

Clinical Pathology



Laboratory Manual: External clients

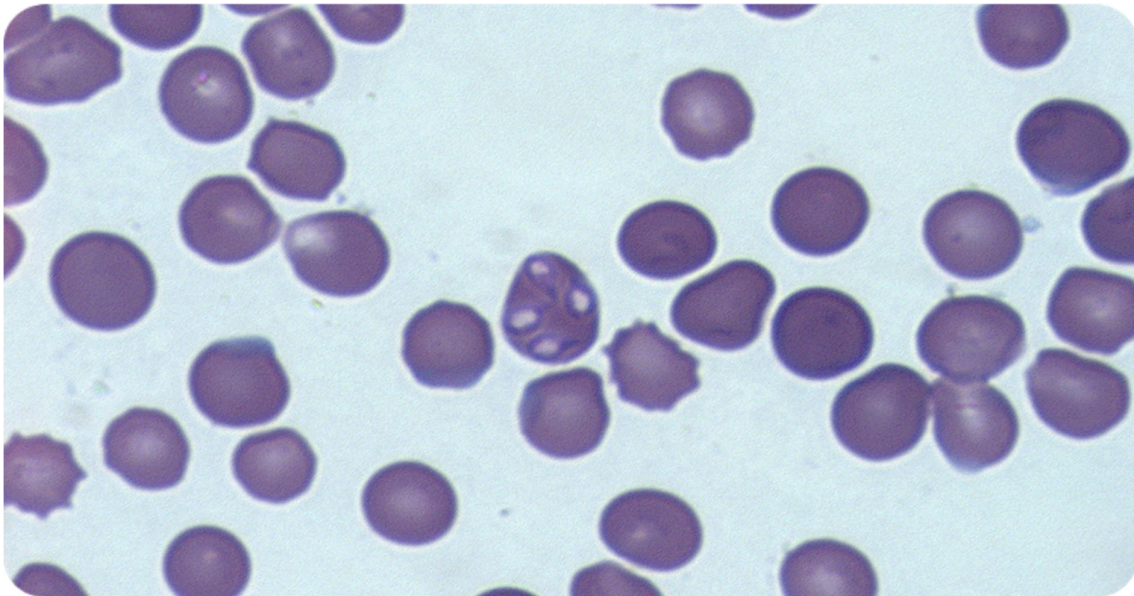


TABLE OF CONTENTS

INTRODUCTION	3
TURN-AROUND-TIMES, SAMPLE DEADLINES AND RELEASE OF RESULTS	5
RESEARCH SUPPORT	7
SAMPLE COLLECTION AND HANDLING	9
PROFILES AND TESTS.....	13

INTRODUCTION

The Onderstepoort Veterinary Clinical Pathology Laboratory is situated within the Department of Companion Animal Clinical Studies on floor 3 of the Onderstepoort Veterinary Academic Hospital (OVAH) at the Faculty of Veterinary Science.

The lab offers haematology, clinical chemistry (including hormones and blood-gas/acid-base analysis), haemostasis, cytology and urinalysis testing for domestic species as well as for exotic/wildlife species when possible. The lab is staffed by 3 specialist clinical pathologists, 1 clinical pathology resident, 4 veterinary laboratory technologists and 2 support staff members.



Our services are open to clinicians from the Onderstepoort Veterinary Academic Hospital and private veterinary practitioners in southern Africa. We also process samples from UP-based research projects, as well as from other universities and biomedical institutions. In addition, the laboratory performs tests on samples sent from other veterinary clinical pathology laboratories in South Africa.

CONTACT DETAILS

Reception: (+27) 12 529 8199

Delivery address for samples:

Room 3-11, Veterinary Academic Hospital

Faculty of Veterinary Science, UP,

Old Soutpan Rd

Onderstepoort

0110

Please ensure samples are delivered within working hours (weekdays 8:00-16:30)

Staff contact details for enquiries:

- Prof Emma Hooijberg, Clinical pathologist and Section Head: emma.hooijberg@up.ac.za
- Dr Yolandi Rautenbach, Clinical pathologist and Research-related enquiries: yolandi.rautenbach@up.ac.za
- Mrs Carien Muller, Control technologist: carien.muller@up.ac.za

For more details please see our website:

<https://www.up.ac.za/companion-animal-clinical-studies/article/2851096/clinical-pathology>

TURN-AROUND-TIMES, SAMPLE DEADLINES AND RELEASE OF RESULTS

TURN-AROUND TIMES

We perform maintenance and quality control procedures daily from 8:00 to 9:00 and start sample analysis after 9:00. The turn-around times apply once the sample has been received by the laboratory, before the cut-off time of 15:00.

