



Directory of Services and Prices Issue 12 2023

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Working with you to reach the best diagnosis.

At the Royal Veterinary College our vision is to provide leadership and excellence in veterinary science through innovative scholarship and pioneering clinical activity.

The outstanding facilities based at our Hawkshead campus in Hertfordshire are second-to-none providing a range of world-class diagnostic pathology services ensuring best practice and enabling you to provide better medicine and fast results to your clients.

These diagnostic services are supported by clinicians with a vast experience of routine and more complicated clinical cases, and importantly, who work directly with our specialist clinical teams across the college.

We offer a wide range of routine diagnostic services, as well as more specialised services in specific areas, including:

- Combined profiles
- Haematology
- Biochemistry
- Microbiology
- Cytology
- Histopathology
- Post-mortem examination
- Endocrinology
- Immunohistochemistry.



The RVC – your diagnostic laboratory

Like you our primary focus is animal welfare, which is why we are committed to providing you with a comprehensive diagnostic laboratory service for the patients in your care. Our team of specialist pathologists are among the best in the world, with over 50 years of experience and specialist knowledge within clinical and anatomical pathology.

Being part of the Royal Veterinary College ensures that we have access not only to our clinical and anatomical pathologists, but also to world-class expertise at other facilities on campus. This includes The Queen Mother Hospital for Animals (our small animal referral hospital) and our Equine Referral Hospital. The outstanding teams of clinicians in these facilities (many of whom are on the CPD circuit), as well as their supporting technicians, are always on hand to help.

All our reports are therefore accompanied by expert veterinary pathological advice, and pathologists are always available to discuss results or provide further advice should you need it. Recommendations are automatically included where appropriate.



Immunohistopathology and other specialisms are also being actively developed within the diagnostic services. These will provide greater opportunity to support future clinical research.

Our service can be tailored to your needs, enabling the creation of individual profiles for your use at any time, keeping costs to a minimum. We offer a **same day service for routine in-house tests on samples received before 1.30pm,** under normal working conditions (this includes haematology, biochemistry and cytology).

Our commitment to you:

- To ensure the high standard of our work with internal and external quality control and assessments
- To report your results as soon as they are available, by email.
- To liaise with other laboratories so as to provide a broad spectrum of tests
- To keep all records for reference and repeat reports if required at no extra cost.



Small animal combined profiles

COMPREHENSIVE COMBINED PROFILE ('QMH')

(EDTA, serum and fluoride oxalate)

Canine £117.00

Haematology Full Profile + total protein, albumin, globulin, glucose, calcium, phosphorus, urea, creatinine, ALT, ALP, CK, amylase, lipase, total bilirubin, cholesterol, Na, K, Cl, C-Reactive protein.

Feline £109.50

As above but add GGT, magnesium and SAA and subtract amylase, lipase and C-Reactive protein.

A reticulocyte count will automatically be performed on all blood samples from anaemic patients. The charge for this (£20.00) will be additional to the basic price. The values below which this will apply are: Hct < 30% Dog, Hct < 20% Cat.

GENERAL COMBINED PROFILE ('BAH')

(EDTA and serum)

Canine £87.00

Haematology Full Profile + total protein, albumin, globulin, urea, creatinine, calcium, phosphorus, ALT, ALP, total bilirubin, cholesterol, Na, K, Cl.

Feline £91.00

A reticulocyte count will automatically be performed on all blood samples from anaemic patients. The charge for this (£20.00) will be additional to the basic price. The values below which this will apply are:

Hct < 30% Dog, Hct < 20% Cat.

As above but add GGT and magnesium.



Large animal combined profiles

EQUINE COMPREHENSIVE COMBINED PROFILE

£128.50

Biochemistry (serum and fluride oxalate)

Total protein, albumin, globulin, glucose, urea, creatinine, calcium, phosphorus, AST, SDH, ALP, GGT, CK, total bilirubin, Na, K, Cl.

Haematology

(EDTA and citrate*)

RBC, Hb, Hct, MCV, MCH, MCHC, RDW, total and differential WBC count, platelet count and **Fibrinogen***

RUMINANT COMPREHENSIVE COMBINED PROFILE

£128.50

Biochemistry

(serum and fluride oxalate)

Total protein, albumin, globulin, glucose, calcium, phosphorus, urea, creatinine, AST, GLDH, GGT, CK, β-hydroxybutyrate, magnesium, Na, K, Cl.

