

Sampling advice when submission to the laboratory may be delayed.

All samples and slides should be clearly marked with the patient information and sampling date.

Haematology

- If an in-house analyser such as the ProCyte or Lasercyte is available this should be used to analyse a haematology sample when a delay of >24 hours is anticipated
- Perform a manual PCV
- Prepare a fresh blood film as cell morphology will be preserved once the slide has dried.
- Examine the haematocrit tube after performing the PCV. Examination of the supernatant against a white background can be used to identify haemolysis, icterus and lipaemia. An increase in the size of the buffy coat layer (usually ~1mm in length) can identify a marked leucocytosis, although this is an insensitive method to identify less marked leukocytosis.
- An EDTA blood sample can be stored in the fridge overnight if needed, but the longer a sample is stored the more likely that artefactual changes will be evident when the sample is analysed. EDTA blood samples should not be frozen. At 48h after sampling there is measurable erythrocyte swelling (increased MCV) which falsely increases the Hct. Samples may show increased haemolysis. Occasionally bacteria will start to grow in the sample (most commonly seen if a sample has previously been analysed on an in-house analyser which increases the risk of environmental contamination).
- Flow cytometry requires samples of <24h old and should not be requested when the lab is closed.
- PT and PTT on coagulation panels are likely to be significantly affected if the citrated plasma sample is >24h old on receipt. Citrated plasma can be stored frozen if necessary.
- If you anticipate a possible need for a blood transfusion when the lab is closed, consider checking the blood type of the patient in plenty of time to facilitate requests from the pet blood bank service.

Biochemistry

- All serum samples should be separated once the sample has fully clotted
 - Ideally the separated serum should be decanted into a plain tube.
 - Glucose can be measured patient side using a glucometer, if available.
 - Once separated, serum samples should be stored in a refrigerator if not being immediately submitted to the laboratory. Most biochemistry samples are stable at 2 – 8 degrees for a week or more and will be unaffected if stored in the fridge over a weekend or bank holiday. However, some analytes may be affected by delayed submission to the lab. These are:
- | | |
|---|---|
| <u>Results affected >24h</u>
EACTH | <u>Results affected >72h</u>
Fructosamine |
| <u>Results affected >48h</u>
NEFA
BHB
Troponin I
Oestrone sulphate | <u>Results affected >5 days</u>
Free T4 |
- Separated serum can be frozen and this may be advisable if the analytes listed above are required on a sample.

Cytology

- For FNAs and fluid smears - once dried the cell morphology on a fresh smear is preserved for FNA samples. Refrigeration is not recommended for smears as condensation can affect cell preservation.
- If a fluid sample has been obtained a fresh, direct (unconcentrated) smear should be made.
- If the cellularity appears low consider preparing a concentrated smear from sediment after gentle centrifugation of the fluid. Use the lowest setting (sometimes marked as urine) on the centrifuge. Make sure to label fresh smears as direct or concentrated
- Inclusion of a fixed specimen, in addition to the unfixed sample, may also be helpful to preserve cell morphology. Fixation is achieved by addition of at least 2 drops of 10 % buffered formalin per ml of specimen. This helps preserve nucleated cell morphology. If culture is required a separate unfixed aliquot should be submitted for culture. NB cytological slides should not be exposed to formalin fumes during preparation or transport as it severely affects the staining. Fixed samples (fluid or histology samples) should be sent in a separate bag.

Urinalysis

- Where possible urinalysis should be performed in-house as soon as the sample is collected.
- A urine specific gravity can be measured using a refractometer.
- A urine dipstick can be used to check for glucose and ketones. Please note that the leukocyte esterase test on urine dipsticks can have a high risk of false positive results in cats, and a high risk of false negative results in dogs.
- A wet drop sediment preparation from a freshly collected urine sample at room temperature can be performed in-house and is the preferred specimen for detection and identification of urine crystals.
- A sediment smear for cytology can be prepared by making a smear from centrifuged urine sediment. Once dried, the cell morphology is preserved and smears should not be refrigerated.

Microbiology

- Microbiology swabs can be kept refrigerated at ~4°C but should not be frozen.
- If culture is required on urine sample submission of a Boric acid sample as well as a plain sample is recommended. Preparation of a concentrated smear (as directed in the cytology section above) is recommended if urine cytology is required.
- DNA in swabs taken for PCRs is robust and can withstand being stored at room temperature for several days. Fresh tissue samples for PCR can be frozen.
- Fungal culture samples should be stored at room temperature (not refrigerated).

Please note that these guidelines are not comprehensive. Please contact the laboratory if you have any questions or need specific advice before sending samples.