Haematology

- Complete Blood Count – 6 hours
- Coombs' test – 3 hours
- Blood typing – 3 hours
- Crossmatching – 4 hours
- Emergency cases – 2 hours

Chemistry

- General clinical chemistry – 6 hours
- Emergency general clinical chemistry – 2 hours
- Electrophoresis – Fridays only
- Emergency electrophoresis as agreed with on-duty Clinical Pathologists – same day if submitted before 12:00, otherwise next day

Cytology

- General cytology – 24 hours
- CSF – 2 hours
- Emergency cases as agreed with on-duty Clinical Pathologists – 2 hours
- Full urinalysis – 2 hours

Hormones (incl. phenobarb and Vit B12)

- General endocrine samples – batched and run on Mondays, Wednesdays and Fridays – 6 hours
- Emergency cases as agreed with on-duty Clinical Pathologists – 4 hours (Tues/ Thurs)

Haemostasis (please notify lab of sample beforehand)

- PT, aPTT, Fib, D-dimers – 5 hours
- Emergency cases – 2 hours

Emergency cases

For a sample to be handled as an emergency, the laboratory must be notified. Please call ahead or write a note to accompany the sample stating that it is an emergency, so that we can prioritize it.

SAMPLE DEADLINE TIMES

Routine laboratory opening times: **weekdays 8:00-16:30**

SAMPLE SUBMISSION DEADLINE: **15:00**

All attempts will be made to process these samples by 16:30

Samples submitted after 15:00 will not be reported on the same day. Results may only be available after 10:00 the following working day.

ONLY EMERGENCY CASES WILL BE FULLY PROCESSED AFTER 15:00.

This is however subject to the veterinarian discussing the case with the on-duty clinical pathologist.

RESEARCH SUPPORT

1. Please contact Dr Yolandi Rautenbach (yolandi.rautenbach@up.ac.za) with queries about clinical pathology testing for research projects. We only provide the tests listed at the end of this document.
2. We will draw up a quote, which needs to be officially accepted by the researcher before any necessary reagents are ordered in.
3. In terms of the Animal Disease Act (35 of 1984), a Section 20 permit must accompany any biological material to be used for research purposes. It is the legal responsibility of the researcher to determine whether a Section 20 permit is required, and to obtain one before acquiring transporting any research samples. No research testing will be run in the clinical pathology lab without a Section 20 permit, if relevant. We can supply researchers with details for filing out the Facilities (Part 5) section of the application form. Please see <https://www.daff.gov.za/daffweb3/Branches/Agricultural-Production-Health-Food-Safety/Animal-Health/Epidemiology/researchapproval>.
4. The final date of testing must be confirmed by the Control Technologist, Mrs Carien Muller. The researcher will be asked to sign a sample submission form confirming the number of samples and analyses to be run.
5. Payment:
 - Costs are based on the quote.
 - Details for invoicing must be submitted to Dr Yolandi Rautenbach and Mrs Carien Muller 30 days prior to testing.
 - An invoice for the costs of tests performed will be tendered in the first half of the calendar month following the month in which analysis is performed. Invoices cannot be issued earlier than

this. Payment is to be made promptly upon receipt of such account and in any case not less than 30 days after the account is rendered.

- Any other arrangement must be cleared with Prof Emma Hooijberg (emma.hooijberg@up.ac.za), and should not contravene any regulations issued by the University of Pretoria in regard to debtors.