Haematology (EDTA and citrate*)

RBC, Hb, Hct, MCV, MCH, MCHC, RDW, total and differential WBC count, platelet count and **Fibrinogen***



*Please Note:

Fibrinogen is performed on the citrate sample, but if this is not submitted, **deduct** £36.50 from the combined profile price.

Email us: diagnosticlabs@rvc.ac.uk





AVIAN COMBINED PROFILE

Biochemistry
(Heparin)
Total protein, glucose, calcium, uric acid, AST, GLDH, CK, bile acids, Na, K, Cl.

Haematology Full (anticoagulant – heparin) £90.00 Smear only £84.00

REPTILE COMBINED PROFILE

Biochemistry
(Heparin)
Total protein, albumin, globulin, glucose, calcium, phosphorus, uric acid, AST,
GLDH, CK, bile acids, Na, K, Cl.

Full (anticoagulant – heparin) £95.00

Smear only £89.00

SMALL MAMMALS COMBINED PROFILE

BiochemistryTotal protein, albumin, globulin, glucose, (serum and fluoride calcium, phosphorus, urea, creatinine,

oxalate) AST, GLDH, CK, total bilirubin,

triglycerides, cholesterol, Na, K, Cl.

Haematology Full (EDTA) £95.00

Please Note:

Haematology

- EDTA may be an acceptable anticoagulant in certain species of birds and reptiles but causes haemolysis in many. Therefore samples for haematology are preferred in heparin for non-mammalian species.
- The use of heparin as the sole anticoagulant is useful when only small amounts
 of blood are available for analysis. Both haematology and biochemistry can be
 performed using a single heparin tube.
- When only small amounts of plasma are submitted, biochemistry parameters will be prioritised.
- Some species will require some changes to these basic profiles. For instance, urea
 may be a useful parameter in some species of reptiles and amylase is essential in
 Varanus species.
- Fibrinogen, if desired, can be assessed using heparinised plasma.

Haematology

All samples in EDTA, unless otherwise stated

* FULL PROFILE	£34.50
For all mammals to include:	
Blood smear analysis including staining, manual 100 WBC differential and morphology descriptions (please include a fresh air-dried blood smear). Spun PCV and plasma comments. Automated haematology parameters including; WBC count, RBC count, HCT, HGB, MCH, MCHC, RDW, and PLT count. Reticulocyte counts and in-saline agglutination tests will automatically be added to the profile for anaemic patients (when the PCV < 30% for dogs, or < 20% for cats). The charge for this will be additional to the basic price.	£20.00
*For Exotic haematology samples (from birds, reptiles, amphibian	
Estimated WBC, Differential & PCV (Heparin) Smear only	£36.50 £30.50
BONE MARROW PROFILE	230.30
CBC, BM aspirate and core biopsy	£188.00
INDIVIDUAL PARAMETERS	
Reticulocyte count Bone Marrow aspirate/smear with or without CBC (No Core) Coombs Test Buffy coat smear	£20.00 £155.50 £78.50 £34.50
CLOTTING TESTS (Contact lab)	
Prothrombin Time (PT) (Citrate plasma) Activated Partial Thromboplastin Time (APTT) (Citrate plasma) TRANSFUSION CROSS MATCHING (Contact lab)	£21.00 £21.00
For one donor For each additional donor Blood typing screen (dog and cat)	£68.50 £36.50 £62.50



Biochemistry

COMPREHENSIVE PROFILE ('QMH')

(serum and fluoride oxalate)

Canine £82.50

> Total protein, albumin, globulin, glucose, calcium, phosphorus, urea, creatinine, ALT, ALP, CK, amylase, lipase, total bilirubin, cholesterol, Na, K, Cl, C-Reactive

protein.

Feline £75.00

> As above but add GGT, magnesium and SAA and subtract amylase, lipase & C-Reactive protein.

GENERAL PROFILE ('BAH')

(serum)

Canine £52.50

> Total protein, albumin, globulin, urea, creatinine, calcium, phosphorus, ALT, ALP, total bilirubin, cholesterol, Na, K, Cl.

