



## U.S. Trotting Association

6130 S. Sunbury Rd., Westerville, OH 43081-9309 • [www.ustrotting.com](http://www.ustrotting.com)

Phone (toll free U.S. & Canada): 877.800.USTA (8782) • Phone: 614.224.2291

Fax (toll free U.S. & Canada): 844.229.1338 • Fax: 614.224.4575

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April 2024

### **To All Standardbred Breeders:**

Genetic abnormalities are a reality for most species, and the understanding of these conditions continues to evolve with scientific advancements. Every effort should be made within the Standardbred breed to identify animals that carry these genetic factors. While the United States Trotting Association has not identified any genetic conditions in Standardbreds, it is possible the discovery of such mutations may occur in the future using new scientific tools and studies. The USTA has partnered with the University of California – Davis to help research abnormalities in the Standardbred breed. We feel it is prudent to stay ahead of any developments related to genetic abnormalities.

If you have a foal born (dead or alive) that you feel is abnormal, please fill out and return the “Abnormal Foal Reporting” form (form Reg8) and the UC Davis consent form, along with photos and any available necropsy reports, to:

United States Trotting Association

Attention: Gabby Fleming

6130 S. Sunbury Rd.

Westerville, OH 43081

You can also email the documentation to [Gabby.Fleming@ustrotting.com](mailto:Gabby.Fleming@ustrotting.com).

For the study, obtaining two -10 ml purple top (AKA EDTA tubes) blood samples is preferred. However, if blood is not available, hair samples can be sent in. For either sample type, fill out the “Horse Information for Genetic Testing” form (form DNA8a) and mail with hair, or along with a blood sample, directly to UC Davis to preserve the quality of the sample for examination.

Enclosed is an Instructions for Obtaining Samples and a Samples Guide for what to do for certain situations regarding a foal. If you have questions about this study, please contact Gabby Fleming via email (as above) or call 614.224.2291, ext. 3231.

Your participation is appreciated, and you will receive results of the findings when available. Any data collected as part of participation in this study **will remain confidential**, but any of this data may be used for scientific purposes including publication of results **without identifying a particular animal, owner, or breeder**.

Respectfully,

**The United States Trotting Association**



# Instructions for Obtaining Samples

## Samples Guide for Abnormal Foal Study

If you have a ***Live Foal:***

Option #1 (Preferred)

Send 10-20mL of blood in a lavender top (EDTA) tube (typically two large purple top tubes).

- a. Ship overnight on ice (preferred) - please do not freeze blood samples, they just need to be cool or refrigerated).
- b. It is ok to send via 2-day shipping with ice.

Option #2

Send 50+ hair follicles.

- a. Tape hairs to the Horse Information for Genetic Testing with UC Davis form (form DNA8a) per the "Instructions for Obtaining Samples" page.

***If euthanasia is planned, please collect hair follicles before or immediately after euthanasia.***

If you have a ***Dead Foal:***

- 1) Ideally, have your veterinarian collect a tissue sample and ship as soon as possible on dry ice with overnight shipping. If dry ice is not available, ship on ice packs, as cold as possible. Do not place the sample in any fixing agents, as they will damage the DNA.
  - a. Liver is the ideal tissue sample for DNA extraction.
  - b. If collecting in the field, tissue samples such as a muscle biopsy, skin biopsy, or ear punch are acceptable.
    - i. If collecting a small sample such as a skin biopsy or ear punch, please supply 3+ samples.
  - c. Many other types of samples are acceptable as well. Please contact Gabby Fleming to confirm if a different sample type is suitable.
- 2) Additionally, or if collecting a tissue sample is not possible, send 75 to 100+ hair follicles
  - a. If only hair follicles were retrieved:
    - i. Tape hairs to the Horse Information for Genetic Testing with UC Davis form (form DNA8a) per the "Instructions for Obtaining Samples" page.
  - b. If tissue is attached to the hair follicles:
    - i. Place in a clean container and snap freeze with liquid nitrogen or place on dry ice. If liquid nitrogen or dry ice is not available, please get the sample as cold as possible (such as into a freezer, placed on ice, or put into a refrigerator if no other cooling methods are available).
    - ii. Ship overnight, as cold as possible (on dry ice or with ice packs).

