

MEMBERS GUIDE TO REQUESTING DNA

1. DNA Testing Requirements

The CLA bylaws and rules require DNA tests for the following:

- Sire verification for all walking bulls born before January 1, 2021
- Parent verification for all walking bulls born on January 1, 2021 and after
- Sire verification for donor cows prior to Jan 1, 2021
- Parent verification for donor cows with a flush date of January 1, 2021

and after

- Parent verification and protoporphyria genotype on file for all AI sires (public sales of semen and in-herd use semen)
- Parent verification for all embryo calves and Fullblood animals
- As of January 1, 2015, all donor cows in embryo production, must have a protoporphyria genotype on file at the Association.

2. If you have not done so already, you will need to collect the DNA sample from the animal. It is good practice to collect DNA from all potential sires at the beginning of the breeding season.

Hair samples are one option. Ensure you have collected 40-50 hair roots, attached them to a hair card (can be ordered from CLA). And ensure the sample is clean and not contaminated with dirt, manure or other animal's hair.

Tissue samples are becoming the sample collector of choice. Ensure clean, uncontaminated sampling. The genetic material is sealed in a specially designed preservative. Once the tissue sample has been successfully extracted, care should be taken to store the sample at room temperature and away from sunlight for up to a year.

How to collect Hair samples

<https://www.limousin.com/assets/Hair-sample-collection-instructions.pdf>

How to collect TSU samples

<https://www.youtube.com/watch?v=9Y2-DXghJI4>

Members that submit DNA by TSU are asked to send an excel sheet with Tattoos and TSU barcodes to CLA so we can submit them to the lab. This helps the lab cross reference the TSU samples as they come in so there is no mix up.

3. To order DNA testing on line Navigate to <https://cla.digitalbeef.com> and log into your account.

4. Click "Herd Mgmt"

The screenshot displays the Canadian Limousin Association's web interface. The top navigation bar includes 'Home page' and 'Search Tools - Calendar'. A left sidebar contains a 'Work Menu' with options like 'Search/Find', 'Animal', 'Ranch/Person', 'My Account', 'View', 'Herd Mgmt', 'Customers', 'Suppliers', 'Reports', 'Tools', 'Affiliations', and 'Work Queues'. Below this is a 'For Your Information' section with links to 'Cattle Evaluation', 'Genetics Trends', 'Percentile Ranks', 'Proven Sires', 'Proven Dams', 'Young Sires', 'Genetic Conditions', and 'Adjustment Formulas'. The main content area is titled 'General Profile Information' and includes a 'Add Ranch Logo' button. It displays member details: 'Profile Type: Lifetime Member', 'Official Profile ID: 993', 'Official Profile Name: CANADIAN LIMOUSIN ASSOCIATION', 'DBA:', 'Herd Prefix: CLA', 'Hold Brand: Add Brand', 'Hold Brand Location:', 'Tattoo Location:', and a 'Member Password' field with a 'view' button. Below this is a tabbed interface with tabs for 'Addresses', 'Phones', 'Contacts', 'Partnerships', 'Associated', 'Account', 'Prefs', and 'Herd'. The 'Herd' tab is active, showing a table with columns for 'All', 'Quick Sire List', 'Breeding', 'Yearling', 'Weaned', 'Pre-Wean', 'Breeding', 'Yearling', 'Weaned', 'Pre-Wean', and 'Un-Registered'. The table content includes a comprehensive list of animals and specific filters for 'Quick sire List', 'Bulls :: Breeding', 'Bulls :: Yearling', and 'Bulls :: Weaned'.

5. Click "DNA"

Work Menu
993

- Search/Find
 - Animal
 - Ranch/Person
- My Account
 - View
- Herd Mgmt
 - Inventory
 - Pasture Groups
 - Recording
 - Breeding
 - DNA**
 - Cooperators
 - Private Treaty
 - Consignments
- Customers
- Suppliers
- Reports
- Tools
- Affiliations
- Work Queues

For Your Information
Cattle Evaluation
Genetics Trends
Percentile Ranks
Proven Sires
Proven Dams

General Profile Information
Add Ranch Logo

Profile Type: Lifetime Member
Official Profile ID: 993
Official Profile Name: CANADIAN LIMOUSIN ASSOCIATION
DBA:
Herd Prefix: CLA
Hold Brand: Add Brand
Hold Brand Location:
Tattoo Location:
Member Password [view](#)

