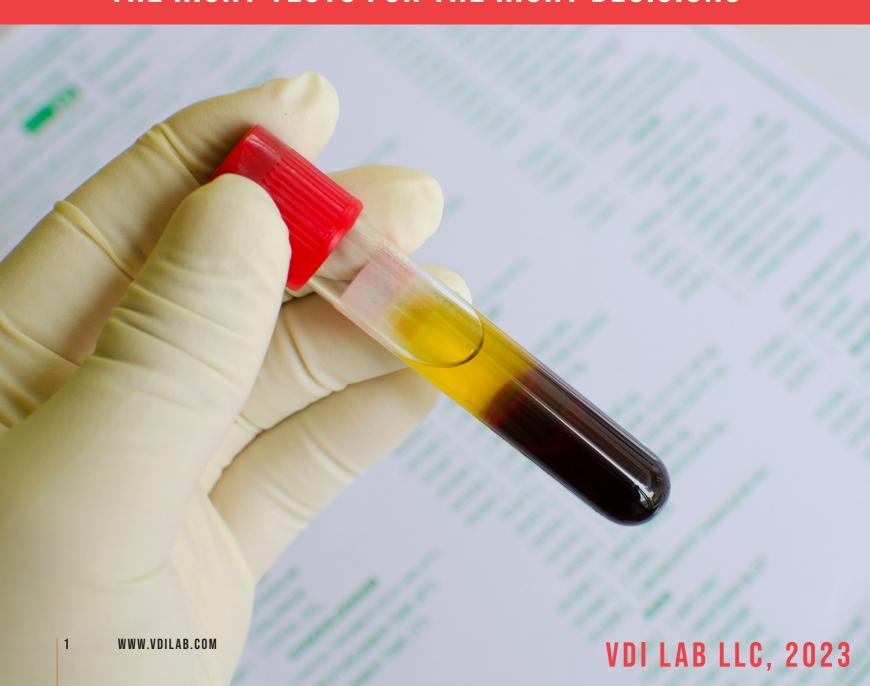


# GUIDELINES SAMPLE HANDLING, PROCESSING, & SHIPPING

### THE RIGHT TESTS FOR THE RIGHT DECISIONS®



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### INTRODUCTION

As with all laboratory tests, the accuracy and quality of the results depends on the handling of the sample at all stages of the process. This includes good pre-sampling preparation, effective collection, proper packaging & shipping, and ultimately the highest quality laboratory practices. When done correctly, we can feel confident in the quality of the results that ultimately help with clinical decision making.

Please use this guide as a resource to ensure samples coming to VDI are properly prepared, handled, and shipped in order to avoid any compromised results.

Once in our hands we'll maintain our highest level of laboratory practices to provide timely and accurate results.

Together with your help we can be sure you are receiving results that can help you make the decisions your patients and clients need.

Thank you, VDI Team



# **TERMINOLOGY**

Common Terminology & Abbreviations used in this guide, on reports, and on other VDI documents.

Abbreviation/Term	Description
DSTK	Dry Serum Test Kit
FSTK	Frozen Serum Test Kit
MTM	Mineral and Toxic Metal (fur analysis)
TRF	Test Requisition Form
SST	Serum Separator Tube
Samplla <sup>®</sup>	Patented technology used in the Dry Serum Test Kits
DFU	Directions For Use
Well	The area for sample application on the black device/cartridge found in the Dry Serum Test Kits. Wells are labeled "A" and "B" and are a small circular opening with white paper inside.
Draw Date	Date that the patient sample was collected from the patient.
Load Date	Date that patient sample was applied to a dry serum test kit (DSTK).
M.A.P (MAP)	Modified Atmosphere Packaging - yellow and white return envelope found with Dry Serum Test Kits. A Critical Component to the Kit.
Device	Black cartridge found inside the Dry Serum Test Kit, on which patient samples are applied.
TAT	Turnaround Time
USPS	United States Postal Service
Stem (of pipette)	The "stem" of the pipette is the narrow tube of the pipette that extracts serum from the collection tube. This is the part of the pipette that has a pre-defined volume (300ul).



# SAMPLE TYPES

VDI requires a few sample types for the submission of various panels. Read more on the sample types below.