SAMPLE COLLECTION AND HANDLING

- Samples from larger animals should be collected directly into Vacutainer tubes
- Samples from smaller animals may be collected into a syringe. After blood is collected into a syringe, the needle should be removed, and the blood gently pushed into an open tube containing the appropriate anticoagulant. All tubes (including serum tubes with a clot activator) should be gently inverted several times to mix the blood with the anticoagulant or clot activator
- Sodium citrate (blue top) tubes must be filled to the line on the tube; other tubes should be at least 30% full
- If there will be a delay of more than an hour between sample collection and the arrival of the sample in the lab: EDTA whole blood samples for hematology should be placed in the fridge and a blood smear made from fresh blood; plasma or serum for chemistry, coagulation and endocrine testing should generally be prepared as follows:
 - Serum tubes are left to clot for 20-30 min, then centrifuged. Anti-coagulated blood (heparin, citrate, EDTA) can be spun immediately.
 - Remove the serum or plasma and place into a plain tube. Label with the patient name and material type (serum or EDTA/ heparin/ citrated plasma)
 - Place the sample into the fridge (chemistry, hormones) or freezer (coagulation assays, ACTH).
 - Avoid haemolysis by drawing blood cleanly and quickly, and aliquoting off serum or plasma. Do not freeze whole blood, unseparated serum or unseparated plasma.
 - Avoid lipaemia by starving patients before blood collection, where possible.

- Please identify all samples appropriately. Sample tubes should be labelled with the patient name and surname or patient ID sticker. Slides should be labelled with the patient name and localisation (e.g. liver, skin). Tubes containing various types of body fluids should be labelled as such (e.g. synovial fluid, CSF).
- The information on the sample should match the information on the request form.
- The submitted material must be appropriate for the tests requested (see later).
- Please label slides with pencil only, as pen/ marker washes off in the fixative.

HAEMATOLOGY

The standard tube for haematology is EDTA (purple top). Once blood has been collected, the tube should be inverted several times to mix the blood with the anticoagulant. EDTA whole blood can be stored in the fridge but must never be frozen. If the blood will take more than an hour to get to the lab, please also make a blood smear from the fresh sample and submit with the EDTA tube.

Heparin whole blood (green top Vacutainer; orange top pediatric tube) is used for haematology instead of EDTA blood in some exotic species.

HAEMOSTASIS

Coagulation assays are performed on citrated plasma (blue top). Blood should be collected directly into the Vacutainer tube where possible, after drawing off an initial 1-2 mL of blood into a serum discard tube. This is to ensure that no tissue factor (released from damaged endothelial cells during venipuncture) enters the citrated blood sample. The tube must be filled to the fill line marked on the

tube to ensure the correct ratio of citrate to blood (1:9). The tube must be centrifuged and the plasma separated as soon as possible after collection. The citrated plasma should be placed into a clearly labelled plain tube. For samples that are to be transported to the lab, it is recommended to freeze the plasma and send the sample on ice.

CLINICAL CHEMISTRY AND HORMONES

Serum is the preferred sample material, but we will accept heparin plasma. If there will be a delay before testing, serum/ plasma must be aliquoted off, as explained above. Samples can be kept in the fridge for analysis within 24 hrs, but should be frozen if analysis will be delayed beyond 24 hrs.

Exceptions:

ACTH: Collect into an EDTA tube. If the sample will reach the lab within 4 hrs, simply keep the sample cool in a fridge or cooler box. If analysis will be delayed by > 4hrs, then centrifuge the sample, aliquot off the plasma, place the plasma into a plain tube and freeze.

Transport on ice. This sample must reach the lab within 24 hrs.

Ammonia: Collect into EDTA and bring to the lab for immediate analysis. If sample analysis will be delayed at all, then centrifuge the tube, aliquot off the plasma, place into a plain tube, freeze immediately and transport frozen. Please contact the laboratory before requesting an ammonia assay.

CYTOLOGY

Fluid samples: Must be collected into an EDTA tube. The samples must reach the laboratory within 8 hours (nucleated cells degenerate). Keep the samples cool after collection (fridge or cool box). It is also recommended to make 2 direct smears of the fluid straight after collection, if there will be a

delay between sampling and analysis. CSF must be examined within 30 minutes of collection.

