



## Common Reasons Samples Fail DNA Testing

### **General Issues**

1. Biological contamination
  - a. Cross contamination between samples/animals
  - b. Fecal matter or dirt in sample
2. Chemical contamination
  - a. Dye/pigment from animal markers
  - b. Insect repellent
  - c. Cleaning agents
3. Improper storage
  - a. Heat exposure including leaving the samples in vehicle or in hot sun
  - b. Exposure to foreign material including mold
  - c. Improper frozen storage- the freeze/thaw cycle of a self-defrosting unit can degrade DNA
  - d. Extended sample storage- DNA degrades over time
4. Insufficient sample
5. Improper shipping

### **Issues Specific to Sample Type**

#### **Hair Cards**

1. Too few follicles (<30)-DNA only occurs at the “root” of the hair (the actual hair strands do not contain DNA)
2. Small follicles taken from young calves (<6 months of age)

#### **Blood Cards**

1. Insufficient blood spotted on card-ensure the circle is filled and the blood is visible on both sides of the paper
2. When spotting cards from stored blood, make sure to invert the tube 4-5 times before spotting as blood settles/separates over time
3. Do NOT speed dry the card using a hair dryer-heat may damage the DNA
4. Let blood dry completely before closing card
5. Do not use blood for animals that are twins, blood is shared in utero which will cause the sample to be cross-contaminated



### **Whole Blood**

1. Wrong type of blood tube used-use only purple-top EDTA tubes
2. Store the blood in a refrigerator until shipped
3. Ship overnight air with cold packs
4. Do not use blood for animals that are twins, blood is shared in utero which will cause the sample to be cross-contaminated

### **AllFlex Tags, Typifix Tags, Tissue Samples**

1. No sample in tag
2. Sample is trapped in cap and does not enter tube will prevent it from being preserved
3. AllFlex Tags and Typifix Tags should be kept at room temperature to prevent DNA degradation
4. Long term storage
  - a. AllFlex Tags are viable for 12 months after collection
  - b. Tissue samples should be stored in the freezer
5. Unpreserved tissue samples should be shipped next day air and never over a weekend or holiday
6. Tissue samples cannot be stored in alcohol, paraffin, or formalin

### **Semen**

1. Store semen samples at room temperature or refrigerator-semen samples that go through a freeze/thaw/free/etc process will lose integrity
2. Semen straws can easily be damaged in shipping, proper packaging is especially important-an empty ball point pen tube is recommended

### **Bristle/Cotton Swab (canine and feline only)**

1. Remove food 30 minutes prior to sample collection
2. Do not allow bristles/swabs to touch any other surface other than inside of animal's mouth
3. 2 bristle swabs (dogs)/4 cotton swabs (cats) must be used for the same animal to have enough DNA for testing
4. Let air dry before shipping