Addresses Phones Contacts Partnerships Associated Account Prefs Herd

Bulls				Females				Un-Registered	
All	Quick Sire List	Breeding	Yearling	Weaned	Pre-Wean	Breeding	Yearling		Weaned
All Comprehensive list of all animals in your inventory not identified as culled or died Quick sire List Bulls you have selected for easy recording of calves and breeding information Bulls :: Breeding Bulls in your inventory that are at least 720 days of age OR they have a breeding record entered into the h Bulls :: Yearling Bulls in your inventory that are at between 250 and 720 days of age AND they have no breeding record en Bulls :: Weaned Bulls in your inventory that are over 250 days of age OR they have a weaning record entered into the herd Bulls :: Pre-Wean Bulls in your inventory that are under 251 days of age AND they have no weaning record entered into the l Females :: Breeding Cows and heifers in your inventory that are at least 720 days of age OR they have a breeding record enter Females :: Yearling Heifers in your inventory that are at between 250 and 720 days of age AND they have no breeding record Females :: Weaned Heifers in your inventory that are over 250 days of age OR they have a weaning record entered into the he Females :: Pre-Wean Heifers in your inventory that are under 251 days of age AND they have no weaning record entered into th For Sale Animals you have flagged as For Sale by Private Treaty									

6. Click "DNA Order Request"

CANADIAN LIMOUSIN ASSOCIATION

Home page Search Tools - Calendar - M

Work Menu
993

- Search/Find
 - Animal
 - Ranch/Person
- My Account
 - View
- Herd Mgmt
 - Inventory
 - Pasture Groups
 - Recording
 - Breeding
 - DNA
 - Cooperators
 - Private Treaty
 - Consignments
- Customers
- Suppliers
- Reports

DNA Profile Management for CANADIAN LIMOUSIN ASSOCIATION Member #993

DNA Order Request Orders in Process Parentage Markers Genetic Summary

Please make a selection from the tabs above...

CANADIAN LIMOUSIN ASSOCIATION

7. Enter reason for DNA from drop down menu.

993

DNA Order Request Orders in Process Parentage Markers

CLA DNA requirements can be found [here](#)

If you experience problems, please email a brief, but detailed, synopsis of what happened to jim@digitalbeef.com and I will try to get the pr

Include your member #, reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.

DNA Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993

Reason	Subject				Sire			Reg
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	
None of the Above ▾	<input type="text" value="enter reg #"/>			<input type="text" value="enter complete barcode"/>		none	+	

Notes to CLA:

ET Calf
Herd Sire
AI Sire
Donor Dam
None of the Above

Add Request Submit to Staff

For Your Information

Cattle Evaluation
[Genetics Trends](#)
[Percentile Ranks](#)
[Proven Sires](#)

8. Enter the tattoo or Registration Number for animal to be tested

993

DNA Order Request Orders in Process Parentage Markers

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Include your member #, reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.

DNA Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993

Reason	Subject				Sire			Reg
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	
None of the Above ▾	<input type="text" value="enter reg #"/>			<input type="text" value="enter complete barcode"/>		none	+	

Notes to CLA:

Add Request Submit to Staff

For Your Information

Cattle Evaluation
[Genetics Trends](#)
[Percentile Ranks](#)
[Proven Sires](#)

9. Another option is you can click the green note box beside the registration field.

CLA DNA requirements can be found [here](#)

If you experience problems, please email a brief, but detailed, synopsis of what happened to jim@digitalbeef.com and I will try to get the problem resolved. Include your member #, reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.

DNA Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993

Reason	Subject			Sire				
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add Sires?	Reg No
None of the Above	<input type="text" value="enter reg #"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value="enter complete barcode"/>	<input type="text" value=""/>	<input type="text" value="none"/>	<input type="text" value="+"/>	<input type="text" value=""/>

Notes to CLA:

For Your Information

Cattle Evaluation

- [Genetics Trends](#)
- [Percentile Ranks](#)
- [Proven Sires](#)
- [Proven Dams](#)

10. This will bring up a list of all your active animals in the herd, you can then check the box beside the animal you choose and it will input all the information for you.

Animals in your Inventory

	RegNo	Bulls		Name
		Prefix	Tattoo	
<input type="checkbox"/>	CPM0108664	KBS	112F	FREIGHTLINER

11. Once the tattoo or registration number is entered, click save.

DNA Order Request Orders in Process Parentage Markers

CLA DNA requirements can be found [here](#)

If you experience problems, please email a brief, but detailed, synopsis of what happened to jim@digitalbeef.com and I will try to get the problem resolved as quickly as possible. Include your member #, reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.