Fine needle aspirates: Label slides, place in a safe container and send to the lab unstained. We routinely stain all slides with a Wright-Giemsa stain. Do not send samples for cytology and samples in formalin in the same package.

PROFILES AND TESTS

	TEST CODE	SAMPLE	TURN-AROUND-TIME	COMMENT	PRICE (ZAR EXCL VAT)
HAEMATOLOGY					
Avian Complete Blood Count	AVIAN CBC	EDTA or Heparin, Smear	6 hrs		222.96
Blood Smear Examination	BLSM	EDTA, Smear	6 hrs	Please submit results from machine blood count if possible, for optimal interpretation	291.72
Blood Typing	BLD TYP	EDTA	3 hrs		585.75
Blood Smear Differential Exotics	BL DIFF EX	Smear	6 hrs		111.89
Buffy Coat Examination	BUFFY	EDTA	6 hrs		132.13
Complete Blood Count	CBC	EDTA, Smear	6 hrs		227.34
Coombs' Test (Canine)	COOMBS	EDTA	3 hrs	Dogs only	426.00
In-Saline Agglutination	ISA	EDTA	6 hrs		57.23
Machine Blood Count	MBC	EDTA	6 hrs	No differential count	119.49
Packed Cell Volume	PCV	EDTA	6 hrs		75.81
PCV & TPP	PCV/TP	EDTA, Heparin	6 hrs		82.84
Platelet Count	PLT	EDTA, Na-Citrate	6 hrs		119.49
Reptile Complete Blood Count	REPTILE CBC	EDTA, Heparin	6 hrs		222.96
Reticulocytes	RET	EDTA	6 hrs		75.74
Wright-Giemsa Stain	WG	Smear	6 hrs		75.74
Cross Match	COMPAT 1, 2, 3, 4, 5	EDTA, Serum	4 hrs	EDTA and serum from recipient and donor(s)	273.83 for 1 st donor 63.59 per additional donor

CLINICAL CHEMISTRY					
Alanine Aminotransferase	ALT	Serum, Heparin	6 hrs		85.80
Albumin	ALB	Serum, Heparin	6 hrs		78.94
Alkaline Phosphatase	ALP	Serum, Heparin	6 hrs		85.80
Ammonia	AMM	EDTA	2 hr	Inform lab before drawing sample, measure immediately	235.62
Ammonium Tolerance	AMM TOL	EDTA	2 hr		471.25
Amylase	AMS	Serum, Heparin	6 hrs		135.48
Aspartate Aminotransferase	AST	Serum, Heparin	6 hrs		85.80
B-Hydroxy Butyrate	B-HB	Serum	Research only – please contact lab		
Bile Acid - Pre & Post Sample	BA PROF	Serum x2	6 hrs		496.16
Bile Acid Post Sample	BA POST	Serum	6 hrs		248.08
Bile Acid Single/Pre Sample	BA SINGLE	Serum	6 hrs		248.08
Calcium	CA	Serum, Heparin	6 hrs		80.45
Chloride	CL	Serum, Heparin	6 hrs		78.94
Cholesterol	CHOL	Serum, Heparin	6 hrs		87.43
C-Reactive Protein (Canine)	CRP	Serum	6 hrs	Dogs only	298.20
Creatine Kinase	CK	Serum, Heparin	6 hrs		87.43
Creatinine	CREAT	Serum, Heparin	6 hrs		78.94
Elective Surgery Profile (Equine)	PRE-ANAES EQ	Serum, Heparin	6 hrs	TSP, ALB, GLOB, CREAT	241.35
Equine Chemistry Panel	CHEM PANEL EQ	Serum, Heparin	6 hrs	TSP, ALB, GLOB, UN, CREAT, SIP, AST, CK, GLU, GGT, BILT, CA	1108.04
Equine Colic Profile	COLIC PROF	Serum, Heparin	6 hrs	TSP, ALB, GLOB, CREAT, CL, VBG	660.96
Gamma-Glutamyl Transferase	GGT	Serum, Heparin	6 hrs		87.43