Feline £56.50

As above but add GGT and magnesium.

CANINE + FELINE LIVER PROFILE

£33.00

(serum)

Total protein, albumin, globulin, urea, ALT, ALP, GGT, total bilirubin (and direct if high).

CANINE + FELINE KIDNEY PROFILE

£40.50

(serum)

Total protein, albumin, globulin, calcium, phosphorus, urea, creatinine, magnesium ALT, Na, K, Cl.

EQUINE COMPREHENSIVE PROFILE

£57.50

(serum and fluoride oxalate)

Total protein, albumin, globulin, glucose, calcium, phosphorus, urea, creatinine, AST, SDH, ALP, GGT, CK, total bilirubin, Na, K, Cl.



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EQUINE GENERAL PROFILE

£46.00

(serum)

Total protein, albumin, globulin, calcium, creatinine, AST, GGT, SDH, CK, total bilirubin.

RUMINANT COMPREHENSIVE PROFILE

£57.50

(serum and fluoride oxalate)

Total protein, albumin, globulin, glucose, calcium, phosphorus, urea, creatinine, AST, GLDH, GGT, CK, β-hydroxybutyrate, magnesium, Na, K, Cl.

CAMELID PROFILE

£70.50

(serum)

Total protein, albumin, globulin, calcium, phosphorus, urea, creatinine, AST, ALP, GGT, CK, SDH, total bilirubin, β-hydroxybutyrate, magnesium, Na, K, Cl.

*AVIAN PROFILE

£53.50

(heparin)

Total protein, glucose, calcium, uric acid, AST, GLDH, CK, bile acids, Na, K, Cl.

*REPTILE PROFILE

£58.50

(heparin)

Total protein, albumin, globulin, glucose, calcium, phosphorus, uric acid, AST, GLDH, CK, bile acids, Na, K, Cl.

*SMALL MAMMAL PROFILE

£60.50

(serum and fluoride oxalate)

Total protein, albumin, globulin, glucose, calcium, phosphorus, urea, creatinine, AST, GLDH, CK, total bilirubin, triglycerides, cholesterol, Na, K, Cl.

- * If small sample, contact laboratory with order of preference of test.
- * Extra tests, or substitution tests may be added.



Individual biochemical parameters (£12.50 each)

Alanine aminotransferase (ALT) Glucose

Albumin Glutamate dehydrogenase (GLDH)

Alkaline phosphatase (ALP) y glutamyl transferase (GGT) Lactate dehydrogenase (LDH) Amylase

Aspartate aminotransferase (AST) Lipase β-hydroxybutyrate Magnesium

Bilirubin (total)

Phosphorus – inorganic

C-Reactive protein (CRP) Protein – total

Calcium Serum amyloid A (SAA) Cholesterol Sorbitol dehydrogenase (SDH)*

Creatine kinase (CK) Triglyceride

Urea Creatinine Uric Acid Electrolytes (Na, K, Cl)

Special biochemistry

*Ammonia (EDTA)	£33.00	Protein electrophoresis:	
Bile acids (pre and post)	£71.50	Serum/plasma	£75.00
Bile acids pre only	£57.50	CSF/urine Serum	£75.00
Bile acids post only	£57.50	Amyloid A (equine)	£49.50
Digoxin	£58.50	Troponin I	£53.00
Fibrinogen	£36.50	TLI – canine	£109.00
Fructosamine	£27.50	TLI – feline	£112.50
Pancreatic lipase (PLI)	£124.50	Folate	£60.50
Phenobarbitone	£75.00	B12	£30.00
Potassium bromide	£92.50		

^{*}Stability of this analyte deteriorates 6-8hrs post sampling

^{*}Contact lab prior to sampling.

