|---|
| Altitude Adaptation (EPAS1) | Normal altitude tolerance | GG |
| Appetite (POMC) | Normal food motivation | NN |