General Medical Profile (Avian)	GEN MED PROF AVIAN	Serum, Heparin	6 hrs	BA SINGLE, URIC, AMS, CHOL, CK, VBG	1026.06
General Medical Profile (Primate)	GEN MED PROF PRIM	Serum, Heparin	6 hrs	TSP, ALB, GLOB, UN, CREAT, GGT, AMS, BA SINGLE, VBG	1144.54
General Medical Profile (Reptile)	GEN MED PROF REP	Serum, Heparin	6 hrs	URIC, SIP, CA	276.77
General Medical Profile (Small Animal)	GEN MED PROF SA	Serum, Heparin	6 hrs	TSP, ALB, GLOB, UN, CREAT, SIP, ALT, ALP, CHOL, GLU, NA, K, CL, CA, CA-I, MG	1297.22
Globulin	GLOB		6 hrs	Calculated from TSP and ALB	0.00
Glucose	GLU	Serum, Heparin	6 hrs		82.58
Glutamate Dehydrogenase	GLDH	Serum, Heparin	6 hrs		130.52
Hepatic Profile (Primate)	HEP PROF PRIM	Serum, Heparin	6 hrs	TSP, ALB, GLOB, GGT, BA SINGLE	496.41
Hepatic Profile (Small Animal)	HEP PROF SA	Serum, Heparin	6 hrs	TSP, ALB, GLOB, ALT, ALP, BA PROF	831.92
Ionised Calcium	CA-I	Serum, Heparin	1 hr		168.13
Iron	IRON	Serum	6 hrs		138.85
Haptoglobin	HP	Serum	Research only – please contact lab		
Lactate	LACT	Serum, Heparin	1 hr		158.88
Lactate Dehydrogenase	LDH	Serum, Heparin	6 hrs		156.54
Lipase DGGR	LIP	Serum, Heparin	6 hrs		138.85
Magnesium	MG	Serum, Heparin	6 hrs		83.31
Minor Medical Profile (Avian)	MIN MED PROF AVIAN	Serum, Heparin	6 hrs	BA SINGLE, URIC	363.95
Minor Medical Profile (Small Animal)	MIN MED PROF SA	Serum, Heparin	6 hrs	TSP, ALB, GLOB, UN, CREAT, ALT, ALP, NA, K	645.27
Non-esterified Fatty Acids	NEFA	Serum	Research only – please contact lab		

Peritoneal Fluid Bilirubin	PERITON FL BILI	Fluid	6 hrs		121.60
Peritoneal Fluid Creatinine	PERITON FL CREAT	Fluid	6 hrs		121.60
Peritoneal Fluid Urea	PERITON FL UN	Fluid	6 hrs		121.60
Phenobarbitone	PHENOBARB	Serum	Mon/ Wed/ Fri		268.44
Pleural Fluid Cholesterol	PLEURAL FL CHOL	Fluid	6 hrs		121.60
Pleural Fluid Triglyceride	PLEURAL FL TRIG	Fluid	6 hrs		124.54
Potassium	K	Serum, Heparin	6 hrs		78.94
Pre-Anaesthetic Profile (Small Animal)	PRE-ANAES SA	Serum, Heparin	6 hrs	ALB, CREAT	160.90
Renal Profile (Primate)	RENAL PROF PRIM	Serum, Heparin	6 hrs	UN, CREAT, VBG	512.65
Renal Profile (Small Animal)	RENAL PROF SA	Serum, Heparin	6 hrs	UN, CREAT, SIP, ALB, NA, K, CL CA	689.00
Serum Amyloid A	SAA	Serum	6 hrs	Horses, domestic cats only	479.25
Serum Inorganic Phosphate	SIP	Serum, Heparin	6 hrs		78.94
Serum Prot Elec Exotics	SPE EX	Serum	Friday only		266.15
Serum Protein Electrophoresis	SPE	Serum	Friday only		509.12
Sodium	NA	Serum, Heparin	6 hrs		78.94
Total Bilirubin	BILT	Serum, Heparin	6 hrs		80.51
Total Serum Protein	TSP	Serum, Heparin	6 hrs		78.94
Triglyceride	TRIG	Serum, Heparin	6 hrs		92.57
Urea	UN	Serum, Heparin	6 hrs		78.94
Uric Acid	URIC	Serum, Heparin	6 hrs		115.88
CYTOLOGY					
Bone Marrow Aspirate Examination	BONE MARROW ASP	EDTA, Smears	24 hrs	Please contact lab to discuss collection methods. Please submit concurrent	563.99
Bone Marrow Aspirate – 2nd Site	BONE MARROW ASP 2	EDTA, Smears	24 hrs		563.99

