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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Multiplex PCR faecal panel

Diarrhoea in the dog and cat is a frequently encountered problem and this can involve the small intestine, large intestine, or both. Various disorders can lead to diarrhoea therefore a broad based diagnostic approach is needed to identify a potential cause or causes.

Performing tests that allow for the identification of infectious causes of diarrhoea have traditionally involved faecal ova and parasite screens, faecal microscopy, and culture. These tests have been shown to lack sensitivity, and in some cases specificity. The advent of molecular methods such as real time PCR (RT-PCR) has provided an efficient and sensitive tool for the identification of potential enteropathogens.

The Vetpath Faecal Multiplex PCR uses multiplex tandem RT-PCR methods to allow the screening of a panel of multiple infectious agents in a single faecal sample. One or more pathogens can be associated with clinical disease in both dogs and cats. For dogs, this panel includes: *Campylobacter* spp., *Clostridium perfringens* alpha-toxin gene, *Salmonella* spp., canine parvovirus, *Giardia lamblia*, *Cryptosporidium* (*parvum* and *hominis*), canine coronavirus, and canine distemper virus.

For cats, this panel includes: *Campylobacter* spp., *Clostridium perfringens* alpha-toxin gene, *Salmonella* spp., feline panleukopenia virus, *Toxoplasma gondii*, *Tritrichomonas foetus*, *Giardia lamblia*, *Cryptosporidium* (*parvum* and *hominis*), and feline coronavirus.

As with any diagnostic test, results must be interpreted in light of history, clinical signs, signalment, vaccination history, and other clinical data. This is particularly important for the interpretation of PCR-positive results, as some enteropathogens, including many strains of non-*jejuni Campylobacter* spp. and *C. perfringens* can be excreted in healthy animals in the absence of diarrhoea. The diagnostic utility of the Vetpath Multiplex PCR Faecal Panel may therefore be optimised by other laboratory methods such as culture, microscopy, and ELISA-based assays.

The test requires 5g of fresh faeces (minimum 1g) submitted in a sterile container. Faecal samples should be kept refrigerated.

Vetpath Laboratory Services welcomes feedback on all aspects of our service from couriers to lab results. Please feel free to contact us at 9259 3666 or email enquiries@vetpath.com.au

Synacthen shortage and diagnostic alternatives for Addison's disease

Many practices are having difficulty obtaining the synthetic ACTH preparation Synacthen. This makes performing an ACTH stimulation test difficult.

There is a couple of alternative screening and diagnostic tests that may be useful during the Synacthen shortage. The baseline cortisol concentration can be used as a screening test. A basal cortisol concentration greater than 55 nmol/L excludes hypo-adrenocorticism. A cortisol concentration less than 55 nmol/L is suggestive of hypoadrenocorticism, but does not confirm the diagnosis.

The ACTH stimulation test has been the gold standard for diagnosis of hypoadreno-corticism. However, an alternative diagnostic test is the basal cortisol to ACTH ratio. A study published in JVIM found that there was a significant difference in the cortisol:ACTH ratio in healthy dogs (1.1 – 26) compared to hypoadreno-corticoid dogs (0.003 – 0.17).

In addition to not requiring Synacthen for diagnosis of hypoadrenocorticism, the cortisol:ACTH ratio can often be performed on the blood samples submitted for the initial CBC and biochemistry panel. This saves valuable time during diagnosis and treatment can be implemented sooner.

References:
1. Javadi et al., JVIM (2006) 20 (3): 556-561.
2. Bovens et al., JVIM (2014) 28 (4): 1141-1375.

Cytology smears

Preparation technique can have a significant impact on the diagnostic value of cytology smears.

The best way to prepare smears is detailed in the figure on the right. The aspirated material is sprayed on the smear (A) and then **gently** squashed (B) using only the weight of the spreader slide without any additional pressure. The material is then spread along the length of the smear with very gentle pressure.

One of the most common errors made during smear preparation is to spray the material on the slide but not smear it out. Failing to smear the material, even if it is just a couple of drops, will result in areas that are too dense for evaluation. Another common mistake is to use too much force during the smearing process. This causes excess cell rupture and can result in a non-diagnostic sample. A highly cellular aspirate can be ruined by rupturing the cells.

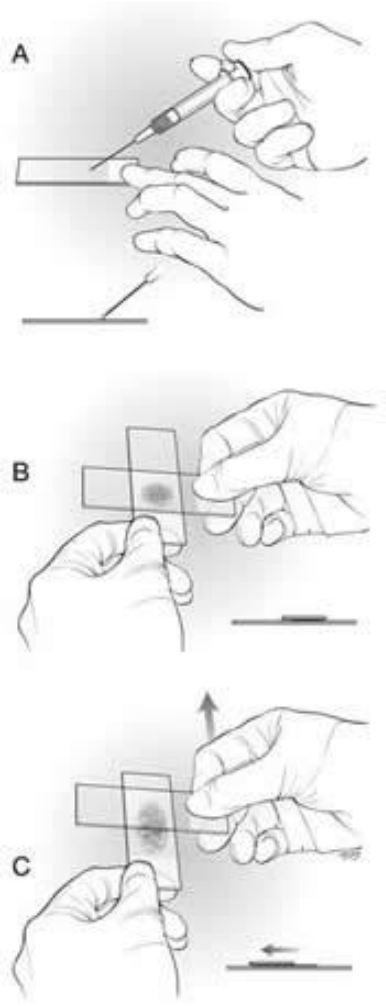

Figure: Cytology smear preparation.
Source: https://ahdc.vet.cornell.edu