DNA Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993

Reason	Subject				Sire			Reg No
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	
None of the Above ▼	CPM0108664			enter complete barcode		none	+	

Notes to CLA:

Add Request Submit to Staff

12. Click the "enter complete barcode" field. This is where you enter in your TSU barcode.

DNA Order Request Orders in Process Parentage Markers Genetic Summary

CLA DNA requirements can be found [here](#)

If you experience problems, please email a brief, but detailed, synopsis of what happened to jim@digitalbeef.com and I will try to get the problem resolved as quickly as possible. Include your member #, reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.

DNA Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993

Reason	Subject				Sire			Dam			Cost
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	Reg No/Tattoo	Dam on file?	Add'l Dams?	
None of the Above ▼	CPM0108664 FREIGHTLINER	KBS 112F	B	enter complete barcode	CPM0075023 RGA 26B	none	+	CPF0059605 LIM 28A	none	+	\$ 0.00

Notes to CLA:

Add Request Submit to Staff

\$ 0.00

13. Click save when you have entered the barcode

DNA Order Request				Orders in Process				Parentage Markers				Genetic Summary			
CLA DNA requirements can be found here If you experience problems, please email a brief, but detailed, synopsis of what happened to jim@digitalbeef.com and I will try to get the problem resolved as quick as possible. Include your member #, reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.															
DNA Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993															
Reason	Subject				Sire				Dam				Cost	DNA Test	
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	Reg No/Tattoo	Dam on file?	Add'l Dams?					
None of the Above	CPM0108664 FREIGHTLINER	KBS 112F	B	AF02566959	CPM0075023 RGA 26B	none	+	CPF0059605 LIM 28A	none	+	\$ 0.00	no parentage			
Notes to CLA:												\$ 0.00			
<input type="button" value="Add Request"/> <input type="button" value="Submit to Staff"/>															

14. The Sire/Dam on file will indicate if they have SNP or STR on file, if they have SNP then sire/dam verification can be achieved. If they only have STR on file, contact CLA office and we can set up additional testing to either get the sire updated to SNP or do a double testing on the progeny to achieve sire verification. If the sire/dam show none, he/she will need to be set up for parentage testing as well.

A Order Request				Orders in Process				Parentage Markers				Genetic Summary				Probation	
CLA DNA requirements can be found here If you experience problems, please email a brief, but detailed, synopsis of what happened to jim@digitalbeef.com and I will try to get the problem resolved as quick as possible. Include your member #, reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.																	
DNA Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993																Work Order: 2	
Reason	Subject				Sire				Dam				Cost	Test Type			
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	Reg No/Tattoo	Dam on file?	Add'l Dams?	DNA Test	Initiated by					
None of the Above	CPM0108664 FREIGHTLINER	KBS 112F	B	AF02566959	CPM0075023 RGA 26B	none	+	CPF0059605 LIM 28A	none	+	\$ 0.00	no parentage testing	993 on 2024-02-0				
Notes to CLA:												\$ 0.00					
<input type="button" value="Add Request"/> <input type="button" value="Submit to Staff"/>																	

Request	Orders in Process	Parentage Markers	Genetic Summary	Probable Carrier									
Parents can be found here													
Please email a brief, but detailed, synopsis of what happened to jim@digitalbeef.com and I will try to get the problem resolved as quick as possible.													
reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.													
for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993				Work Order: 202402									
Subject			Sire		Dam		Cost	Test Type					
Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?		Reg No/Tattoo	Dam on file?	Add'l Dams?	DNA Test	Protophyria	Mystatin
CPM0108664 FREIGHTLINER	KBS 112F	B	<input type="text" value="enter complete barcode"/>	CPM0075023 RGA 26B	none	+	CPF0059605 LIM 28A	none	+	\$ 0.00	no parentage testing ▼	<input type="checkbox"/>	<input type="checkbox"/>
										Initiated by 993 on 2024-02-14			
										\$ 0.00			
										Add Request Submit to Staff			

