

Common Reasons for Samples that Fail DNA Testing

Concerns Specific to Sample Type

Hair cards

1. Too few or no follicles (<30) – DNA only occurs in the ‘root’ of the hair. The actual strands do not contain DNA.
2. Small follicles taken from young calves - hair samples should not be taken from calves < 6 months of age.

TSU

1. The tube was empty as the applicator wasn’t pressed all the way
2. Sample is trapped in the top of the tube, and cannot be preserved in the buffer therefore drying out
3. The buffer has leaked as the TSU wasn’t sealed 100% at the time sample collection

Semen

1. Store any semen samples at room temperature or a refrigerator.
2. Semen straws can easily be damaged in shipping. Proper packaging is important to prevent splitting/leaking

Q.2: Why is the trio excluded when the individual parents are qualifying?

A. This happens when one parent is correct, and one is incorrect. The way this happens is if the **Offspring** is heterozygous at one marker (**A/G**) and **both parents** are homozygous (**A/A**). Both parents can match individually, but both parents cannot qualify as a **trio** because the offspring had to receive the second allele (**G**) from one of the parents which makes one of the parents incorrect.

Offspring	A/G	Offspring	C/T
Dam	A/A	Dam	C/T
Sire	A/A	Sire	T/T
Trio Exclusion: Needs G from at least one parent		Trio Qualified: It's possible for this sire and dam to create the offspring for this marker	

Q.3: What does NR mean? How do I get results from that animal?

A. NR means no results. There are many reasons to get a sample with no results. The most common reasons are the sample failed or there are no SNP parentage markers for that sample (see Q.1). If the sample has not had parentage run, you can request a sample pull and test that sample for parentage. If the sample failed testing, it is recommended a new sample be sent for that animal.

Q.4: How do you determine an exclusion and qualification?

A. If the dam/sire does not contain one of the same alleles as the offspring, it is classified as an exclusion. When the dam/sire is excluded to an animal it means that the parent contains conflicting alleles to the offspring in more than 1.5% of the markers used in the analysis.

Therefore, the possibility of the animal being the parent gets slimmer the more exclusions they have.

Offspring	T/T	C/T	A/G	C/C	T/T	C/C	A/A	T/T	A/G
Sire 1	T/T	T/T	A/G	C/T	C/T	T/T	A/A	G/G	A/G
Sire 2	C/C	T/T	A/G	C/T	TT	C/T	A/G	T/T	G/G
Green: Qualified					White: Exclusion				

Q.5: Why did I get multiple dams or sires qualifying to an animal?

A. Multiple qualifications can be due to an animal being closely related to the offspring or the true parent. When this occurs, think about which sires are logically the correct sire and which don't make sense. The trio analysis often resolves multiple qualifications.

Q.6: How do I know if the parents are on file?

A. If you have done testing with Neogen previously and have submitted animals that are either your sires or dams, they will be on file in our system. They may be in a MiP or a SNP profile.

If they are on a MiP then they will need to be upgraded via additional testing.

If the parent doesn't have SNP markers than we are unable to do SNP parentage comparison with progeny, until the parent is upgraded.

If you use Artificial Insemination in your herd and are unsure if those bulls are on file in our system, it is best to call your breed society and ask them if we have SNP markers for a certain bull.

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