

The Facts on Equine Drug Testing



TEXAS A&M
TVMDL
VETERINARY MEDICAL
DIAGNOSTIC LABORATORY

SADDLERY

CONTACT

Travis Mays, MS

Interim Section Head

Analytical Chemistry,

Drug Testing Laboratory

Toxicology Laboratory

979.845.3414

tmays@tvmdl.tamu.edu

A person wearing a red shirt and blue jeans is riding a white horse in an outdoor arena. The horse is in motion, and the rider is looking forward. The background is slightly blurred, showing a fence and trees.

LIMITATIONS IN DRUG TESTING

While advancements in analytical equipment over the years have had many positive attributes, some limiting factors still exist. One such factor is sensitivity. The ability of these machines to detect and quantitate drugs at very low levels has generated questions involving threshold levels used in regulatory testing. With increased instrument sensitivity, equine veterinarians should consider what questions they are trying to answer when requesting a drug test in a horse.

Interpretation of results can vary greatly when comparing “zero tolerance” with a therapeutic or threshold level drug. If a drug is confirmed at a very low level, one must consider whether any physiologic or clinically apparent benefit was present at the time of sample collection.

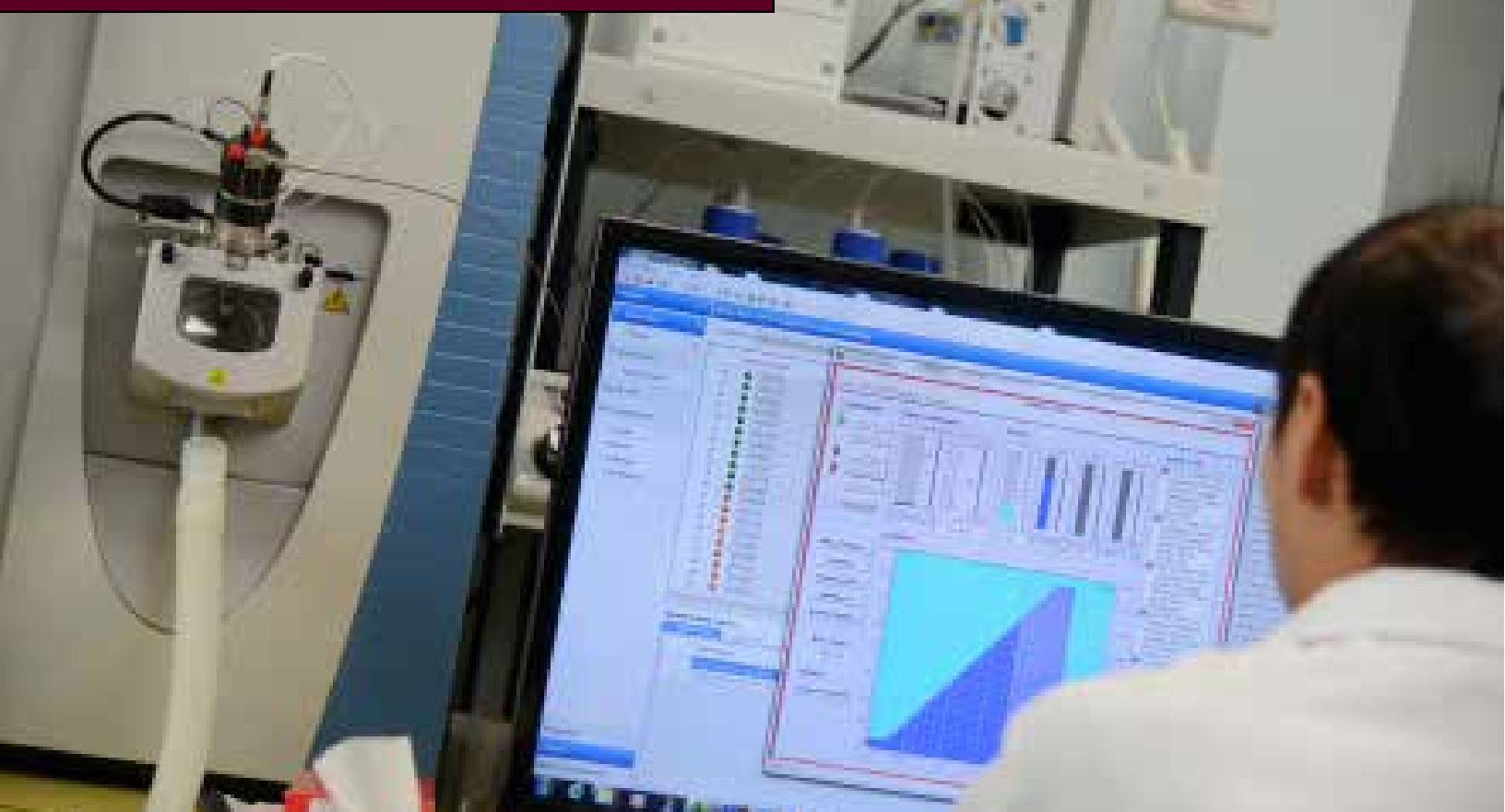
Another limiting factor associated with drug testing relates to the evolution of drugs and drug classes. Proteins, peptides and some endogenous compounds are becoming more popular. While the technology to detect these substances in biological samples exists, some require a significant amount of time and resources. Once a drug testing protocol is established, routine screening for these substances is recommended.