#### Frozen Serum

- Serum collected from patient using SST or Red Top Tube
- Should be transferred to a non-additive tube
- Must be stored in a 0°F (-18°C) freezer, for up to 30 days
- Shipping requirements (see pages 8-13)
- Avoid gross Hemolysis/Lipemia. If unsure, contact VDI.

#### **Dry Serum**

- Serum collected from patient using SST or Red Top Tube
- If applying to a DSTK, it should be applied immediately once serum is obtained
- If not applying to DSTK immediately, sample may be kept in a 0°F (-18°C) freezer for up to 30 days. Do not refrigerate.
- If sample is previously frozen, bring to room temperature before applying to kit
- Avoid gross Hemolysis/Lipemia. If unsure, contact VD

#### Fur/Hair

- Fur should not be cleaned prior to collection, avoiding shampoos/chemicals
- 1 inch of fur closest to the skin should be collected
- Do not use brushed out fur, must be clipped from attached hair follicle
- Aim for 1 tablespoon in total fur volume
- Send fur in the provided paper envelope or a small plastic baggie
- Fur samples are not time/temperature sensitive

#### Effusion

- Fluid can be sent as a frozen sample in non-additive tube
- Fluid sample should be transferred to a DSTK once it is obtained
- Make sure to properlly identify which well on the DSTK device has the effusion
- If not applying to DSTK immediately, sample should be kept in a 0°F (-18°C) freezer
- If sample is previously frozen, bring to room temperature before applying to kit

#### Urine

- Urine must be sent in a leak-proof container. Contact VDI for examples
- Shipping should be done as to protect the sample container from breaking



# ORDERING KITS

VDI sells a variety of submission kits for all sample types. While not mandatory, they provide the most cost-effective ways to send samples to the lab for testing.

#### **ORDER ONLINE:**

www.vdilab.com



### Kit Options:

Frozen Serum Test Kits (FSTK)				
FSTK  Only available in the USA.	<ul> <li>Freezer Packs</li> <li>Styrofoam Container</li> <li>Test Requisition Form</li> <li>Non-additive tube</li> <li>UPS Next Day Air*</li> </ul>			
	*negotiated rate to ensure lowest cost. Must be packaged correctly per the instructions for full price savings.			

Mineral & Toxic Metal Fur Analysis Kit				
MTM Kit	•	Envelope for Fur Sample Test Requisition Form Return Envelope Return Postage (US only)		

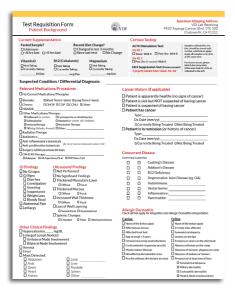
Dry Serum Test Kits (DSTK)			
Packaging Options: Economy Packaging	<ul> <li>Return Envelope (MAP)</li> <li>Sample Device with 2 wells</li> <li>Transfer Pipette</li> <li>Test Requisition Form</li> <li>Instructions</li> <li>Minimal packaging</li> </ul>		
Standard Packaging	<ul> <li>Components same as economy</li> <li>Packaged in individual box or "bento box" for easy access</li> </ul>		
Postage Options: Basic - Ground Advantage	USPS Ground Advantage shipping (4-8 days)		
Priority - Priority Mail	<ul><li>USPS Priority Mail shipping</li><li>(1-4 days)</li></ul>		
No Postage	No postage included (used with batch shipping or 2-kit panels)		
International Only	No return postage included		

# TEST REQUISITION FORM (TRF)

Available online, or with all VDI kits, is a Test Requisition Form used when submitting samples to the lab.

### The Form:





### Tips & Notes:

- Complete all fields to ensure timely results.
- Make sure to select which test(s) to run.
- Pricing listed on the TRF is only valid through the date found at the top of the page. For most current prices, look online or view an updated TRF.
- Prices listed as \$X/\$X are for monitoring prices. The first price is for the initial test on a patient, and the second price is if there is a repeat test within 6months for that patient.
- Old forms can be used whenever submitting samples if a test is offered but not listed, just write it in.
- When selecting multiple tests outside of standard panels, VDI will automatically select the most cost effective panel price for you. Many of these panels can be seen online using our Test Menu page (be sure to log in to see pricing).
- Some panels require special handling/preparation: frozen serum only, different sample types, etc. Be sure to read all requirements on the form. If you're unsure, contact VDI.