				CBC results/ blood smear.	
Bronchoalveolar Lavage	BAL	Fluid, Smears	24 hrs		573.71
CSF Analysis	CSF	CSF	2 hrs		573.71
Cytology Site 1	CYTO 1	Smears	24 hrs	Per site, any number of slides	301.52
Cytology Site 2-5	CYTO 2, 3, 4, 5	Smears	24 hrs	Per site, any number of slides	301.52
Cytology stains	STAIN	Smears	6 hrs	E.g ALP substrate stain	48.62
Miscellaneous Fluid Analysis	MISC FLU	EDTA, Serum, Smears	6 hrs	E.g. seroma, cyst	573.71
Pericardial Fluid Analysis	PERICARD FL	EDTA, Serum, Smears	6 hrs		573.71
Peritoneal Fluid Analysis	PERITONEAL FL	EDTA, Serum, Smears	6 hrs		573.71
Pleural Fluid Analysis	PLEURAL FL	EDTA, Serum, Smears	6 hrs		573.71
Synovial Fluid Analysis	SYNOVIAL FL	EDTA, Serum, Smears	6 hrs		573.71
Synovial Fluid Analysis Site 2-4	SYNOVIAL FL 2,3, 4, 5	EDTA, Serum, Smears	6 hrs		573.71
Trans-Tracheal Aspirate	TTA	Fluid, Smears	6 hrs		573.71
HAEMOSTASIS					
Antithrombin	ANT	Na-Citrate	5 hrs	Please inform lab beforehand	173.83
D-Dimer	DDIM	Na-Citrate	5 hrs	Full coagulation profile: TEG, PT, PTT, ANT, DDIM, FIB	260.75
Fibrinogen	FIB	Na-Citrate	5 hrs		165.14
Full Coagulation Profile	COAG PROF	Na-Citrate	5 hrs		1340.10
Mini Coagulation Profile	MIN COAG PROF	Na-Citrate	5 hrs		846.25
Partial Thromboplastin Time	PTT	Na-Citrate	5 hrs	Minor coagulation profile: TEG, PT, DDIM	154.87
Prothrombin Time	PT	Na-Citrate	5 hrs	PT/PTT Combo: PT, PTT	154.87
PT/PTT Combo	PT PTT COMBO	Na-Citrate	5 hrs		430.63

HORMONES					
ACTH Endogenous	ACTH Endog	EDTA plasma (cooled)	Mon/ Wed/ Fri		546.14
ACTH Stimulation 2 Samples	ACTH STIM	Serum x2	Mon/ Wed/ Fri		471.25
Cobalamin (Vit B12)	COBAL	Serum	Mon/ Wed/ Fri		237.77
Cortisol Baseline/Single	CORT BASE	Serum	Mon/ Wed/ Fri		235.62
Cortisol Post 1	CORT POST 1	Serum	Mon/ Wed/ Fri		231.22
Critical Care Prognostication Profile	PROG PROFILE	Serum	Mon/ Wed/ Fri	CORT BASE, TSH, T4-SA	800.14
Dexamethasone Suppression - 3 samples	DEXA SUPP 3	Serum x3	Mon/ Wed/ Fri		706.87
Insulin	INS	Serum	Mon/Wed/Fri	Horses only	546.14
Progesterone	PROGEST	Serum	Mon/ Wed/ Fri		236.68
Thyroid Stimulating Hormone	TSH	Serum	Mon/ Wed/ Fri	Dogs and cats only	335.82
Total T4 - Small Animals	T4-SA	Serum	Mon/ Wed/ Fri		237.41
Trypsin-Like Immunoassay	TLI	Serum	Mon/ Wed/ Fri	Dogs only	515.43
URINE					
Urine Creatinine	UR CREAT	Urine	6 hrs		119.90
Urine Protein	UR PROTEIN	Urine	6 hrs		119.90
Urine Chloride	UR CL	Urine	6 hrs		122.19
Urine Potassium	UR K	Urine	6 hrs		122.19
Urine Sodium	UR NA	Urine	6 hrs		122.19
Urine Urea	UR UN	Urine	6 hrs		122.19
Complete Urinalysis	COMPLETE UA	Urine	2 hrs		148.64
Urinalysis- No Sediment	UA NO SED	Urine	2 hrs		61.11
Urinalysis - Microscopic	UR MICROSCOPI C	Urine	2 hrs		85.06