WHY USE TVMDL?

- Improvements in analytical capabilities have allowed TVMDL to refine its testing procedures and offer clients more broad-based screening.
- Years of experience with the requirements of shows and events
- Internationally- accredited Quality Assurance means results you can rely on
- Client service is the top priority

We encourage clients to contact the Drug Testing Lab with any questions.

ANALYTICAL TESTING



Analytical testing capabilities for drug testing have evolved significantly over the years. Historically, techniques such as thin layer chromatography (TLC), gas chromatography (GC) and gas chromatography – mass spectrometry (GC/MS) were used to detect drugs. More modern day tests include enzyme-linked immunosorbent assay (ELISA), high-pressure liquid chromatography (HPLC) and liquid chromatography – mass spectrometry (LC/MS).

Currently TVMDL's Drug Testing Lab performs sample screening utilizing LC/MS technology. The advantages of using this state-of-the-art equipment include increased sensitivity, increased sample throughput, more accurate detection and identification, and the ability to screen for hundreds to thousands of drugs in a single analysis. This transition also allows TVMDL to evaluate and add new drugs as needed.

The Facts on Equine Drug Testing

Drug testing is an ever-changing field that has been well documented and publicized in human athletes for quite some time. However, drug testing in equine athletes is less discussed but has gained prominence for equine breed and performance associations in the past decade.

While most equine owners and organized associations are aware drug testing is available, information is lacking on how to put in to practice a drug testing protocol. The Texas A&M Veterinary Medical Diagnostic Laboratory (TVMDL) routinely handles equine drug testing for event qualification. TVMDL can assist associations, as well as individual shows and events, with establishing a drug testing protocol that benefits the event and breed.

TOP QUALITY TESTING

Quality of testing is vital in providing reliable and accurate results with regards to drug testing. TVMDL's quality assurance programs exist to provide assurance to you, the client, that the results you receive are generated by dedicated, trained personnel using standardized, validated reagents and methods. TVMDL has invested considerable resources in its Drug Testing Lab over the last two years to provide state-of-the-art, quality diagnostic testing that provides maximum testing accuracy, timeliness, and cost-effectiveness.

The Drug Testing Lab is an ISO 17025 accredited lab. ISO 17025 is an international standard for the competence of testing and calibration laboratories. The ISO 17025 accreditation is conducted through the American Association for Laboratory Accreditation (A2LA). The ISO 17025 accreditation is designed specifically for competition animal drug-testing laboratories. With this accreditation, clients can be assured they are receiving accurate testing with state-of-the-art instrumentation and an experienced staff.



TESTING CAPABILITIES

The Drug Testing Lab at TVMDL has the ability to build a custom drug screen to meet your needs. TVMDL is capable of screening for hundreds of drugs in a variety of classes, including:

- NSAIDs (non-steroidal anti-inflammatory drugs)
- tranquilizers
- sedatives
- beta-agonists
- corticosteroids
- anabolic steroids

The primary sample types that TVMDL routinely tests in horses include serum and urine.

Testing serum is becoming more common. Serum provides insight into what might be in the animal's system at the time of collection. In addition, TVMDL can detect whether a substance was given within a reasonably short period of time using serum.

Urine testing is also beneficial as it can provide information about what a horse might have been exposed to several days or even weeks prior to sample collection. This is achieved by screening not only for the parent drug, but also for metabolites.

In addition to testing urine and serum, TVMDL also has the capability to test other samples that an equine veterinarian may feel are of value. For example, TVMDL can screen feed samples for various drugs and test medications and drug solutions to ensure no other drugs are present in the solution or to verify the concentration listed on the label. Occasionally TVMDL receives unlabeled suspected drug solutions for identification and test these as unknowns. Other biological samples that TVMDL can test include whole blood, liver, kidney, stomach contents and ocular fluid. A minimum of 20 grams of tissue, stomach contents or feed are required for testing.



Sample volume is often times a limiting factor in drug testing. TVMDL's testing procedures consist of a screening phase followed by confirmation testing. If a sample is deemed suspect from the initial screening, the sample is re-extracted using a new aliquot from the original container. Drug-specific controls are also extracted and tested alongside the sample. This confirmation test is used to determine whether a sample is reported as positive or negative.

TVMDL clients are provided with information on sample collection and shipping practices that enable ease of testing and expedited delivery. More information on TVMDL's shipping partners can be found at tvmdl.tamu.edu.