#### **COMPLETE THE REVERSE SIDE!**

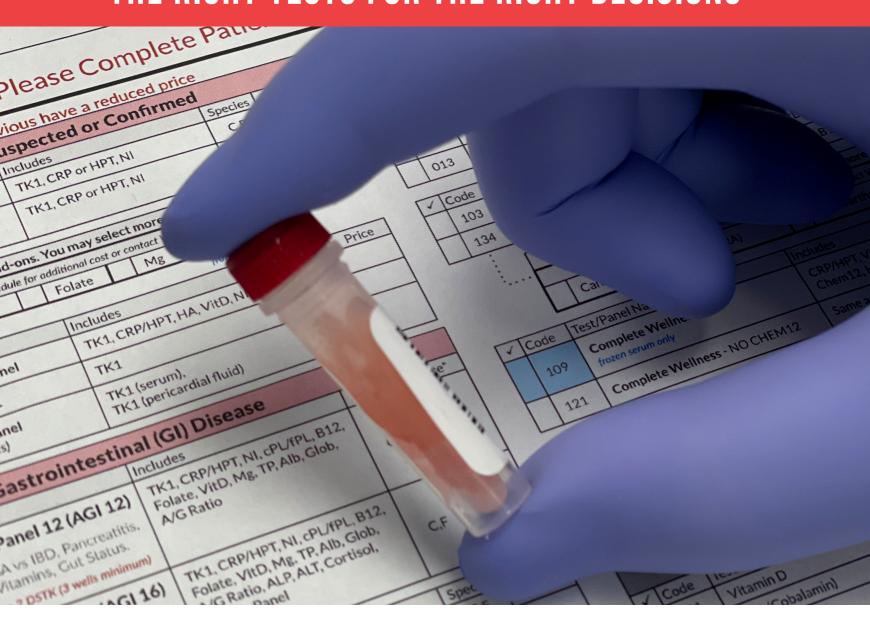
- The back of the TRF has patient context.
- The check boxes here are integrated into many of the result interpretations & algorithms.
- This page is also reviewed for case-specific commenting.
- Note that some sections may not be relevant to your selected panel and may be left blank.



### FROZEN SERUM

SAMPLE HANDLING, PROCESSING, & SHIPPING

### THE RIGHT TESTS FOR THE RIGHT DECISIONS®



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### **Directions for Sending**

# FROZEN SERUM

Instructions for packing frozen serum for shipment to VDI Laboratory can be found online at <a href="https://www.vdilab.com">www.vdilab.com</a> or on any FSTK purchased through VDI.



### VDI Frozen Serum Test Kit (FSTK)

#### **Includes:**

- 1. Styrofoam container with lid, inside cardboard outer box
- 2. Two freezer packs
- 3. Test Requisition Form & non-additive tube for sample
- 4. UPS Laboratory Pak with included UPS Next Day Air label

Note: If box is damaged (e.g writing on it) or not returned, or the UPS laboratory pack is not used, there will be a minimum charge of \$10.

### Instructions

### **Specimen Collection:**

- 1. Collect at least 1mL of serum using SST
  - Remove serum from clot within 2hr of draw
  - Transfer serum to a non-additive tube
  - Write patient name on tube
  - Place immediately into freezer
- 2. Complete Test Requisition Form
- 3. Keep sample frozen along with 2 freezer packs.
- 4. Package frozen sample, 2 freezer packs, and requisition form, inside the foam box when ready to ship. Do not write on, or apply stickers to box.
- 5. Close foam container inside cardboard box provided with the kit and place inside the laboratory pak.

### **Shipping:**

Only Ship Samples: M-Th DO NOT SHIP: F-Su

Ensure sample(s), and freezer packs are frozen solid before packing into the styrofoam container.

Place box inside the FedEx/UPS Laboratory Pak and seal shut. *Mandatory for discounted rate through VDI*.

Give the package to your routine driver. If you do not have a routine driver call VDI prior to 2pm local time to schedule a pickup at your location.







### Frequently Asked Questions

# FROZEN SERUM

Here are some common questions and answers associated with shipping frozen patient samples to VDI.

Can I ship frozen samples on a Friday?

