How to Prepare and Ship to the UC DAVIS AMINO ACID LABORATORY

https://www.vetmed.ucdavis.edu/labs/amino-acid-laboratory

Tips:

1. Please read all shipping and handling instructions provided in this document and on the UC Davis Amino Acid Lab web page (link above).
2. When you make your appointment for the blood draw at your local vet, let them know you plan to send it to the UC Davis Amino Acid Lab for Taurine Testing and that you will need a **whole blood sample**.
3. Find out if your vet will ship the vial of whole blood with the information provided in this document, or if you will need to ship it yourself. Using 3rd party services such as IDEXX or ANTECH will be significantly more expensive than having your vet or you ship the blood. If you are shipping multiple blood samples, you can use the same shipping container, but be sure each vial identifies the dog it was drawn from.
4. If you need to ship it yourself, follow these suggestions BEFORE your appointment:
   - Find out if your vet will provide ice packs or a shipping container. Some will provide ice packs, but you may need to provide these and have them frozen, ready to go when you go in for your appointment.
   - Obtain a small insulated container or lunch bag to hold the ice packs and blood.
   - You will also need several Ziploc freezer bags. One for the paperwork and one or two for the samples.
   - Bring bubble wrap and a heavy cardboard shipping box to place the insulated bag in. These may be obtained at the FedEx shipping location.

   AFTER your appointment:
   - Your vet will advise you on packaging the sample. Place the tube(s) into a Ziploc bag and seal. Wrap the Ziploc bundle in bubble wrap and place inside another Ziploc bag. Tubes must be watertight. Use additional bubble wrap to fill in any extra space in the container.
   - DO NOT INCLUDE A PAYMENT CHECK WITH YOUR SAMPLE. You or your vet will be invoiced.
   - Click the Submission Form to download it.
   - To receive an invoice, list your email address in the billing area. Invoices are sent out once a month and will include the address of where to send the check and who it should be made out to.
   - To receive a copy of the results, add a note on the form asking the lab to send the results to you, the owner also. Place the submission form into a separate Ziploc bag and place inside the insulated container with the bubble wrapped tubes.
   - Place the insulated container in the cardboard shipping box.

Blood Preparation:

Whole Blood Preparation (for taurine only):

Take 1 ml or more of blood using current (not outdated) **sodium or lithium heparin** as an anticoagulant. Use a current green top tube or a heparinized syringe containing 2 to 3 drops of heparin. Draw blood then draw 1 cc air for mixing space. Invert syringe or vacutainer 5 times to mix the heparin. Syringe drawn heparinized whole blood should be transferred to a clean tube. Please ship in a secondary container.

Shipping – Handling of Samples:

Samples of whole blood can be shipped unfrozen if shipped on the same day as taken. Keep sample refrigerated until shipped. If the sample is stored overnight or longer, the sample should be frozen. Put sample(s) in plastic tube(s) OR place glass tubes in a secondary plastic container.

Ship samples with frozen cold packs. Samples sent via FedEx Overnight Delivery will be delivered directly to the Amino Acid Lab on Veterinary Medicine Drive. Samples sent overnight by USPS Express Overnight Mail or UPS, will be delivered to the campus Central Receiving office that is 3 miles away from the Lab. Central Receiving has very limited refrigeration space. Your samples will be delayed a day if they go through Central Receiving. SHIP WITHIN THE FOLLOWING DAYS:

FedEx: **Ship Monday through Thursday ONLY**.
U.S. Mail (USPS) or UPS: **Ship Monday through Wednesday ONLY.**

T**he laboratory does not receive deliveries on the weekend.** The preferred way to ship is FedEx. If possible, team up with people in your area to ship vials in the same box and share the cost of shipping.

Ship to the following address:
Amino Acid Laboratory
University of California, Davis
1020 Vet Med 3B
1089 Veterinary Medicine Drive
Davis, CA 95616

Contact Info:
Laboratory Manager: Dr. Zengshou Yu
Phone: (530) 752-5058
Fax: (530) 752-7690 Fax: (530)752-4698

Services and Current Rates

NEW RATES EFFECTIVE JULY 1, 2016

Note to UC Customers ONLY: non federal funds must be billed.

Taurine Analysis:	Non-UC Rates	UC Recharge Rates
Plasma	$75 / Sample	$64 / Sample
Whole Blood	$76 / Sample	$65 / Sample

1. How long will it take to receive my results?
Due to the increased volume this issue has caused, please allow for up to 1 week.

2. Should I send plasma or whole blood for taurine analysis?
Although blood taurine concentration is only a fraction of the concentration in the tissues, blood and plasma taurine concentrations do change in proportion with tissue concentrations (Pacioretty L, Hickman MA, Morris JG, Rogers QR. Kinetics of taurine depletion and repletion in plasma, serum, whole blood and skeletal muscle in cats. Amino Acids 2001;21:417–427). Whole blood taurine concentrations may be used to substantiate a diagnosis of taurine deficiency when plasma concentrations are equivocal. In addition, whole blood taurine concentrations are only slightly altered after eating, whereas plasma taurine concentration may change substantially in taurine-depleted animals (Pion PD, Lewis J, Greene K, Rogers QR, Morris JG, Kittleson MD. Effect of meal-feeding and food deprivation on plasma and whole blood taurine concentrations in cats. J Nutr 1991;121:S177–S178. Delaney SJ, Kass PH, Rogers QR, Fascetti AJ. Plasma and whole blood taurine in normal dogs varying size fed commercially prepared food. J Anim Physiol Anim Nutr: 2003;87:236-244). A substantial increase in plasma or serum taurine concentration can occur secondary to taurine leakage from granulocytes and platelets, as occurs with clotting or hemolysis, but analysis of whole blood taurine concentration is not confounded by these effects.

In cases of taurine depletion, plasma concentrations decline into the critical range before whole blood concentrations reach the critical range. However, in some cases where results are equivocal, or may be suspect due to sample hemolysis, measuring whole blood in addition to plasma or instead of plasma may yield a more reliable result.