Vetpath is a specialist veterinary laboratory dedicated to providing our clients with the finest laboratory diagnostic service. A team of veterinary pathologists and medical scientists with extensive experience in veterinary diagnostic pathology forms the core of the Vetpath team.

VNews

VETPATH LABORATORY SERVICES

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Submission of CSF

Pre-analytical variables always need to be considered when submitting samples for analysis, however sample handling is particularly important for CSF samples.

Cells degenerate rapidly in CSF after collection due to the very low protein concentration. Ideally, CSF samples should be submitted to the laboratory within 4 hours of collection. There is minimal change in the cell population within the first 4 - 8 hours, however significant loss of cells occurs within 24 hours. The delay in processing may cause inaccuracies in both the total WBC count and the differential count, with large mononuclear cells likely to degenerate more rapidly than neutrophils.

This is particularly a concern for practices sending samples overnight to the laboratory and several methods of sample preservation have been described. Autologous serum can be used to preserve the cells, however this will affect the protein concentration of the sample. One drop of the patient's serum can be added to an aliquot of 0.25ml of CSF. The remaining sample is submitted without serum for protein measurement.

Hetastarch has also been used as a preservative for CSF and has the advantage of not altering the protein concentration. Hetastarch can be added to CSF at a ratio of 1:1. This must be noted on the submission form so that the results can be adjusted for the dilution factor.

The best tube for CSF samples is a completely plain tube containing no additives. These tubes

can be purchased from Vetpath using the Supply Order Form. Serum tubes can be used but contain a silicone clot activator that can obscure the cells on the cytospin preparation (image). Any samples containing blood need to be submitted in an EDTA tube to prevent clotting. Unfortunately, EDTA does not appear to provide cell preservation in CSF samples.

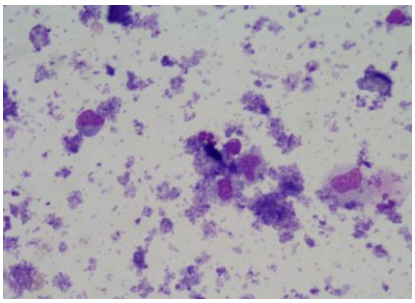

Image: Clumped, crystalline material consistent with silicone clot activator in a CSF sample submitted in a serum tube.

References:

1. Bienzle D and Roma R, Proc, ACVIM, 2007.
2. Fry M et al, Vet Clin Path 2006 Mar;35(1):72-7.
3. Koch et al Acta Vet Scand. 2019 May 6;61(1):23.

Collection of samples for PCR

Vetpath offers multiple PCR tests, both individually and in panels. The method of collection of samples for PCR is dependent on which tissue or organ system is being evaluated.

Submission of a fluid sample, blood or faeces is straight forward and the standard storage containers are required. If you are collecting a swab for the feline respiratory PCR panel, it is important to note that culture media cannot be used.

The collection method is as follows:

1. Use a dry sterile swab (throw away the media).
2. Moisten the swab with tears or exudate and rub the conjunctivae.
3. If present, collect nasal discharge or rub oral ulcerations with the same swab.
4. Break or cut off the tip of the swab and place into a sterile urine pot.
5. Refrigerate the sample until submission to the laboratory.

Diagnosis of Ovarian Remnant Syndrome in dogs

Ovarian remnant syndrome (ORS) is the retention of ovarian tissue in a bitch that has been previously spayed. Remnant ovarian tissue leads to production of hormones resulting in oestrus behaviour.

Diagnosis of ORS can be challenging. Anti-Mullerian hormone (AMH) and progesterone are the two primary hormone tests that are available for screening for this disease. AMH is produced by the granulosa cells of ovarian follicles (as well as the Sertoli cells in testicular tissue). After ovulation, corpora lutea secrete progesterone into circulation.

Most dogs with ORS have elevated serum AMH concentrations. However, AMH testing is negative in a small percentage of these dogs. This may occur when the ovarian remnant only contains luteal tissue and no granulosa cells. In these situations, a concurrent progesterone would be useful to help confirm the diagnosis.

The cyclic production of hormones by ovarian remnant tissue can rarely result in both AMH and progesterone concentrations being normal. Repeat measurement of the AMH and progesterone in 3 weeks may confirm the diagnosis of ORS in these patients.

Both AMH and progesterone can be measured on a serum sample (2ml whole blood in a red top tube). Progesterone measurement is performed daily and a result is generally available within 4 hours of submission to the laboratory. The turnaround time for AMH is approximately 5 working days.

Reference: JAVMA 2019. 254; 9: 1067-1072.

NATA

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