No. Do not ship on Fridays or the day preceeding a holiday.

Can I ship multiple samples in one package?

Yes. Sending multiple samples in one package reduces costs. Just be sure that each tube is labeled with the patient's name and has a matching requisition form associated with it.

Can I use my own tubes for serum samples?

You can, but do not ship samples on the clot, packed cells, or gel barrier.

Transfer the sample to a separate non-additive tube with a tight fitting cap. Write each patient name on the tube. Plastic tubes are preferred to help prevent breakage in transit. Use glass tubes at your own risk.

Does VDI have shippers we can use?

VDI sells <u>Frozen Serum Test Kits</u> that have all the things you need to send a sample to the lab. Our kits are designed for maximum savings on shipping when packaged appropriately.

Is frozen serum better than dry serum?

Any tests validated on dry serum have equivalent performance to frozen. Dry is simply a method of stablization that gives you more options on shipping to help reduce costs or prevent rejections due to delays (i.e. weather related delays).

How long can I store frozen serum?

Frozen serum samples can be stored in a non-additive tube for up to 30 days in a standard 0fc (-18c) freezer. Do not refrigerate or leave at room temperature.



### Packaging Examples

# FROZEN SERUM

Clients are welcome to ship frozen samples using their own supplies as long as packaging allows samples to remain frozen until they arrive at the lab. See examples of proper and improper packaging on pages 12-14:

### **Acceptable Packaging:**





- Styrofoam container with tight fitting lid
- Lid taped shut
- Sufficient freezer packs, frozen solid
- Sample near ice packs

Plastic non-additive transport tube is preferred to avoid potential breakage. Use glass tubes at your own risk.

- Styrofoam container with tight fitting lid. inside an outer box
- Extra insulation & void fill
- Sample near freezer packs
- Sufficient freezer packs, frozen solid

The number of freezer packs is dependent on the size of the foam container. The larger the container the more freezer packs are required.



### **Packaging Examples**

# FROZEN SERUM

### At-your-own-risk packaging:

Samples shipped in this type of packaging run the risk of arriving warm, especially in summer months. Chance of sample rejection is higher.



- No styrofoam box
- Insulated mailer envelope
- Freezer pack outside of mailer
- One freezer pack
- Sample insulated from freezer pack



- Styrofoam sheets, loose fitting lid, inside an outer box
- Extra void fill
- Sufficient freezer packs, frozen solid
- Sample near ice packs

The number of freezer packs is dependent on the size of the foam container. The larger the container the more freezer packs are required.



### Packaging Examples

## FROZEN SERUM

### Non-acceptable packaging:

Samples shipped in this type of packaging will likely have the serum sample rejected. VDI will still charge for any shipping on our account.







- No styrofoam box
- No insulation
- Minimal freezer packs

 Tube placed in a Dry Kit return Envelope.

### Other Unacceptable shipments:

- Whole blood
- Non-approved sample types (e.g. fecal samples)
- Sample shipped only in a laboratory pack
- Multiple patients with unlabelled tubes/forms (we can't determine which sample belongs to which animal)
- TRF not include/incomplete especially with the clinic contact information



### Dos and Don'ts

# FROZEN SERUM

Things to avoid doing to prevent sample rejection, or additional charges.

#### DON'T:

Put the whole box in the freezer. This box is insulated and ice packs won't freeze quickly.



#### DO:

Place ice packs and sample in the freezer to ensure they freeze solid before packaging. They may be stored for up to 30 days in the freezer.



### DON'T:

Write on the box, apply stickers to the box, or exclude the outter box.

Damaged/missing boxes will result in a minimum \$10 charge.



### DO:

Package the styrofoam inside the box, and the box inside the return Laboratory Pak.



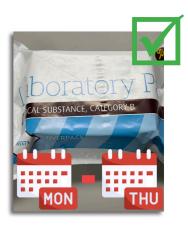
### **DON'T:**

Ship on Fridays. Ship before holidays.



### DO:

Ship Mon-Thur. Confirm if VDI is open around holidays.