Urine Protein/Creatinine Ratio	UPC	Urine	6 hrs		239.89
Urine Cortisol/Creatinine Ratio	UCC	Urine	Mon/ Wed/ Fri		361.85
Urine Na/K	UR NA/K	Urine	6 hrs		244.46
Urine Magnesium	UR MG	Urine	6 hrs		122.19
Urine GGT/Creatinine Ratio	UGC	Urine	6 hrs		254.56
Urine Calcium	UR CA	Urine	6 hrs		122.19

Onderstepoort Clinical Pathology Laboratory

Sample Submission Form

CP number:

Lab number:

Onderstepoort Veterinary Academic Hospital
 Old Soutpan Road (M35)
 Pretoria
 Tel: +27 12 529 8199
 Email: emma.hooijberg@up.ac.za; carien.muller@up.ac.za

Referring Veterinarian
Practice name
Referring vet
Email
Send results to
Tel

Patient Details					
Name					
Owner Name					
Species					
Breed					
Age/Birth date					
Sex	M	F	Neutered	Y	N

Clinical presentation and pertinent history:			
Presumptive diagnosis:	Status:	Emergency	Routine

Please label all slides and sample tubes clearly with the patient name and date and time of collection

✓	Haematology	Sample		
	Avian CBC	EDTA/heparin	ALP	Serum/heparin
	Blood smear examination	EDTA/smear	Ammonia*	EDTA
	Blood typing (canine, feline)	EDTA	Ammonium tolerance*	EDTA
	Blood smear differential (exotics)	Smear	Amylase	Serum/heparin
	Buffy coat examination	EDTA	AST	Serum/heparin
	Chemo CBC	EDTA	Bile acid (pre- and post-prandial)	Serum (x2)
	CBC	EDTA	Bile acid (single)	Serum
	Coomb's test (canine)	EDTA	Calcium	Serum/heparin
	Crossmatch	EDTA & serum	Chloride	Serum/heparin
	ISA test	EDTA	Cholesterol	Serum/heparin
	Machine blood count	EDTA	CRP (canine)	Serum
	PCV	EDTA/heparin	CK	Serum/heparin
	PCV and TP (refractometer)	EDTA/heparin	Creatinine	Serum/heparin
	Platelet count	EDTA/citrate	Equine elective surgery profile	Serum/heparin
	Reptile CBC	EDTA/heparin	Equine chemistry panel	Serum/heparin
	Reticulocytes	EDTA	Equine colic profile	Serum/heparin
	Wright-Giemsa stain	Smear	Fluid bilirubin (peritoneal)	EDTA (fluid)
✓	Clinical chemistry	Sample	Fluid cholesterol (pleural)	EDTA (fluid)
	ALT	Serum/heparin	Fluid creatinine (peritoneal)	EDTA (fluid)
	Albumin	Serum	Fluid triglyceride (pleural)	EDTA (fluid)
			Fluid urea (peritoneal)	EDTA (fluid)

Onderstepoort Clinical Pathology Laboratory

Cytology Request Form

Onderstepoort Veterinary Academic Hospital
 Old Soutpan Road (M35)
 Pretoria
 Tel: +27 12 529 8199
 Email: opclinpathlab@up.ac.za

Referring Veterinarian
Practice name
Referring vet
Email
Send results to
Tel

Patient Details			
Name			
Owner Name			
Species			
Breed			
Age/Birth date			
Sex	M	F	Neutered Y N