Urinalysis

Combined analysis		Protein (Bence-Jones)	£19.00
(dipstix, specific gravity		Protein (quantitative)	£12.50
& sediment examination)	£34.50	Protein: creatinine ratio	£25.00
Dipstix	£12.50	Cortisol: creatinine ratio	£91.50
Specific gravity	£12.50	GGT: creatinine ratio	£25.00
Sediment examination	£23.50	Fractional excretions:	
Calculus analysis (sent to	Hill's)	first electrolyte	£48.50
Handling charge	£37.00	each additional electrolyte	£27.50
(dogs & cats only)			
Calculus (not Hill's)	£119.00		

Endocrinology

**ACTH (endogenous)	£145.50	Progesterone	£84.00
ACTH Stimulation test	£88.00	Testosterone (serum)	£100.50
Cortisol	£44.00	Thyroxine (T4)	£43.00
DXM suppression test	£97.00	Tri-iodothyronine (T3)	£78.50
Free T4 (by dialysis)	£102.50	TSH (canine endogenous)	£65.00
Insulin (serum)	£99.00		
Insulin-like Growth Factor 1	£152.00		

^{**}Contact lab prior to sampling

Oestrone sulphate (serum) £86.00



Microbiology

Please submit fresh samples in sterile containers or transport medium as appropriate. Preliminary results may be available in 24-48 hours, blood and fungal cultures require 8-14 days.

GENERAL BACTERIOLOGY PLUS SENSITIVITIES

£64.00

(To include aerobic, anaerobic, microaerophillic selective and enrichment culture, taking into account the origin of the sample. Antibiotic sensitivities will be performed on isolates at the discretion of the laboratory.

Please state if you require particular sensitivity patterns performed).

BLOOD CULTURE	
One bottle Two bottles Three bottles	£81.50 £163.00 £244.50
Supply of blood culture bottle (each)	£20.00
FAECAL CULTURE	
Salmonella, Shigella, Yersinia, Campylobacter, E.coli (includes 0157)	£73.00
URINE CULTURE	£64.00
MICROSCOPY	£59.50
FUNGAL CULTURE, MICROSCOPY & IDENTIFICATION	£65.00
(For sensitivities contact laboratory)	
BACTERIOLOGY AND FUNGAL CULTURE	£69.50

^{*}If Mycobacteria suspected please highlight this on submission form





EO TOT AIRAOTTEO	£30.00
FAECES EXAMINATIONS	
i) Lungworm (Baermann)	£29.00
ii) Egg count (McMaster)	£24.50
iii) Giardia	£30.00
iv) Cryptosporidia	£32.00
v) Cyathostome larval ID	£35.50
Discounted Combinations of the above:	
vi) ii and iii	£42.00
vii) ii and iv	£46.00
viii) iii and iv	£50.00
ix) ii, iii and iv	£71.00
SPECIAL	
Parasite identification	£69.00
Egg count (Modified Stolls)	£32.00
Fluke Sedimentation	£33.00
Other	

FAECAL	
Chlamydia - DNA PCR (avian)	£79.00
Parvovirus - Direct viral Ag	£53.00

Serology

(Preferably serum, or clotted blood in plain tubes).

GENERAL	
AChR Ab (Acetyl Choline Receptor Antibody)	£200.50
2M Ab (for biopsies see under muscle biopsies & related assays)	£200.50
Antinuclear Antibody	£90.00
Neospora	£84.00
Toxoplasma	£32.00
Toxoplasma IgG IgM	£84.00

CANINE			
Adenovirus	£71.50	Leptospira serovars	£142.00
A. Vasorum (Lungworm) Coronavirus	£19.00 £71.50	Lyme Disease Lyme, Ehrlichia, Anaplasma,	£76.00
Distemper IgG IgM	£84.00	Heartworm	£47.00
Ehrlichia	£99.00	Parvovirus	£53.00
Heart Worm Ab	£103.00	Rabies (post vaccination)	£126.50
Heart Worm Ag	£75.00	Rheumatoid Factor	£74.50
Leishmania	£90.50	Sarcoptes/Scabies	£79.00

FELINE			
FeLV/FIV	£66.00	FIP	£69.50

RABBIT		
E. Cuniculi	£99.00	



Cytology

Please mail histology (formalin fixed tissue) and cytology samples in separate sealed containers. Formalin fumes damage cells.

Fluid samples should be submitted in EDTA with a smear, if appropriate.

A brief history, gross description and location of origin of material are required for interpretation.

A clinical pathologist's report will normally be emailed within 1 working day of receipt of samples.

£59.00
£25.00 £25.00 £25.00
£59.00 £51.00
£51.00
£59.00 £75.00 n)
£47.00 £37.00 £37.00

Histopathology – surgical biopsy



(Please submit tissue for histology in 10% formal saline or equivalent).