### DRY SERUM

### SAMPLE HANDLING, PROCESSING, & SHIPPING

### THE RIGHT TESTS FOR THE RIGHT DECISIONS®



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- 19 | Directions for processing
- 20 | Tips & Notes: applying serum
- 21 | Directions for packaging
- 22 | Two-kit processing
- 23 | Express/Batch shipping
- 24 | Do's & Dont's





### What is

## DRY SERUM?

Dry Serum is a method of logistics in which the patient sample is stabalized in a "dry" format, without the need for refrigeration or freezing. It requires the use of a special technology called Samplla<sup>®</sup>.

To combat specimen degradation and the high cost of cold-chain logistics, VDI developed the Samplla technology. Applying a patent-pending process VDI dry specimen transport is able to acheive:

- 21-day stability at ambient temperature
- 14-hour stability at 50°C (122°F)
- Analytical sensitivity down to pmol concentration
- High correlation to frozen serum

### **Dry Serum Test Kit:**

Samplla technology is employed in the Dry Serum Test Kit (DSTK). The DSTK is the method of sending "dry" samples to VDI for testing. Each DSTK includes three mandatory components:

#### **Device for Serum Sample**



**Foil Device Pouch** 



Special Return Envelope



Combined, these 3 things make up the Modified Atmosphere Packaging, also called the MAP, which are critical to the stability of the sample. When samples are processed and packaged according to instructions, 3+ week stability is achieved. Continue reading for proper handling.



### **Directions for Processing**

# DRY SERUM

Collection and processing of samples using the Dry Serum Test Kit. Complete instructions are found included with all dry serum test kit orders.

- 1. Collect serum sample from patient.
- 2. Complete Test Requisition Form.
- 3. Open foil pouch using the tear tabs and remove only the black device.
- 4. Load the sample (see below).
- 5. Immediately place loaded device back into the foil pouch.
- 6. Seal pouch tightly edge to edge.
- 7. Place foil pouch & requisition form inside the return envelope.
- 8. Press firmly to seal dual-zip closure.
- 9. Peel tape backing and fold flap to the indicated line & press firmly along seam to ensure tight seal.

### Loading Patient Samples on Dry Serum Device:

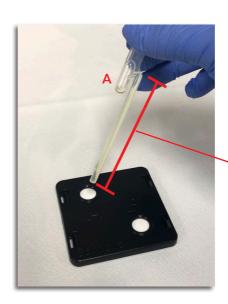
Note: Only one patient per device.



#### Extract serum from tube.

Use the included pipette by pressing the far bulb.

Avoid extractig gel barrier, red cells, clot, or fat.



it does not need to be retrieved. This overflow bulb is intended to insure the pipette stem is full.

A. Serum may flow into overflow bulb;

- Stem of Pipette must be filled avoid air bubbles
- Full stem gets applied to Well A
- Repeat for Well B
- Stem Volume = 300uL (0.3mL)
   precision pipette may be used
   if using your own pipette, exact volumes must be used. Do not approximate

Apply serum to device.

Fill Well A, refill pipette, then fill Well B.



### Tips and Notes

# DRY SERUM

Dry Serum sample processing may be non-standard for many technicians. Here are some tips to ensure successful processing.

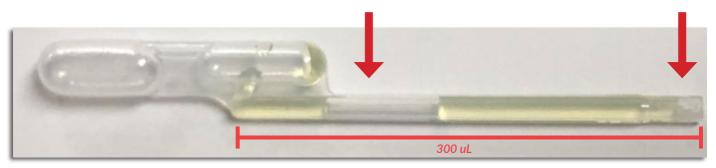
#### TIPS:

Each well of the device recieves 300uL (0.3mL) of sample. Avoid overfilling and underfilling wells to prevent rejections. Precision pipettes can be used in place of VDI provided pipettes.

Avoid extracting the gel barrier, red cells, or clot. from the collection tube.

VDI provided pipettes express 300uL of sample. Therefore, one stem-full of serum is equivalent to 300uL or 1 well.

When using the included pipette: avoid air bubbles. (see image below)



Fill both Well A & B whenever possible. If you are unable, contact VDI to confirm your selected panel can be run on 1 well. Some panels require 3 or 4 wells.

If serum is not immediately applied to device, it must be stored in the FREEZER, in a non-additive tube, for up to 30 days. When ready to apply to the kit, bring the sample to room temperature before applying to the DSTK.

Both the provided foil pouch & return envelope are required for sample stability.

