

DNA- Frequently Asked Questions

1. What type of DNA is required by the CLA?

The following chart outlines the required DNA

Type	Requirement	Test(s) Needed
Natural Service Sires- <i>born before January 1, 2021</i>	SIRE VERIFIED	30K or 100K
Natural Service Sires – <i>born on or after January 1, 2021</i>	PARENT VERIFIED	30K or 100K
AI Sires	PARENT VERIFIED & PROTO FREE	30K or 100K Proto Test or Free by Pedigree
Donor Females- <i>flush date before January 1, 2021</i>	SIRE VERIFIED & PROTO FREE	30K or 100K Proto Test or Free by Pedigree
Donor Females- <i>flush date on or after January 1, 2021</i>	PARENT VERIFIED & PROTO FREE	30K or 100K Proto Test or Free by Pedigree
ET Calves	PARENT VERIFIED	30K or 100K
Fullblood Animals	PARENT VERIFIED	30K or 100K
All Registrations over 24 months of age	PARENT VERIFIED	30K or 100K

Note: Semen drawn for in-herd use still applies to the AI Sire DNA requirements.

2. What tests are offered with the CLA?

There are three types of DNA tests: parentage tests, genetic defect tests and genetic condition tests.

Parentage	Genetic Conditions	Genetic Defects
100K	Horned Polled (Homopolled Test)	Protoporphyrin (Proto)
30K	Coat Colour (Homoblack Test)	Myostatin (Myo) Leptin

Both the 30K and 100K parentage tests gives us the ability to confirm an animal to its parents. It also provides a genomically enhanced EPD. Genetic defect/condition tests can only be discounted with a 100K parentage test. Please see the fee schedule for pricing.

3. What are acceptable forms of DNA Samples?

There are multiple types of samples that you can submit containing DNA. These include:

Hair	30-50 hair follicles from the switch of a cow's tail and submitted in a "Hair Card".
Blood	Blood dripped and submitted into a "Blood Card".
Tissue	Punched from a cow's ear and submitted in a "Tissue Sampling Unit" (TSU).
Semen	A straw of semen. Place in secured packaging to avoid breakages in shipping.

Please refer to the collection of how-to's located on the CLA website under "DNA" to learn more about collection techniques.

DNA- Frequently Asked Questions

4. What is the difference between a 30K and 100K test?

30K DNA Test

100K DNA Test

5. How long can DNA samples be stored once they are collected?

The shelf life of hair, blood and TSUs will not spoil if they are stored in a cool dry place. Be sure that blood in the blood cards are dried-out before closing them up for storage- otherwise molding may occur. If you are storing a tissue sample, be sure that the tissue is fully submerged into the preservative solution inside the tube. Semen samples need to be kept frozen until they are being shipped for testing.

6. Can I send a hair sample without using a hair card?

As of June 1st 2020, all hair samples that are not on a hair card will be subject to a \$4 “Loose Hair Fee” on each sample sent in. Each hair card contains a unique barcode that is used for traceability purposes at Neogen. Therefore, taping hair samples to a piece of paper will not be exempt from this fee. Be sure to order hair cards prior to making DNA requests in order to avoid delays in testing. You can order hair cards by contacting the CLA office directly.

7. I am using TSUs. Do I need to submit an excel file with the tattoos and barcodes?

Yes. When submitting TSUs, you will need to indicate which TSU belongs to each specific animal. Please email an Excel spreadsheet to the office of your TSU barcode and corresponding tattoo OR label each in the TSU box. We recommend sending an excel file when you have a group of 10 samples or more.

8. DNA Terminology

Parent Verified =	Progeny has been confirmed to its dam and sire through DNA.
Sire Verified =	Progeny has been confirmed to its sire through DNA.
Dam Verified =	Progeny has been confirmed to its dam through DNA.
Disqualified =	Progeny’s DNA does not match the DNA of its parent. A new parent must be found.
Homozygous Polled =	The animal is polled and carries two copies of the polled gene. They will only produce polled progeny.
Heterozygous Polled =	The animal will be polled but carries both a polled and horned gene.
Homozygous Black =	The animal will be black and carries two copies of the black coat gene. All resulting progeny will be black.
Heterozygous Black =	The animal will be black but carries one copy of the black coat gene and one copy of the red copy gene.

9. How long does DNA testing take?

It is a 21 calendar-day turnaround **from the day that the lab has received your sample(s)** for all tests until you can expect to see results. The lab does not accept rush requests.

10. How do I request a DNA test on an animal?

You will order the DNA test(s) through the CLA office. You can do this by either giving us a call or sending us an email. Please have the tattoos or registration numbers of the animals ready when you contact us with each specific tests you are wanting.