DIAGNOSTIC HISTOLOGY

Biopsy or necropsy tissues: Includes processing, special stains if required, and a full veterinary pathologist's report.

PLEASE SEND A FULL HISTORY AND DESCRIPTION WITH ALL SPECIMENS to assist the pathologist in providing an accurate diagnosis and possible prognosis.

Single tissue* Two tissues Three tissues Additional tissues from the same case Additional H&E slides from the same case Samples requiring extensive dissection (e.g. leg, head) *Tissue requiring multiple blocks or levels to be made, such as whole brain, eye or gastrointestinal tract, will be charged at the	£57.50 £73.50 £89.50 £16.00 each £9.00 each £102.00
three tissue rate. (This does not apply to small rodents etc).	
Professional Interpretation of referral slides Immunohistochemistry	£55.00
For the diagnosis of immune-mediated skin disease and typing of tumours: per antibody	£55.00

NON DIAGNOSTIC HISTOLOGY (Research etc)	
Haematoxylin and eosin slide production	£23.50
Includes processing to a standard cassette size wax block, cutting and staining. Larger blocks will be charged at twice list price.	
Process only (as above without cutting and staining)	£15.50
*Haematoxylin and eosin stain *Special stains (tinctorial) *Special stains (silver)	£9.00 £12.50 £17.50
Unstained sections (per coated slide)	£5.00

^{*}Includes cutting and staining only.

Pathology

POST- MORTEM EXAMINATIONS

Please note: We are not permitted to return bodies due to Clinical Waste Regulations. We can however, release them to properly licenced agents or arrange disposal and/or cremation depending on your client's wishes.

Charges are inclusive of a preliminary and final report; all histology (including special stains), bacteriology, and tests deemed necessary by the pathologist. Further tests including toxicology and services external to the Royal Veterinary College will be charged accordingly, subject to prior agreement with the referring veterinary surgeon.

A preliminary report will be issued within 3 working days following the post-mortem examination and then a subsequent final report within 4 working weeks.

Reports for legal cases will carry a surcharge (please see below*).

Large (200kg+)	£1320.00
CNS cases - additional charge	£400.00
Medium (75 – 200kg)	£830.00
CNS cases - additional charge	£400.00
Small (10 – 75kg)	£620.00
Small (up to 10kg)	£420.00
*Surcharge for legal cases	£490.00
(This includes all documentation, digital images & their storage)	

Please contact Diagnostic Laboratory Services diagnosticlabs@rvc.ac.uk before sending an animal for a post mortem examination.



Taking samples hints and tips

GENERAL INFORMATION

- Clearly label all tubes/slides.
- Complete an RVC request form proper completion allows for better data interpretation.
- Please be sure to indicate which tests/panels you want.
- Indicate if sample is infectious POTENTIAL ZOONOSIS or from non human primate.
- · Haemolysis affects all tests to varying degrees:

To prevent Haemolysis:

- a) take sample
- b) remove needle from syringe
- c) remove stopper from tube
- d) gently expel blood into tube. Mix gently if anticoagulant present.
- Ensure proper packaging
 - 1) Blood/urine should be in capped, leak proof containers
 - 2) Further enclose in durable outer container with enough packing material to absorb all contents, should breakage occur
 - Ensure NO CONTACT WITH FORMALIN (even fumes) with cytology smears or blood films – cell morphology is severely compromised
 - 4) Tissues in formal saline are in securely capped containers and in separate bags.
- Indicate if results are required ASAP.
- For best results, please DO NOT post samples by mail on Friday or Saturday.

CHEMISTRY

- a) Separate serum/plasma from cells if possible (integrity of results is greatly improved). Allow serum sample to clot for at least 30 mins if a centrifuge is unavailable. Let stand and remove what serum you can (some RBCs will be present) preferably within 2 hours of collection. Serum separator tubes need centrifuging.
- b) Glucose is preserved using a fluoride oxalate tube. Plasma separation is not required.

- c) If insufficient serum is received, we will either request more serum, or perform those tests deemed appropriate by the pathologist, if order of preference is not stated on the request form.
- d) Serum is preferred, especially for bile acid analysis. Plasma (heparin) is suitable for reptiles and most birds.

