

Equine Drug Testing

Our approach to equine pre-purchase examinations is based on the analysis of samples in a timely manner. This ensures that results are available to prospective purchasers before making a final decision.

Pre-purchase sample analysis provides increased assurance to the purchaser that the vendor has fully disclosed any medication given prior to the examination and sampling.

Our range of testing options allows veterinary surgeons for the first time to vary the extent of testing required dependant on the value of the horse, its intended use and any clinical concerns which may arise during pre-purchase examination.

We can offer a next day turnaround* for an additional fee for the Pre-Purchase Screen (PPS), NSAID panel (PP1) and the Tranquilliser Panel (PP2) with a routine turnaround of 3-5 working days for all Equine panels. (*On receipt at CTDS).

Please contact the Laboratory for a full list of Panel Agents.

Blood sample kits can be ordered for Equine Toxicology testing. These kits include a 6 month sample storage where Pre-Purchase testing could be required at a later date. **Please contact the Laboratory.**

Equine Drug Testing	Sample	Code	£
Pre-Purchase Screen A cost-effective screen for commonly found substances: Acepromazine, Detomidine, Flunixin, Fluphenazine, Ketoprofen, Meloxicam, Mepivacaine, Phenylbutazone and Reserpine	HB/UR	PPS	
Pre-purchase panel 1 (NSAIDs) (next day or 3-5 day turnaround) A comprehensive panel of Non-steroidal drugs including Meloxicam, Phenylbutazone and Flunixin.	HB/UR	PP1	
Pre-purchase panel 2 (Tranquillisers) (next day or 3-5 day turnaround) A comprehensive panel of tranquilisers including Acepromazine, Fluphenazine, Reserpine and Xylazine.	HB/UR	PP2	
Pre-purchase panel 3 (Glucocorticoids) (next day or 3-5 day turnaround) A comprehensive panel of glucocorticoids and metabolites including Aldosterone, Betamethasone and Dexamethasone.	HB/UR	PP3	
Pre-purchase panel 4 (Growth promoters + Anabolic Steroids) A comprehensive panel of growth promoters and anabolic steroids including Clenbuterol, Nandrolone, Ractopamine and Stanozolol.	HB/UR	PP4	
Kit including frozen sample storage for 6 months	Contact	FSS	
Next day results on receipt at CTDS		NDT	

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Sample Selection for Toxicology

We require a minimum volume of 2ml whole blood, 10ml plain urine, 10g fresh tissue, 10g feed or contaminated materials, 5ml stomach contents as applicable.

Unfortunately, we cannot process formalin fixed tissue or faeces.

For equine pre-purchase, we require a minimum of 20ml whole blood (10ml plasma) or 10-20 ml urine. If insufficient sample is received, we may not be able to complete all the requested tests and the sensitivity of toxin/drug detection could be reduced.

For all samples for diagnostic and pre-purchase toxicology it is essential that samples are labelled with the animal and owner names and the date of sample collection.

For cases where there is a possibility of legal action, samples should be sent by tracked mail or courier and accompanied with a Practice Chain of Evidence form. Please contact the Laboratory if this is required. Please also tick the Chain of Evidence box on the toxicology submission form (£25.00 + VAT fee applies).

Key to Sample Abbreviations

CM	Contaminated Materials	FT	Fresh tissue
FD	Feed samples	HB	Heparinised whole blood
FP	Fluid in plain tube	UR	Urine
		VX	Stomach contents



Toxicology & Drug Testing 2018

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Our Unique Toxicology Service ...

... provides affordable, flexible, rapid testing for toxins and toxic compounds using gas chromatography-mass spectrometry (GC-MS) and High Pressure Liquid Chromatography (HPLC). These techniques allow us to test for more than 30,000 substances with results often available in 3-5 working days.

Next day results* for these panels can be provided for an additional £45 +VAT (*On receipt at CTDS and when analytical techniques allow this).

A complete range of testing for further toxic agents is also available.

Comprehensive advice on test selection, sampling and result interpretation for all cases is available from our clinical pathologists.

Our Extensive General Toxicology Panel Screens For Over 30,000 Drugs and Poisons



Extensive General Toxicology (TO1)

Turnaround 3-5 days (next day available +£45)
Screening for 30,000 drugs and toxins including the following:

Antiarrhythmics

Disopyramide
Verapamil

Analgesics

Dextropropoxyphene
Tramadol
Pethidine
Acetaminophen
Butorphanol

Anticonvulsants

Carbamazepine
Phenobarbitone
Levetiracetam

Antidepressants

Amitriptyline
Imipramine
Desipramine
Trimipramine
Clomipramine
Dothiepin
Citalopram
Sertaline
Fluoxetine

Antihistamines

Diphenhydramine
Chlorpheniramine
Cyclizine

Barbiturates

Amobarbital
Secobarbital
Butobarbital
Pentobarbital

Benzodiazepines

Diazepam
Temazepam
Nordazepam
Nitrazepam
Oxazepam (Only identifiable with blood)
Chlordiazepoxide
Flunitrazepam
Midazolam

Toxins

Paraquat (Included in tox panel if 10mls of urine submitted)
Diquat (Included in tox panel if 10mls of urine submitted)
Strychnine
Metaldehyde
Methiocarb
Bendiocarb
Pirimicarb
Praziquantel

NSAIDs

Acetylsalicylic acid
Phenylbutazone
Flunixin
Meclofenamic acid
Diclofenac
Ibuprofen
Flurbiprofen
Diflunisal
Indomethacin
Tolmetin
Oxyphenylbutazone
Naproxen