You can also request DNA yourself directly in Digital Beef. Please see the DNA page in the website for full instructions.

DNA- Frequently Asked Questions

11. Where do I send my samples?

Once the CLA has set up your DNA request, you will then be given a DNA Requisition Form. The lab's address will be located on the top-right corner of this form. Please be sure to send your requisition form along with the physical samples so that the lab receives these together. Not including the form will result in delays.

12. How will I know my tests are finished? / Where can I find my results?

Once the lab has completed the DNA tests, they will be reported directly to the CLA. You will be notified by email. If you do not have an email on file, a copy of the results certificate will be mailed to you.

You can also find the results in the DigitalBeef registry at any time. Simply pull up the profile of the particular animal and select its "DNA" tab.

13. My sample failed testing, now what?

Occasionally, a sample will "fail" testing meaning no results can be obtained from the sample. In the case that a sample fails, you will be required to send in a new sample and you are responsible to pay for the retest. The new sample will still be subject to a 21-day turnaround. This is why if you are needing results for a specific deadline, we suggest to **allow plenty of time as sometimes a retest is needed**. Two common reasons for a retest are a "contaminated sample" or a sample with not enough DNA material. Please ensure your samples are free of manure or other debris and to include plenty of hair follicles (40-50 is recommended).

14. My animal was disqualified to its parent(s), now what?

In the event that this happens, you will be notified directly by the office. You will be expected to refer back to your breeding records as you will be asked to provide us with alternate parent possibilities. Until the correct parent(s) are found, the animal's registration will be placed "on-hold".

If a certificate was previously sent to you with the incorrect parents and you wish to have a corrected one sent, you will need to send the initial certificate back to the office before we can reissue the corrected certificate.

15. Why did my Bull not have DNA done when I purchased him?

While the CLA *strongly encourages* its members to DNA breeding bulls before they are sold and delivered, it is not a mandatory CLA Bylaw. Please be sure to **confirm if your bull has been DNA'd** before using him for breeding. You can confirm a bull's DNA records in the online registry or by contacting the CLA registry staff directly.

16. What do I do if I'm not sure of a calf's parents?

If you are not completely certain who a calf's parents are, you are obligated to complete a parentage test on the calf. If there is more than one potential sire or dam, please advise the registry office at the time of placing the request. Since animals cannot be DNA'd until they are in the herdbook, we ask that you just "record" the calf and list one of the potential sires/dams at this stage. Once the parents have been confirmed from testing, we will have the calf upgraded to registered and can issue you a registration certificate. In accordance with CLA Bylaws on all multi sire breeding groups the resulting progeny is required to be DNA tested.

17. I received parentage results but have not received the Horned Polled results yet, why is that?

You can expect to see the results from the second test within 24 hours. At times there is a brief delay in reporting all of the results from the tests ordered.

DNA- Frequently Asked Questions

18. What is the difference between a 30K and 100K Test

Both the 30K and 100K test deliver parentage results and genomically enhanced EPDs.

Low Density SNP Genotyping (GGP uLD; 30,000 SNPs)

- The GGP uLD assay is an excellent tool for conducting SNP parentage verification and is highly accurate.
- The main advantage of the GGP uLD assay is that this information can be applied to the prediction equations for a specific breed to generate gEPDs at the lowest cost to the breeder.

High Density SNP Genotyping (GGP 100K; 100,000 SNPs)

- The Bovine 100K assay is also an excellent tool for conducting SNP parentage verification and is highly accurate.
- Bovine 100K genotyping is used on highly prolific animals (i.e., AI sires, ET dams, and prolific herd sires) that contribute a great deal of genetic material to the entire herd through their many offspring. The Bovine 100K genotypes are used to develop the prediction equations for a specific breed's gEPD calculation. Furthermore, by including animals from their herd, the prediction equations become that much more accurate for the breeder since their animals are contributing to the development of the calculations.
- The Bovine 100K genotypes can also be applied to existing prediction equations to generate gEPDs on these animals.

Choose the test that reflects your needs as a producer. If you want to verify which bull is working overtime for you or sell progeny based on pedigree, then the 30K might be all you need. If you want to start incorporating genomics in your breeding plan, then a low-density 30K test such as the GGP uLD is a good choice. If your business is breeding highly prolific animals, the 100K might do you the best service in terms of complete and accurate information. Which test you use depends on your on-farm breeding objective – this should help you meet your herd performance targets, and ultimately be based on profitability for the success and sustainability of your operation.

If you have any further questions in regards to DNA or placing requests, feel free to contact the CLA Office directly.