CYTOLOGY (AVOID CONTACT WITH FORMALIN)

a) Fluids

Submit in EDTA (prevents clotting if blood present)

- Make direct smears if sample is not to be received on collection day.
- Send unstained smears.
- CSF contact laboratory for sampling requirements.

b) Impression smears

- Make gentle imprints, blotting excess blood and scoring surface with a scalpel blade if exfoliation is difficult.
- Send unstained smears.

c) Aspirate smears

- Send unstained smears.
- Do not refrigerate smears. Tubes can be refrigerated if there is a delay in testing.

If possible, send 3-5 unstained slides (additional stains may be required for a diagnosis).

PT/APTT (PLEASE CONTACT LAB BEFORE SUBMITTING SAMPLES)

- Tubes (Sodium Citrate).
- Required volume stated on the tubes is critical.
- A non-haemolysed, non-lipemic sample is required - needle removal prior to expulsion of blood into tube is recommended. Mix gently.
- A "normal" species control may be required due to changing reagents - please confirm with lab.
- Bring sample to lab as soon as possible. If there
 has to be a delay, separate plasma and place
 sample on ice pack.



HAEMATOLOGY (CBC samples)

- Send 2 well made, unstained blood smears and the EDTA tube.
- Make the smears from the EDTA tube, not the needle hub (clot may be present, affecting platelet numbers).
- Avoid contact with Formalin (even the fumes) compromises cell morphology.
- Heparin or citrate samples should be used for most birds and reptiles.
- EDTA is NOT advised for most birds and reptiles.

Bone Marrow

 A current CBC (blood smear), smears of the aspirate and a core biopsy (for histology) are needed for the best interpretation.

URINALYSIS

- Collect (minimum) 3 ml of urine in a clear container.
- Note collection method on submission form (cysto, etc).
- A few drops of preservative may be added. If this is done, please label the tube and form clearly.



Crossmatch

Canine/Feline

Please notify lab of impending crossmatch.

- Please submit all samples at the same time, rather than as they are collected.
- Collect an EDTA tube from recipient and each donor.

Volume required (recipient)

EDTA tube: 1ml.

Volume required (donor)

EDTA tube: 1-2ml.

Blood grouping (dogs and cats)

Sample required: 1ml EDTA blood.

Notes:

Canine \rightarrow determination of DEA 1.1 \pm only Feline \rightarrow determination of Group A or B.



Email us: diagnosticlabs@rvc.ac.uk

Bone marrow aspirates/core

- 1. Sedate or anaesthetise animal. Use aseptic technique.
- 2. Inject lidocaine deep into site as close as possible to periosteal surface of bone.
- 3. Use a Jamshidi needle, following bone marrow collection technique. Aspirate sample.

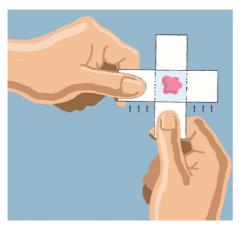


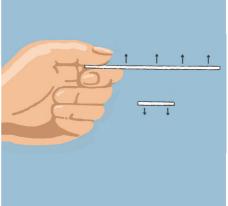






- 4. Expel sample into a flat container containing a drop of 10% EDTA (prevents clotting).
- 5. Place 2-3 spicules on a slide (shiny white particles usually approximatelly 1mm long).
- 6. Make smears using "slide over slide" technique NO pressure is required.





- 7. Air dry. Leave unstained.
- 8. Place any excess marrow into an EDTA tube.
- 9. Core sample: place in formalin.
- 10. A recent CBC is also required to assist interpretation of the aspirate.

Terms of business

USING OUR SERVICE

Request forms and prepaid address labels are available on request. (UK only).

For any other enquiries please contact:

Diagnostic Laboratory Services Secretary

Tel: 01707 666208

Email: diagnosticlabs@rvc.ac.uk

INVOICING

Our invoices are sent out at the end of each month, for settlement within 30 days of invoice date.

Further information for Diagnostic Laboratory Services can be found on our website: http://www.rvc.ac.uk/pathology-and-diagnostic-laboratories/diagnostic-laboratories



Whilst making every effort to keep prices consistent on an annual basis, we reserve the right to increase certain prices without prior notification.





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www.rvc.ac.uk/pathology-and-diagnostic-laboratories