*If shipping on dry ice, additional labelling is required, such as a dry ice label affixed to the exterior of the package. Please contact your postal office or courier company for additional details.*

### **Canadian Samples:**

- 1) If not already in hand, please request a copy of the import permit and health certificate from the USTA.
- 2) Complete the health certificate prior to shipping. If these forms are not completed customs will hold the package.
- 3) Affix three copies of the import permit, health certificate, and shipping label to the outside of the shipment in a pouch (available from FedEx or UPS).
- 4) Include a copy of the import permit, health certificate, and shipping label inside the box.
- 5) Email a copy of the health certificate and shipping label to [research@vgl.ucdavis.edu](mailto:research@vgl.ucdavis.edu). This will allow the researchers to track the shipment and help ensure it clears customs.
- 6) Please ship any blood or tissue samples overnight, as shipments are typically held up in customs for 1-3 days.
  - a. Please send blood samples on ice and tissue samples on dry ice.
    - i. If shipping on dry ice, additional labelling is required, such as a dry ice label affixed to the exterior of the package. Please contact your postal office or courier company for additional details.





# Abnormal Foal Reporting

## SUBMITTER INFORMATION

Submitter Name: \_\_\_\_\_

Farm Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Email: \_\_\_\_\_ Phone: \_\_\_\_\_

## ANIMAL INFORMATION

Foaling Date: \_\_\_/\_\_\_/\_\_\_

Sex:  Filly  Colt

Twin?  Yes  No

Is the foal still alive?  Yes  No, Death Date \_\_\_/\_\_\_/\_\_\_, Cause: \_\_\_\_\_

Foal Name: \_\_\_\_\_

Registration No: \_\_\_\_\_

Sire Name: \_\_\_\_\_

Registration No: \_\_\_\_\_

Dam Name: \_\_\_\_\_

Registration No: \_\_\_\_\_

Has the Dam been in your possession throughout the pregnancy?  Yes  No

If no, how and by whom did you purchase the mare from? \_\_\_\_\_

To your knowledge, has the Dam previously produced normal foals?  Yes  No

If no, please describe: \_\_\_\_\_

Was foaling observed?  Yes  No

If yes, was foaling routine?  Yes  No, please describe: \_\_\_\_\_

Was abnormality obvious at birth?  Yes  No

Did a veterinarian observe or examine abnormal foal?  Yes  No

Name: \_\_\_\_\_ Phone No: \_\_\_\_\_ Email: \_\_\_\_\_

Please provide detailed information about the abnormal foal: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*I hereby certify that the given information is accurate to the best of my knowledge and belief.*

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Please email forms, and any applicable photos, to [gabby.fleming@ustrotting.com](mailto:gabby.fleming@ustrotting.com) or mail to the USTA offices, Attn: Gabby Fleming.**



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# Instructions for Obtaining Samples for Genetic Testing with UC Davis (Abnormal Foal Reporting)

To send a **blood sample** (preferred), please fill out the "Horse Information for Genetic Testing with UC Davis" form (form DNA8a) with the foal, sire and dam's names and registration numbers and mail it with two -10 ml purple top (AKA EDTA tube) blood samples directly to UC Davis at the address below. If blood kits are needed, please contact [gabby.fleming@ustrotting.com](mailto:gabby.fleming@ustrotting.com) or call 877.800.8782, ext. 3231.

To send a **hair sample**, follow the instructions below:

1. Pull hair samples from above the withers on the mane or at base of the tail. **DO NOT CUT THE HAIR.** Cut hair samples will not provide DNA for the tests.
2. Wrap 10 or more hairs around a finger and hold your hand close to the skin of the horse. Pull quickly and evenly away from the neck so that the hair does not break. Repeat until there are 50-100 strands of hair.
3. Some of the hairs may break, but it is important to obtain hair with the roots attached for the testing procedure to be successful. DNA is isolated from the hair follicle, so for best results, 50-100 follicles are needed.
4. Place the hairs in a straight line across the center area on the "Horse Information for Genetic Testing with UC Davis" form (form DNA8a). Keep the hair together, with the roots next to the "Hair follicles here" notation. **DO NOT CURL THE HAIR.** Tape the center of the hair shafts with clear tape so that the hairs stay in place. **DO NOT TAPE THE ROOTS.**
5. Fold the hair kit as you would a business letter. If you are submitting samples for multiple foals, do each sample one at a time, and put each form into its individual envelope. Please ensure that the **HAIR FROM ONE HORSE ONLY IS INCLUDED IN EACH KIT** since it is not possible for the lab staff to detect any cross contamination that may occur.