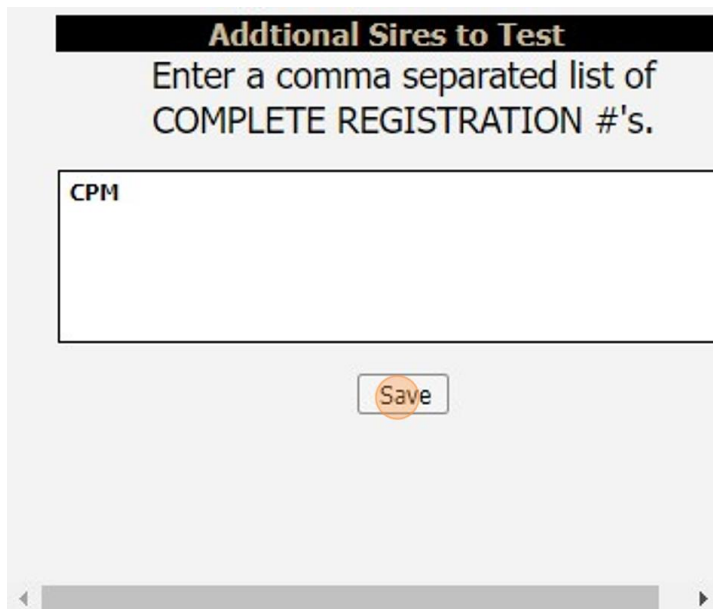
The same can be done if there is a possibility of an additional dam to test.

Additional Sires to Test

Enter a comma separated list of
COMPLETE REGISTRATION #'s.

Save

17. Click save once completed to save the information.



The screenshot shows a web form titled "Additional Sires to Test" in a black header bar. Below the header, the text "Enter a comma separated list of COMPLETE REGISTRATION #'s." is displayed. A large text input field with the label "CPM" is positioned below the text. At the bottom of the form, there is a "Save" button with an orange circular icon. The form is set against a light gray background with a horizontal scrollbar at the bottom.

18. Click the dropdown menu and select the testing you are wanting.

Categories based on the number of SNPs that are assayed:

Low density, and High density SNP genotyping.

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 basic SNP parentage might be all you need. Going further, if you want to start incorporating genomics in your breeding plan, then a low-density test such as the GGP uLD is a good choice. If your business is breeding highly prolific animals, the Bovine 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.

19. Additional testing can be requested at the same time as the panels, if you are selecting additional testing it is beneficial to select the 100K panel, this will give you the add on tests at a discounted rate.

The other benefit of the 100K panel is members can request parentage at the start, and then request the add on testing at a later date. This will result in the add on testing to be completed in a shorter amount of time, usually 2-3 days.

If members have a 30K panel completed and then wanted to add on testing at a later date, it would take another 21+ days processing time.

Protoporphyria (Proto) Testing

Protoporphyria is a rare autosomal recessive genetic disease of cattle worldwide. Although rare, it is imperative that we ensure that Protoporphyria status is recorded on the most prolific animals, therefore as of January 1, 2015, all donor cows in embryo production, and for all AI sires (public sales of semen and in-herd use semen) must have a protoporphyria genotype on file at the Association. If the animal shows PP under the check box then the animal is Proto negative by pedigree and testing does not need to be submitted.

Horned/Polled Testing

Horned/Polled testing is a good tool to confirm the status of the horned gene in your animals, if there is an H-1, H-2 or H-3 under the check box this means that the animal is homo polled by pedigree and does not require testing to check this status.

Coat color

Coat color is to confirm if a black animal is homo black or hetero black. In black cattle, red hair is the recessive form of the gene, so even if an animal is black, it may still carry a red gene, and could pass the red gene to its calves. If two carriers are bred to each other, there is a one-in-four chance their offspring will express the recessive trait even though neither of the heterozygous parents do.

Myostatin

Myostatin testing tests for the F94L gene, this is the double muscle gene in cattle. This will test how many copies of the gene they have. Animals with one or two copies of the mutation have large ribeye area, increased muscularity, improved carcass yields, improved meat tenderness, decreased marbling and subcutaneous fat thickness. Recent work also suggests these animals have lower maintenance requirements due to decreased (relatively) organ mass. Carriers don't have significant changes in birth weights but typically improved growth and efficiency due to decreased muscle turnover and increased lean tissue growth versus fat accretion.

