

IDEXX Quality Starts with Quality Samples

The quality and accuracy of results are very important to everyone at IDEXX

IDEXX Tips for obtaining high quality samples:

Choose the correct sample and container

Read the collection guidelines in either this section of the Directory of Products and Services or in the Selected Test Protocol booklet (call 1300 44 33 99 if you do not have a copy) before taking a sample. Improper choice of a collection vial can adversely affect results.

Did You Know? Using a serum separator tube (SST) is an easy way to collect a good serum sample for chemistry panels. However, for certain specialised tests, such as many endocrinology and drug tests, the gel in SSTs can interfere with results.

Did You Know? Whole blood EDTA samples start to degrade as soon as the blood is outside of the animal.

To preserve cell morphology, include air-dried, unstained blood slides along with the purple top tube. Slides should also be included with samples submitted for fluid analysis for accurate cytologic interpretation. Blood smears made at the time of blood collection help avoid platelet clumping problems and allows more accurate platelet interpretation.

Did You Know? Including slides with your CBCs can aid in pathologist reviews of unusual cells, and with the identification of red blood cell parasites.

Use proper techniques

Filling syringes: When filling syringes, aim for a good free flowing stick from the largest accessible vein. Slow draws and difficult sticks can rupture red cells, adversely affecting CBC results and certain chemistries. The longer the blood stays in the syringe, the greater the risk of clumped platelets and clots that degrade test results.

Filling vacutainer tubes: If the blood clots in the syringe, do not force it into the vacutainer tubes. Forcing clotted blood into vacutainers will result in lysed red blood cells and cause inaccurate results. Always fill the tubes without additives first. This prevents carry-over of tube additives. For example, if you are filling an EDTA tube and a serum separator tube, always fill the SST first. Even a small amount of EDTA can interfere with many chemistry results. Fill purple top (EDTA) or blue top (citrate) tubes precisely. Overfilling and under-filling tubes causes the wrong ratio of additives. Excess EDTA in an under-filled tube will give inaccurate CBC results. Overfilling the EDTA tube may cause the sample to clot. To ensure the correct volume of blood, allow the vacuum of the tube to pull the blood out of the syringe without additional force.

Centrifuging: **Make sure samples are fully clotted before tubes are centrifuged.**

Note that some samples may take longer to clot than others.

Did You Know? In tests that require serum, it is important to collect and centrifuge the sample properly. If a tube is spun too soon after drawing the blood, you will send plasma to the laboratory and not serum.

If you have any questions regarding submission of specimens or if you require appropriate stores supplies please call us on 1300 44 33 99.

Samples clotted during blood draw may result in...

- Platelet clumps
- Falsely decreased cell counts (platelets, red blood cells and white blood cells)
- Haemolysis (when forcing blood into tube)

Excess anticoagulant (under-filled tube) may result in...

- Decreased RBC count and HCT due to dilution
- Altered cell morphology
- Inaccurate MCV, MCH, MCHC and HGB
- Falsely prolonged clotting times

EDTA contamination may cause...

- Falsely decreased calcium
- Falsely increased potassium
- Interference with many specialised tests

IDEXX Specimen Collection Guidelines

| Type of Testing | Specimen | Container | Contents | Protocol | Storage |
|--|---|--|--|---|--|
| Chemistry, Immunology, Endocrinology including progesterone and therapeutic drug-monitoring (digoxin, phenobarbital or theophylline) | Serum | RTT/R (red-topped tube, Vacutainer®) Any glass, red-topped tube. Plastic Vacutainer® with clot activator. | No additives (empty/sterile) | Let specimen clot 15–20 minutes, centrifuge at 2,500 rpm for 10–15 minutes, remove serum from clot and transfer to a red-topped tube or a clear screw-topped tube. | Refrigerate |
| Chemistry, Immunology, Endocrinology | Serum | SST (serum separator tube, yellow-topped Vacutainer®) | Gel to separate serum from clot (during centrifugation) and a clot activator | Let specimen clot for 15–20 minutes, centrifuge at 2,500 rpm for 10–15 minutes. DO NOT use SST for progesterone or therapeutic drug-monitoring (digoxin, phenobarbital or theophylline). | Refrigerate |
| Haematology | Whole blood | LTT/L (Lavender-topped tube) and air-dried unstained slides | Anticoagulant EDTA | Fill tube as much as vacuum will allow to obtain proper blood-to-anticoagulant ratio. Invert gently several times after filling. | Refrigerate; DO NOT freeze |
| Coagulation (PT, APTT and quantitative fibrinogen) | Citrated plasma | BTT (blue-topped tube) to collect, then transfer to plastic tube | Anticoagulant sodium citrate | Correct blood-to-anticoagulant ratio is very important. Fill tube as much as vacuum will allow to obtain proper ratio. Invert gently several times after filling. Centrifuge immediately at 1,500 rpm for 15 minutes. Separate plasma from cells. Transfer plasma to plastic tube and label as citrated plasma for submission. Freeze sample and ship on ice. | Keep frozen (refrigeration OK if received at laboratory within five hours) |
| Avian Blood and Miscellaneous Chemistries | | | | See Avian and Exotic specimen submission guidelines in this section. Check individual test listing. | |
| Urinalysis, Urine Culture | Urine (sterile collection highly preferred) | RTT/R or dry sterile container | No additives (empty/sterile) | After collection, cap container. DO NOT submit syringes. For urine cultures: DO NOT use culturette. | Refrigerate and prevent UV/sunlight exposure |
| Stone Analysis | Urolith | Dry sterile container | No additives (empty/sterile) | Do not place into formalin or other liquid; stones may dissolve. | Room temperature |
| Microbiology | | | | See Microbiology Specimen Submission Guidelines | |
| Cytology | | | | See Cytology Specimen Submission Guidelines | |
| Biopsy | | | | See Histopathology Specimen Submission Guidelines | |

If you have any questions regarding submission of specimens or require supplies call us on 1300 44 33 99

Cytology

ACCURATE RESULTS DEPEND ON QUALITY SPECIMENS. PLEASE FOLLOW THESE GUIDELINES:

- Perform sampling by fine-needle aspiration or non-aspiration biopsy, scrapings or imprints.
- Prepare slides in-clinic using either a “squash” preparation or blood-smear technique.
Call if you have questions about slide preparation.
- Stain at least one representative slide to ensure adequate cell density and preservation.
- Please **DO NOT** submit syringes with needles.