**Send the completed  
"Horse Information for Genetic Testing with UC Davis" form  
(form DNA8a) with hair, or along with a blood sample, to:**

Dr. Rebecca Bellone/Elizabeth Esdaile  
Veterinary Genetics Laboratory  
Old Davis Road  
Davis, CA 95616-8744

**Questions about the genetic abnormality study can be directed to Gabby Fleming at [gabby.fleming@ustrotting.com](mailto:gabby.fleming@ustrotting.com) or by calling 614.224.2291, ext. 3231.**



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# Horse Information

for Genetic Testing with UC Davis (Abnormal Foal Reporting)

*Please fill out this top section, whether you are sending a blood or hair sample.*

Foal Name: \_\_\_\_\_

Registration No: \_\_\_\_\_

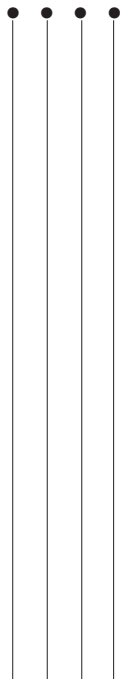
Sire Name: \_\_\_\_\_

Registration No: \_\_\_\_\_

Dam Name: \_\_\_\_\_

Registration No: \_\_\_\_\_

## Hair Sample Section



<--- Hair follicles here (at the top)

<--- Place tape across hair shaft



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## **Owner Informed Consent Form**

***Study Title for Study Participants: Genetic Investigation of Traits of Economic Importance in Horses***

***Official Title:*** Genetic Investigation of Traits of Economic Importance in Horses

***Investigator(s):*** Rebecca Bellone, PhD (rbellone@ucdavis.edu , 530-752-9299), Elizabeth Esdaile (esesdaile@ucdavis.edu)

***Why is my horse being invited to take part in this study?***

Horses of any breed with a phenotype (i.e. coat color or disease) with no known genetic cause, closely related family members, and unaffected individuals are invited to participate.

***Why is this Study being done?***

The Veterinary Genetics Laboratory (VGL) provides animal parentage verification, identification, forensics services, and genetic diagnostics on thousands of horses yearly. Unanticipated testing results or samples with novel phenotypes are frequently identified as part of the genetic testing process. This study is being conducted to collect and utilize DNA samples in research studies to identify genetic mechanism of traits of economic importance in the horse. The VGL also collects DNA samples to assist in test development and test optimization. The overarching goal of this project is to empower breeders with tools to make more informed matting decisions as well as contribute to the knowledge base of equine biology.

***What tests and procedures will my horse have if my horse takes part in this study?***

- A small sample of about 50 hairs will be pulled from the mane or tail of the horse. Hair sample collection is similar to pulling the mane for show or submitting hair for parentage testing.
- Blood sample collection requires approximately 20mL of blood collected from the jugular vein.
- In the case of a disease sample, a tissue sample may be requested if the horse is deceased. This must be collected and provided by the owner's veterinarian.
- These hair, blood, or tissue samples would be used to isolate DNA for genetic studies or RNA for gene expression studies to help understand which genetic variant(s) are responsible for the phenotypes of interest.
- For each horse sampled we also need high quality digital photographs, 5 generation pedigree information, and in the case of a horse with a disease phenotype, any relevant veterinary or histology reports.
- Follow up phone calls or emails may be necessary if any questions about the horse arise.

***What will my time commitment be if I choose to enroll my horse?***

All together, we anticipate the time commitment to be less than 35 minutes per horse. Hair and blood collection should take less than 10 minutes. Taking photographs should take no more than 15 minutes. Collection of pedigree information and form completion should take 10 minutes.