Once sample is packaged in return envelope, testing within 2-3 weeks is required.

If yellow return envelope is sealed but needs reopened, please use new one - do not use tape to seal it shut. The MAP has been compromised.



### **Directions for Processing**

## DRY SERUM

After collection of serum from patient and applying to the device, be sure to follow the rest of the instructions accurately to ensure stability is achieved.

- 1. Collect serum sample from patient.
- 2. Complete Test Requisition Form.
- 3. Open foil pouch using the tear tabs and remove only the black device.
- 4. Load the sample (see page 19).
- 5. Immediately place loaded device back into the foil pouch.
- 6. Seal pouch tightly edge to edge.
- 7. Place foil pouch & requisition form inside the return envelope.
- 8. Press firmly to seal dual-zip closure.
- 9. Peel tape backing and fold flap to the indicated line & press firmly along seam to ensure tight seal.

### Package loaded sample into final MAP.



Place loaded device back into its foil pouch and seal pouch tightly from edge to edge

Write patient name and load date on the pouch sticker.

Place foil pouch along with completed test requisition form inside the yellow and white return envelope.







Seal the return envelope tightly. Then peel and stick the glue flap securely to create a strong secure seal.

Apply return label (if shipping individually) and mail through the appropriate carrier. If express or batch shipping, see page 23.

Note: if DSTK are mailed without postage, VDI will charge the clinic for postage a minimum of \$6.00.



### 2 Device Panels

## DRY SERUM

Some VDI panels require 3 or 4 wells worth of serum (e.g. Advanced GI Panel), which results in the need for 2 devices to be used. Read below on specifics.

#### TWO DEVICE SUBMISSION:

Each device is required to return to its own foil pouch that it came from.

Each foil pouch should have the patient name clearly written on it and sealed shut per the processing instructions for Dry Serum Test Kits.

Two foil pouches containing the patient sample, along with the matching Test Requisition Form (TRF) should be placed into a single yellow and white return envelope.

Return envelope can then be seal completely and prepared for shipping to the lab.

#### **DEVICE 1**



### **DEVICE 2**



### 1



#### **COMPLETED TRF**







### **Express & Batch Shipping**

# DRY SERUM

Dry Serum Test Kits are designed to be returned through the USPS individually, however many instances may warrant shipping samples faster to get faster results, or shipped in batches to reduce overall costs.

DSTK are available to order with no USPS postage at a reduce rate to avoid paying for shipping twice. Note: if DSTK are mailed without postage, VDI will charge the clinic for postage a minimum of \$6.00.

#### **EXPRESS SHIPPING:**

FedEx, UPS, and other courier labels may be applied directly to the yellow and white return envelope, however VDI recommends placing them secondary packaging if possible (e.g. small box, large envelope, or laboratory pak).

When placing envelopes in secondary packaging, be sure to seal the envelopes tightly according to the instructions.

Express shipments can be requested through VDI for reduced rates. Contact VDI about our Two-Day and Next Day express options.

### **BATCH SHIPPING:**

To further reduce costs, batch shipping samples is a great option. Each patient should be in its own return envelope and sealed tightly according to the instructions. All samples may then be placed into a secondary packaging and shipped to the laboratory.



As long as samples are prepared and packaged properly in their kits, they have at least two weeks to be tested by the laboratory. Clinics are welcome to send samples however they want as long as they meet those criteria.



### Dos and Don'ts

# DRY SERUM

Things to avoid doing to prevent potential rejection or compromised samples.

#### **DONT:**

Cut or damage the foil pouch or return envelope, or use tape to repair a cut/damaged pouch. The integrity of the packaging is important to the stability of the sample. Do not leave device out of the pouch for extended periods of time. Only open the pouch when you are ready to apply the sample and repackage into the final MAP.









#### DO:

Ensure any items that come out of the foil pouch are returned to the foil pouch, ensure there is no damage to the pouch or envelope, close all seals tightly edge to edge, and affix any shipping label if needed. Record the tracking number for your records.