Patient history and clinical findings contribute to an accurate result.

On containers and slides, please write:

- Patient's name
- Site/Source

On the requisition form, include:

- Patient signalment (owner's name, patient's name, age, sex, species, breed, etc.)
- Reference to any previous laboratory results (CBC, biochemistry profile, prior cytology/histology or serology) be sure to include our laboratory reference numbers
- Gross lesion description
- Specific anatomic location (e.g., cutaneous, subcutaneous, deep tissue, intra-thoracic, intra-abdominal)
- Size, shape, consistency, symmetry, definition of borders
- Clinical history – duration of lesion, progression of lesion, treatment and response to therapy
- Radiographic and ultrasonographic findings

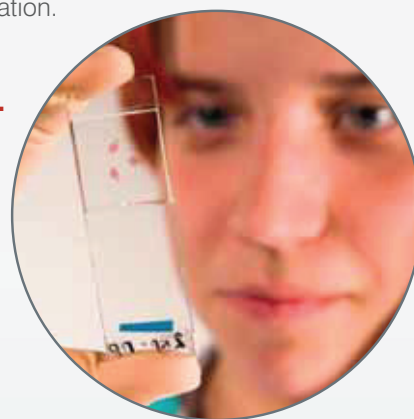
Did You Know? If you have specific questions you would like answered, you can put these on the requisition form.

When submitting aspirates and impressions:

- Submit one to three air-dried slides, preferably at least one unstained slide
- Store at room temperature and protect from temperature extremes
- Protect from moisture and insects
- **DO NOT** spray with hairspray or other fixatives
- **DO NOT** expose to formalin fumes
- **DO NOT** ship slides for cytology in the same bag as a formalin-containing biopsy jar.

When submitting fluids and washes:

- Enclose unaltered fluid in a Plain Tube (yellow-topped tube), EDTA Tube (purple-topped tube), along with air-dried slides.
- Prepare slides immediately to preserve cytomorphology (most fluids are stable for only a few hours at room temperature).
- Fluid in EDTA tube with slides is the recommended specimen for cytologic evaluation, especially of cellular or bloody specimens. If a culture is required, submit additional fluid in a sterile yellow top container.
- **DO NOT** submit fluids in a red topped tube (SST), in a syringe, or as cover-slipped and wet preparations.
- Submission of fluid in a SST (red topped tube) can interfere with accurate cytologic evaluation due to the presence of clotting activators.



IDEXX Specimen Collection Guidelines

Histopathology

ACCURATE RESULTS DEPEND ON QUALITY SPECIMENS. PLEASE FOLLOW THESE GUIDELINES:

Histopathology tiers and price guidelines

IDEXX operates a tiered histopathology pricing structure. All samples are manually assessed to provide you confidence in your results every time.

If you are unsure of how to code (or charge), your sample please call 1300 44 33 99 and ask to talk to the pathologist on duty to discuss your case. This will ensure a clear understanding of your needs, and will help you to select the correct samples for histopathological examination, as well as identify any need for samples for other testing (e.g. bacteriology, virology, serology, toxicology). Alternatively you may consult page 32 of this DOPS.

Turnaround Time

Most evaluations will be completed within 24-72 hours of receipt in our laboratory (unless otherwise indicated). Additional fixation or decalcification will take longer. We will notify you if an unusually long delay is anticipated.

Collection Technique

- Samples are collected for histological examination by standard surgical techniques or at postmortem examination.

Labelling Criteria

Please ensure all specimen jars are labelled with

- Patients name, date
- Type of specimen, (Site / Source)

Requisition Information

- A thorough clinical history and details of the physical examination are essential for the correct histological interpretation of tissue changes. Information required includes signalment (species, breed, age, sex), a description of the appearance and distribution of lesions, duration of the condition, biopsy sites or post mortem tissue, response to prior treatments, current treatment regimens and any other relevant information.
- You may include any questions to be answered on your requisition form.
- Please send radiographs of bone lesions when they are being submitted for histological examination (see histopathology – bone).

Fixation Guidelines

Tissue samples should be fixed in 10% buffered formalin.

Did You Know? The 10:10:10 Rule? For optimum fixation and sectioning use 10% formalin; 10:1 ratio; and a biopsy size 10mm cubed

- Place specimens in a wide necked container (approved for use with formalin), with the ratio of formalin to tissue > 10:1.
- Submit entire lesions and tumours with adjacent excise tissue.
- For rapid fixation of larger lesions and tumours, cut a section 0.5-1cm wide through the centre of the specimen. Make impression smears from the cut surface of tumours and submit for cytology in a separate bag.
- Open hollow organs, such as intestine, prior to placing them in fixative.
- Small fragile specimens (bone marrow, Tru-cut liver or kidney) can be wrapped in a gauze envelope so that they do not disintegrate during transport.
- High priority samples can be dispatched on the day of collection as they will fix on their way to the laboratory.
- Samples of lower priority can be fixed for 24 hours at clinic prior to dispatch to the laboratory.