***What happens if I do not want to enroll my horse in this clinical trial?***

Participation in any clinical trial is voluntary. If you decide not to participate in the study, your choice will not affect your horse's future medical care.

***If I enroll my horse, can my horse stop taking part in this study?***

Yes. Participation in the study is voluntary and any participant has the right to withdraw from the study at any time.

Please note that the study researcher can remove your horse from the study:

- If your horse's health changes and the study is no longer in his/her best interest
- If new information becomes available
- If you do not follow the study protocols and rules
- If the study is stopped by the sponsor, UC Davis' Institutional Animal Care and Use Committee (IACUC) or a regulatory agency (e.g., FDA).

If you decide to remove your horse for any reason, it is important to let the researcher know as soon as possible. Additionally, please note that we will not remove any data that has already been collected from the study database.

***If I choose to enroll my horse, what are my responsibilities?***

If you allow your horse to participate in this study, you will be responsible for providing or allowing us to collect hair or blood samples and photos of all the horse that showcase the full coat color or disease phenotype of the horse, as detailed above. Additionally, you will be responsible for providing pedigree information about the horse. For any deceased horses with a disease phenotype, the owner will be responsible for sample collection (hair or tissue). Owners of horses with a disease will also be responsible for providing any relevant histology reports, veterinary records, and pedigree information.

***What possible benefits can I expect from my horse taking part in this study?***

There is no direct medical or financial benefit to the animal or owner(s). However, possible benefits include development of a DNA test that can help inform breeding and clinical management decisions.



***What possible risks can I expect from my horse taking part in this study?***

Neither hair pulls or venipuncture (pulling blood) are considered to cause more than momentary pain or discomfort and both are generally well tolerated. Hematoma (bleeding under the skin) may form as a result of a blood draw, but this is rare and most typically resolves without treatment. In the case of hematoma formation, treatment will be at owner's expense.

***What happens if my pet experiences adverse event(s) because he/she took part in this study?***

No adverse affects are expected from a blood draw or pulling hair. If your horse experiences adverse event(s) as a result of taking part in this study and is in need of medical treatment, please tell your veterinarian. The study sponsors **WILL NOT** pay for medical treatment.

***What are the costs of my horse taking part in this study?***

There is no financial obligation on the part of participant or investigator associated with this study. The results of this study, including specimens collected, may have commercial value to the sponsors, the University of California Davis, and/or the researchers. You will have no legal or financial interest in any commercial development resulting from the research or from the information or materials collected.

***What happens to the information collected for the clinical trial?***

Your privacy is very important to us. Our researchers will make every effort to protect it. All client and animal details, and information obtained from the study will be considered confidential and will be used for research purposes. We will limit the use and/or disclosure of your information or that of your horse to people who have a need to review this information, including the study sponsor, funding agency supporting the study and/or regulatory agencies (e.g., FDA), and other collaborators working on this study. In addition to standard electronic medical records at the UCD VMTH, some of your pet's health information, and/or information about his/her specimen, or genetic profile obtained from this study may be kept in the VGL database for research. We may publish the results of this research but we will keep your name, the name of your horse, and other identifying information confidential.

***Who can answer questions about this study?***

For specific questions about the study in which your horse is enrolled, concerns, or complaints, please contact the study researchers.

***Can I be removed from the research without my OK?***

Your horse may be removed from the study without your request if:

1. We believe it is in your horse's best interest
2. The trial is discontinued
3. We believe the trial protocol is not being followed



This research has been reviewed and approved by the Institutional Animal Care and Use Committee (IACUC) and the Clinical Trials Review Board (CTRB). You may contact the IACUC office by phone at 530-752-2364 or by e-mail at [iacuc-staff@ucdavis.edu](mailto:iacuc-staff@ucdavis.edu) if you cannot reach the investigator.

By signing below I agree to permit my horse \_\_\_\_\_ (insert name) to participate in this clinical study and undergo the procedures described to me above.

By signing below, I have read through this informed consent document and a signed and dated copy of the consent form will be given to me.

\_\_\_\_\_  
Signature of Owner

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Owner

\_\_\_\_\_  
Signature of Person Obtaining Consent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Person Obtaining Consent