

# Sample Collection



Kendal E. Harr, DVM, MS, DACVP

## KEYWORDS

- Quality management • American Society for Veterinary Clinical Pathology
- Lymphodilution • Jugular vein

## KEY POINTS

- Deviation from recommended protocols can adversely affect test results resulting in incorrect diagnoses.
- Quality management of samples must start in the patient, extend through sampling itself, include appropriate short transport and then be correctly accessioned at the referral laboratory or in-house station to ensure accurate diagnosis of disease.
- Information concerning sample requirements, proper collection, handling, and delivery or shipping procedures for any assay performed at a referral laboratory should be available to the veterinarian electronically, in written materials.
- These materials should be maintained in the clinic in a manner easily accessible to staff.
- Specimens should be handled carefully and transported to the laboratory in a timely manner under conditions appropriate for the type of sample and its stability.
- Contact manufacturers for specific details that are available digitally or in writing.

## REQUIRED SAMPLE COLLECTION MANUAL AND PERSONNEL

Samples should be collected according to standard practices that are detailed herein. Deviation from recommended protocols can adversely affect test results. Information concerning sample requirements, proper collection, handling, and delivery or shipping procedures for any assay performed at a referral laboratory should be available to the veterinarian electronically, in written materials (such as a laboratory services manual, special information sheets, etc), and should be maintained in the clinic in a manner easily accessible to staff at all times. According to American Society for Veterinary Clinical Pathology guidelines,<sup>1</sup> detailed sample collection protocols should be available from your referral laboratory and you can simply call to receive the manual. If you are running these analysis in your clinic, you have taken on the responsibility of collecting and organizing all of this information. Instrument manufacturer's package inserts have detailed descriptions of appropriate samples, including collection tubes and handling conditions. The specimens should be handled carefully and transported to the laboratory in a timely manner under conditions appropriate for the type of sample and its stability. Contact manufacturers for specific details, which are available

---

Disclosure: The author has nothing to disclose.  
URIKA, LLC, 8712, 53rd PI W, Mukilteo, WA 98275, USA  
E-mail address: [drharr@urikapathology.com](mailto:drharr@urikapathology.com)

Vet Clin Exot Anim 21 (2018) 579–592  
<https://doi.org/10.1016/j.cvex.2018.05.008>

[vetexotic.theclinics.com](http://vetexotic.theclinics.com)

1094-9194/18/© 2018 Elsevier Inc. All rights reserved.

digitally or in writing. A quality assurance plan at the laboratory chosen is mandatory under ASVCP guidelines.

Laboratory and veterinary clinic personnel should have specific training in sampling, specimen handling, and sample preparation for exotic species contained in this article. Training should include basic prevention of bacterial contamination as well as information on zoonotic diseases including *Chlamydia*, West Nile Virus, Salmonella, avian influenza, Giardia, and any other diseases likely to be encountered in the practice. Documentation of training, continuing education, and periodic proficiency assessment should be done annually at the direction of the clinic and/or laboratory director.<sup>2</sup>

## BLOOD COLLECTION

The smallest needle size appropriate to the species and sample volume should be used, which is most commonly a 22- to 25-G needle in medium to small species. Smaller gauges should not be used because shear forces will result in increased cell lysis and poor sample quality. Samples with moderate to severe hemolysis should be flagged or rejected by your laboratory.<sup>1</sup> Larger gauges may be required in larger reptiles to penetrate the scaled dermis and may make blood collection faster. Consider using a stylet to prevent dermal and tissue plugs in the blood sample, which can stimulate clotting.

Calculate the maximum safe blood volume before collection. Reptilian total blood volume is approximately 5% to 8% of bodyweight. In a healthy normovolemic animal, 10% of the blood volume can be collected safely, that is, 0.5% to 0.8% of body weight (in grams). Hence, the phlebotomist can collect 0.8 mL blood from a 100-g gecko safely. Collect blood samples as soon as possible after the animal is restrained or anesthetized to minimize the effects of restraint or sedation on plasma biochemical and hematologic values.

When sampling reptiles (poikilotherms), it is important to maintain their temperature before, during, and after sampling. To accurately assess blood values, the clinician must have good temperature data from exactly where the animal is residing in their enclosure. It does not matter what the temperature is under the lamp if that is not where the animal stays in the enclosure. Lower temperatures result in lower cell counts and lower enzymatic activity in the animal.<sup>3-6</sup> The clinician must expect that, if animals have been chronically housed in a suboptimal temperature either by owners or in the clinic, values may be falsely lowered. When the poikilotherm is then rechecked, having been housed in the thermoneutral zone, values will increase potentially then indicating inflammation. However, the animal seems to be better clinically. This finding is to be expected and is an indication to continue therapy because the animal is still mounting a response to the likely chronic infection. It is not an indication that there is a problem with therapy. Hence, the herpetology-savvy clinician must have a good understanding of the animal's environment, including temperature, to interpret diagnostic blood data.

The clinician must also have information about recent meal consumption in addition to temperature data. A good example is the postprandial snake, which can seem to have mild azotemia and possible renal disease when the reality is that it is just well fed. It is best to ensure fasting samples in reptiles to avoid confusion. Another renal disease mimic is, of course, oviparity. Accurate identification of sex may be a problem in some species, but this information is worthwhile to pursue so that this partitioning factor is known.

Lymphodilution occurs more commonly in reptiles than in other orders of animals. Many vessels used for blood collection in reptiles are in close approximation to lymph vessels.<sup>7</sup> Normal lymph contains small, well-differentiated lymphocytes and variable

Download English Version:

<https://daneshyari.com/en/article/8486869>

Download Persian Version:

<https://daneshyari.com/article/8486869>

[Daneshyari.com](https://daneshyari.com)