Gmail

Kelsey Keefe <hello@kelseykeefe.net>

Fwd: Familial Hypercholesterolemia in Eurasiers genetic test results

[redacted] Tue, Oct 6, 2026 at 9:03 AM

To: Kelsey Keefe <hello@kelseykeefe.net>

---------- Forwarded message ---------
From: **Canine Genetics Lab** <cgl@umn.edu>
Date: Tue, Oct 6, 2026, 9:01 AM
Subject: Familial Hypercholesterolemia in Eurasiers genetic test results
To: [redacted]

Hello Connor-

Thank you for participating in genetic research on **familial hypercholesterolemia in Eurasiers**. We have identified a mutation that we believe is responsible. It is in a gene that helps clear cholesterol from the blood.

To date, both affected dogs that we have tested have 2 copies of the mutation. All healthy dogs are either clear or carriers (1 copy). This suggests that it is an autosomal recessive disorder, which fits with the inheritance for similar mutations in non-human mammals (cats, pigs, rabbits). This said, the carriers are all relatively young (2-5 years old), and we cannot say whether or not they might develop lipid problems as they age. Fortunately, in other non-human species, the carriers either stay normal or have only mild lipid elevations that are not problematic.

I am reporting results for your dog:

Stella	Gestalt On Poinsettia	NP88808603	**CLEAR. No copies of the mutation.**

After we have completed additional validation of results with the University of Bern we will send a formal report.

Here is some information about **breeding outcomes and recommendations**:

We have designated the letter D to indicate the deleterious (hypercholesterolemia risk) form of the gene and N to indicate the normal form of the gene. A dog's particular combination of N or D forms of the gene is known as its genotype. The genotype of a clear dog is designated as N/N, they have no copies of the hypercholesterolemia mutation; a carrier dog is designated as D/N. Clear (N/N) dogs are NOT at risk for developing this hypercholesterolemia disorder. We currently believe that carrier (D/N) dogs are also not at increased risk, but more data is needed to confirm this. Below are the chances any given puppy in a litter from the indicated mating will have the genotype of N/N, D/N or D/D. Matings that produce an affected (D/D) dog are not recommended, and are shown in **red**.

Matings that should not produce affected dogs (Again, we cannot fully rule out some risk in carriers at this stage but believe the risk is low.)

- Clear (N/N) x Clear (N/N) = 100% Clear (N/N)
- Clear (N/N) x Carrier (D/N) = 50% Clear (N/N), 50% Carrier (D/N)

    - (This is an average, individual litters may see anywhere from 100% Clear to 100% Carrier)
- Clear (N/N) x Affected (D/D) = 100% Carrier (D/N)

Matings that can produce CaOx1 affected (D/D) dogs and are NOT recommended:

- Carrier (D/N) x Carrier (D/N) = 25% Clear (N/N), 50% Carrier (D/N), **25% Affected (D/D)**
    - (This is an average, individual litters may see more or less of any result)
- Carrier (D/N) x Affected (D/D) = 50% Carrier (D/N), **50% Affected (D/D)**
    - (This is an average, individual litters may see anywhere from 100% Carrier to 100% Affected)
- Affected (D/D) x Affected (D/D) = **100% Affected (D/D)**

We do not currently recommend exclusion of carrier (D/N) dogs from the breeding population. We do recommend avoiding matings that have the potential to produce hypercholesterolemia affected offspring as detailed above. As long as one of the two parents is clear (N/N), affected offspring should not be produced.

Please reach out with any questions.

Kind regards,

Katie

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