Phenothiazines

Acepromazine
Phenothiazine
Chlorpromazine
Thioridazine
Trifluoperazine
Promazine
Promethazine
Fluphenazine

Local Anaesthetics

Mepivacaine
Lidocaine
Dibucaine
Bupivacaine

Miscellaneous

Caffeine
Chocolate (measured as Theobromine)
Doxapram
Theophylline
Propranolol
Methocarbamol
Ketamine
Propofol
EDDP (Methadone metabolite)
Cotinine

Agents not included in the TO1 panel

These require to be requested and tested separately

Ethylene glycol by GCMS (3-5 day turnaround)
Organophosphates/Carbamates
Warfarin and Coumarin derivatives
Carbon monoxide (1ml heparin whole blood)
Alphachloralose (minimum 10ml urine required)
Vitamin K1 / K1 epoxide

Extensive Toxicology Including Organic Compounds (TO22)

Screening for 50,000 drugs and toxins;

Includes TO1 plus the following toxic agents

Pesticides
Herbicides
Fungicides
Toxic plant alkaloids
Xylitol
Wide range of industrial products

Note: whilst this panel includes many pesticides, specific panels for organophosphates/glyphosate/ AMPA and further specific pesticides are available, please contact the lab to discuss requirements

Heavy Metal Screen (TO28)

Fluid, Feed and Soil

Aluminium	Cobalt	Phosphorus
Antimony	Copper	Potassium
Arsenic	Iron	Selenium
Barium	Lead	Sodium
Boron	Magnesium	Sulphur
Cadmium	Manganese	Thallium
Calcium	Mercury	Zinc
Chromium	Molybdenum	

Whole Blood Samples

Antimony	Chromium	Selenium
Arsenic	Lead	Thallium
Beryllium	Mercury	Vanadium
Cadmium	Nickel	

Tissue Samples

Arsenic	Iron	Molybdenum
Cadmium	Lead	Selenium
Cobalt	Manganese	Thallium
Copper	Mercury	

Mycotoxin Panel (TO24)

Mycotoxins

Aflatoxins	Vomitoxin
Zearalenone	

Drugs of Abuse (TO8)

Drugs of Abuse

Codeine	Cannabis
Amphetamine	MDMA
Cocaine	Morphine
Heroin	Buprenorphine
Methadone	

Toxicology Price List

Toxicology	Sample	Code	£
Extensive toxicology screen (next day or 3-5 day turnaround) *	HB/UR/FT/CM/VX	TO1	
Extensive toxicology screen + Ethylene glycol by GC-MS (next day or 3-5 day turnaround) *	HB/UR/FT/CM/VX	TO2	
Heavy metal screen	FT/AB/AF/FD	TO28	
Extensive toxicology including organic compounds	HB/UR/FT/CM/VX	TO22	
Ethylene glycol by GC-MS (next day or 3-5 day turnaround)	HB/UR/FT/CM/VX	TO4	
Warfarin and coumarin derivatives	HB/FT/CM/VX	TO5	
Caffeine and Theobromine (next day or 3-5 day turnaround)	HB/FT/CM/VX/FD	TO7	
Alphachloralose, Paraquat and Diquat (next day or 3-5 day turnaround)	10ml UR	TO12	
Convulsant Screen (Strychnine, Tremorgenic Mycotoxins (Roquefortine, Penitrem A), Bromethalin)	VX/FD	TO21	
Mycotoxin panel (Aflatoxins, Zearalenone, Vomitoxin)	VX/FD	TO24	
Drugs of Abuse	10ml UR	TO8	
Metaldehyde (next day or 3-5 day turnaround)	HB/UR/FT/CM/VX	TO9	
Metaldehyde, Strychnine and Methiocarb (next day or 3-5 day turnaround)	HB/UR/FT/CM/VX	TO10	
Vitamin K1 / K1 Epoxide	HB	K1EP	
Single agent toxicology (please contact lab prior to submission)		TO27	
Next day results on receipt at CTDS		NDT	

*Please include urine (10ml) for Paraquat / Diquat in panels.

Key to Sample Abbreviations

AB	Blood - Any as applicable	CM	Contaminated Materials	FT	Fresh tissue	UR	Urine
AF	Fluid - Any fluid material	FD	Feed samples	HB	Heparinised whole blood	VX	Stomach contents

Vitamin K1/K1 Epoxide (K1EP)

Vitamin k1/K1 Epoxide

K1	K1 Epoxide
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Increased concentrations of vitamin K1- 2,3 epoxide, a metabolite of vitamin K, indicates the inhibition of the enzyme vitamin K epoxide reductase. This is a key biochemical change which occurs with the presence of warfarin or a superwarfarin rodenticide toxicity. This assay is combined with measurement of vitamin K and is used on blood samples to check for the presence of these agents.

Often by the time clinical signs are present, the actual toxic compound is cleared from the blood and can only be detected in liver.

This test is particularly helpful in cases where blood is the only sample type available and is routinely recommended for suspected vitamin K antagonist rodenticide toxicity. The warfarin and Coumarin panel (TO5) is appropriate for analysis of suspect material, gastric contents and liver samples.

Warfarin & Coumarin Derivatives (TO5)

Warfarin and Coumarin Derivatives

Brodifacoum	Difethialone
Bromadiolone	Diphacinone
Chlorphacinone	Warfarin
Difenacoum	

Convulsant Screen (TO21)

Convulsants including Tremorgenic Mycotoxins

Strychnine	Penitrem A
Roquefortine	Bromethalin

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