Leptin

Leptin is a hormone that regulates feed intake, energy expenditure and whole body energy balance. A SNP in the Leptin gene has been associated with several economically important traits including milk production, weaning weight, backfat, marbling, quality grade, yield grade, dry matter intake, and days on feed. There are 3 Leptin variants:

CC (lean) animals have less fat and therefore, are less economically favorable

CT animals are economically intermediate

TT (fat) animals have more fat and therefore, are more economically favorable

20. To select the additional tests, check the boxes under each test you would like to add.

Genetic Summary		Probable Carriers	
I will try to get the problem resolved as quick as possible. ful.			
Work Order: 202402050009			
Dam		Cost	Test Type
Leg No/Tattoo	Dam on File?		
CPF0059605 LIM 28A	none	\$ 55.00	<div>DNA Test</div> <div>Bovine GGP 100K</div> <div>Initiated by 993 on 2024-02-05</div>
		\$ 55.00	
Staff			

Protoporphyria	Myostatin	Coat Colour	Horned/Pollled	Leptin
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. Once all the tests are selected, enter notes to the CLA staff. For example, panel type, add on tests selected, if you are wanting full parentage or just sire verification, also if it is an AI sire, herd sire or embryo calf, etc. So we can ensure all the testing has been requested that is required. If an animal already has DNA on file at the lab from a previous test (HP testing or Parentage testing), and you would like to add another test, please ensure you have included this in the notes. Make sure to click your cursor out of the box before adding a request or submitting to staff so it saves your notes.

CLA DNA requirements can be found [here](#)

If you experience problems, please email a brief, but detailed, synopsis of what happened to jim@digitalbeef.com and I will try to get the problem resolved for you. Include your member #, reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.

DNA Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993

Reason	Subject				Sire			Dam	
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	Reg No/Tattoo	Dam on file?
None of the Above	CPM0108664 FREIGHTLINER	KBS 112F	B	AF02566959	CPM0075023 RGA 26B	none	+	CPF0059605 LIM 28A	none

Notes to CLA:

Add Request Submit to Staff

For Your Information

Cattle Evaluation

- Genetics Trends
- Percentile Ranks
- Proven Sires
- Proven Dams
- Young Sires

22. To add an additional animal click the "Add request" button.

Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993

Reason	Subject				Sire			Dam		Cost	Test Type	
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	Reg No/Tattoo	Dam on file?			Add'l Dams?
None of the Above	CPM0108664 FREIGHTLINER	KBS 112F	B	AF02566959	CPM0075023 RGA 26B	none	+	CPF0059605 LIM 28A	none	+	\$ 70.00	Bovine GGP 100K

Parentage, 100K panel, add Coat color and Horned polled testing.

Add Request Submit to Staff

\$ 70.00

Initial 99 on 2024

23. Complete steps 7-19 for each additional animal requested.

Include your member #, reg #, complete barcode and the test(s) you want ordered. A screenshot may also prove helpful.

DNA Requests for CANADIAN LIMOUSIN ASSOCIATION, MemberID: 993

Reason	Subject				Sire			Reg
	Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	
None of the Above	CPM0108664 FREIGHTLINER	KBS 112F	B	AF02566959	CPM0075023 RGA 26B	none	+	CPF L
Notes to CLA:	Parentage, 100K panel, add Coat color and Horned polled testing.							
None of the Above	enter reg #			enter complete barcode		none	+	
Notes to CLA:								
								Add Request Submit to Staff

For Your Information

Cattle Evaluation

- Genetics Trends
- Percentile Ranks
- Proven Sires
- Proven Dams
- Young Sires

Genetic Conditions

24. Once you've completed all the requested click "submit to staff" button, this will send the request to the CLA staff. We will review the requests, contact you with any questions, and then send you the DNA submission form. You will send the form and the samples to the lab. The lab address is located at the top right corner of the DNA submission form.

Reg No	Tattoo/Tag	Sex	Barcode	Reg No/Tattoo	Sire on file?	Add'l Sires?	Reg No/Tattoo	Dam on file?	Add'l Dams?		DNA Test	Initiated by
VER	KBS 112F	B	AF02566959	CPM0075023 RGA 26B	none	+	CPF0059605 LIM 28A	none	+	\$ 70.00	Bovine GGP 100K	993 on 2024-02-01
el, add Coat color and Horned polled testing.												
#			enter complete barcode		none	+		none	+	\$ 0.00	no parentage testing	993 on 2024-02-01
										\$ 70.00		
										Add Request Submit to Staff		

It is a good practice to send an email to CLA limousin@limousin.com to notify us that you have submitted the DNA request online so we can ensure you get your submission form in a timely manner.

It is the members responsibility to review the submission form to ensure all testing that was requested is on the form prior to you sending it to the lab. If you are sending in TSU samples we still require an Excel file with the tattoo and TSU barcode sent in to us so we can upload that information to the lab.

25. Once the DNA has been submitted to the CLA staff, Click "Orders in Process" to show you the animals you have requested DNA on and the status of the results. Once the DNA testing has been completed, they will be removed from this tab.