Clinical presentation and pertinent history:			
Presumptive diagnosis:	Status:	Emergency	Routine

Please label all slides and sample tubes clearly with the patient name, site of collection/sample type and date of collection

Cytology Request			
	FNA	Site(s):	
	Cytobrush	Site(s):	
	Impression smear	Site(s):	
	Bone marrow		
	Blood smear	Suspected parasites?	Y N
	CSF	Collection site:	Cisternal Lumbar
	BAL		
	TTA/TTW		
	Synovial fluid	Joint(s):	
	Effusion fluid	Peritoneal	Pleural Pericardial
	Miscellaneous fluid	Site(s):	
	Urine sediment	Collection method:	
	Immunocytochemistry	Marker(s):	

For office use only			
CP number:	Lab number:		
Cytology <input type="checkbox"/>	Bone Marrow <input type="checkbox"/>	Blood smear <input type="checkbox"/>	
Number of slides:	Stained?	Y	N
Date received:			

	GGT	Serum/heparin	✓	Haemostasis*	Sample
	Avian general medical profile	Heparin		Antithrombin III*	Citrate
	Primate general medical profile	Serum/heparin		D-dimer*	Citrate
	Reptile general medical profile	Serum/heparin		Fibrinogen*	Citrate
	Small animal general medical profile	Serum/heparin		Full coagulation profile*	Citrate
	Globulin	From TP & Alb		Minor coagulation profile*	Citrate
	Glucose	Serum/heparin		aPTT*	Citrate
	GLDH	Serum/heparin		PT*	Citrate
	Primate hepatic profile	Serum/heparin		PT and aPTT*	Citrate
	Small animal hepatic profile	Serum/heparin			
	Ionised calcium*	Serum/heparin	✓	Endocrinology	Sample
	Iron	Serum		Endogenous ACTH	EDTA
	LDH	Serum/heparin		ACTH stimulation test (2 samples)	Serum (x2)
	Lipase DGGR	Serum/heparin		Cobalamin (vitamin B12)	Serum
	Magnesium	Serum/heparin		Cortisol (baseline/single)	Serum
	Avian minor medical profile	Heparin		Low dose dexamethasone supp test	Serum (x3)
	Small animal minor medical profile	Serum/heparin		Progesterone	Serum
	Phenobarbitone	Serum		TSH (canine, feline)	Serum
	Phosphate (inorganic)	Serum/heparin		TT4	Serum
	Potassium	Serum/heparin		TLI (canine)	Serum
	Small animal pre-anaesthetic profile	Serum/heparin	✓	Urinalysis	Sample
	Primate renal profile	Serum/heparin		Complete urinalysis	Urine
	Small animal renal profile	Serum/heparin		Urine calcium*	Urine
	Serum amyloid A (equine, other)	Serum		Urine chloride*	Urine
	Serum protein electrophoresis	Serum		Urine cortisol: creatinine ratio	Urine
	Exotics protein electrophoresis	Serum/heparin		Urine creatinine*	Urine
	Sodium	Serum/heparin		Urine GGT: creatinine ratio	Urine
	Total bilirubin	Serum/heparin		Urine magnesium*	Urine
	Total serum protein	Serum/heparin		Urine potassium*	Urine
	Triglyceride	Serum/heparin		Urine protein: creatinine ratio	Urine
	Urea	Serum/heparin		Urine sodium*	Urine
	Uric acid	Serum/heparin		Urinalysis – no sediment	Urine

- Please contact the laboratory before collection and submission of samples for the marked (*) tests.
- For submission of cytology, please refer to the cytology request form.
- Samples for haematology, clinical chemistry, haemostasis, cytology and urinalysis received before 15:00 will be resultd on the same day. Samples received after this time will be resultd on the next working day.
- Routine samples submitted for endocrinology (including phenobarbitone) will only be analysed on Mondays, Wednesdays and Fridays. Samples received before 12pm will be resultd the same day. Samples received after this time will be resultd on the next working day.
- Emergency samples will be processed according to the appropriate turnaround time – please refer to the laboratory manual for these times.
- All samples will be processed as routine, unless stated otherwise.