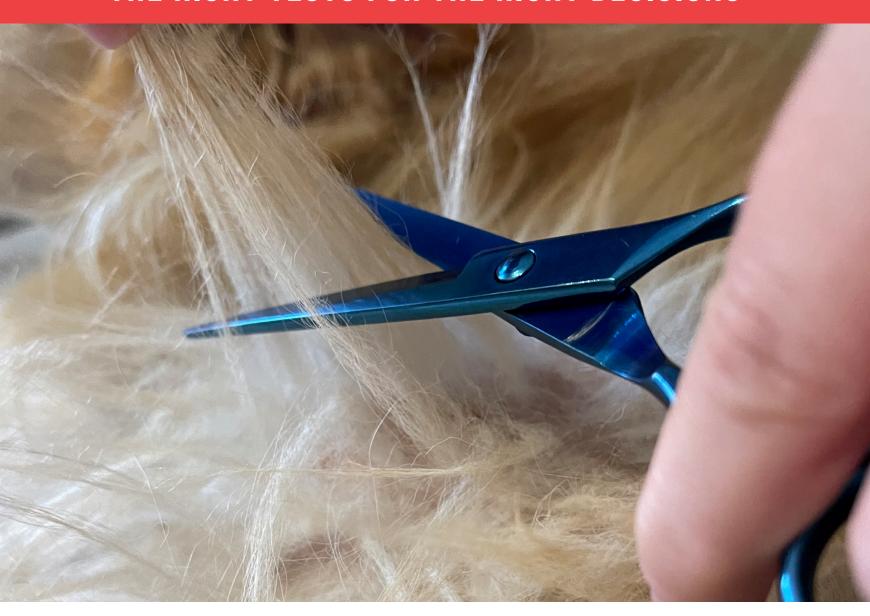






# FUR / HAIR SAMPLE HANDLING, PROCESSING, & SHIPPING

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### **Directions for Sending**

# FUR SAMPLES

Instructions for preparing fur/hair samples for shipment to VDI Laboratory, as found online at <a href="https://www.vdilab.com">www.vdilab.com</a> or in any fur kit purchased through VDI.

### Fur Analysis Kit



#### Includes:

- 1. Paper envelope for fur sample
- 2. Test Requisition Form
- 3. Return envelope & label (US only)

  A VDI kit is not required to submit fur samples to VDI.

#### Instructions

#### **Sample Collection:**

- Fur should NOT be cleaned before collection of the sample to avoid artificial results
- 200mg of fur is required. See images to the right for examples
- Fur closest to skin is the most current sample. Aim to collect the 1-2 inches (40-50mm) of fur closest to the skin
- Avoid cutting, scrapping, or damaging the skin when collecting the fur sample
- DO NOT use brushed out fur.

### How much is 200mg?



A way to estimate is to fill a Tablespoon (Tbsp) with fur. Fur should be lightly pressed into the well, until full or overflowing.



For short-coat animals where shaving is required, use the Tbsp method, or shave roughly a 4" x 4" area. It's better to have too much, than too little fur.



Collect Fur Sample
Follow instructions to collect fur
sample appropriate for the pet's coat
length.



Complete Forms

Fill in all information completely to avoid delays in reporting. Additionally, write the pet name on the bag/envelope containing the fur sample.



Package and Ship
Once sample is collected and the form
is completed, pack both inside a return
envelope and apply the mailing label. Retain
the tracking information for your records.
Mail the envelope.



### **Collection Instructions**

# FUR SAMPLES

### **Long Coat Animals:**

### 1. Identify area for sampling

Ventral neck is preferred location

If this is a retest, collect from same location as first test

#### 2. Remove far end of fur coat

- 1. Trim fur back until only 1.5 to 2 inches (40-50mm) remain
- 2. Discard trimmed fur



### 3. Collect fur sample

- 1. Trim remaining fur close to the skin. Avoid damaging the skin when taking the sample
- 2. Obtain 200mg of fur (see examples on Tips & Notes flap)
- 3. Place trimmed fur into a clean paper or plastic baggie and seal shut
- 4. Label the baggie with the patient name.





### **Short Coat Animals:**

### 1. Identify area for sampling

Ventral neck is preferred location

If this is a retest, collect from same location as first test.

### 2. Collect fur sample

- 1. Trim fur close to the skin. Avoid damaging the skin when taking the sample
- 2. Obtain 200mg of fur (see page 19)
- 3. Place trimmed fur into a clean paper or plastic baggie and seal shut
- 4. Label the baggie with the patient name.







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