

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.

VN News

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Serum BOHB concentrations

Beta hydroxybutyrate (BOHB) is one of the ketones produced during states of negative energy balance or decreased glucose utilization. BOHB is routinely reported in Vetpath biochemistry panels when the glucose concentration is above 10 mmol/L.

Although diabetes mellitus is one of the most common causes of ketosis, increased serum BOHB can be associated with other conditions. A recent study published in JVIM evaluated serum BOHB concentrations in cats with chronic kidney disease (CKD), hyperthyroidism (HT) and hepatic lipidosis (HL). These diseases were selected because

they are known to result in a catabolic state in cats.

BOHB was above the reference interval in 21% of cats with CKD, 20% of cats with HT, and 73% of cats with HL. Cats with CKD and HT tended to have mild ketosis, while the increase in BOHB was more severe in cats with HL.

Interestingly, none of the cats with increased serum BOHB concentration had ketonuria. Although BOHB is the most abundant ketone in serum, acetoacetate is the only ketone body detected by the urine dipstick. This results in serum BOHB measurement being a more sensitive method for detection of ketosis and urine acetoacetate measurement may underestimate the degree of ketosis present. Serum measurement of BOHB is also a more immediate reflection of the ketone status of the pet.

The study confirms the hypothesis that ketosis can occur with a number of diseases in cats, and that measurement of

serum BOHB can be a useful marker of energy balance in a patient. Vetpath includes BOHB at no charge when patients are significantly hyperglycaemia, however BOHB can also be added to any biochemistry panel or screen for a very small additional fee.



Reference: Gorman L et al. JVIM 2016; 60: 611-616.

Label your slides!

The slides supplied by VETPATH have a frosted end for easy labelling. Please remember to label the slides (preferably in pencil) to identify both the animal and your practice. If multiple sites are sampled, it is especially important to label these smears so that each lesion can be evaluated individually.

Is a positive really a positive?

The faecal multiplex PCR test has become a commonly used diagnostic tool for assessing infectious causes of diarrhoea in dogs and cats.

Despite its utility, the faecal multiple PCR test must be interpreted in light of the signalment, clinical signs and vaccination history of the patient. The presence of a particular infectious agent does not mean that agent is the cause of the disease.

This is particularly important for the parvovirus PCR test. The PCR test was developed using a vaccine derived parvovirus strain. Intestinal excretion of parvovirus after vaccination is a well-recognized phenomenon, and therefore a positive parvovirus PCR result in a recently vaccinated patient does confirm infection. A recent study determined that intestinal shedding can occur for up to 28 days after vaccination with a modified live canine parvovirus. True infection cannot be differentiated from vaccine-related shedding in these patients, and interpretation of a positive result must occur in conjunction with clinical signs and signalment.

The PCR test for *Clostridium perfringens* alpha toxin gene also needs to be interpreted carefully. *C. perfringens* is a normal commensal of the intestinal microflora and the alpha toxin gene has been identified in healthy dogs without diarrhoea. Therefore, identification of the alpha toxin gene does not mean that the diarrhoea is due to *C. perfringens*.

Remember: Identification is not the same as causation.

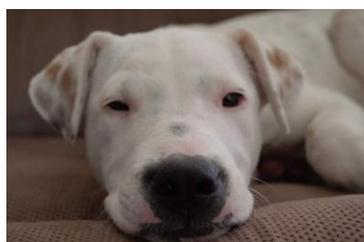
Other options for faecal testing include:

Faecal wet microscopy: Includes assessment for leukocytes, RBC, spiral shaped bacteria, yeast and parasitic cysts and ova. This can be requested in conjunction with a faecal multiplex PCR (**Faecal multiplex PCR PLUS**).

Faecal analysis: Includes wet microscopy, Gram stain, occult blood test and concentration for cysts and ova for small animals. In large animals, the occult blood test is replaced by a faecal egg count.

Faecal culture: Includes a wet microscopy and does not include culture of *Clostridium sp* and *Campylobacter sp*.

Reference: Decaro et al., 2014. Vaccine 32 (30).



Fluoride tubes

All blood tubes are designed to hold a specific volume of blood. Placing the appropriate volume in blood tubes ensures the correct blood to anti-coagulant ratio is present.

The grey top tubes contain sodium fluoride; an enzyme that inhibits glycolysis. Serum glucose concentration from a blood sample stored in a fluoride tube is more accurate compared to that from serum stored in a plain clotted tube. However, under filling the tube or inadequate mixing can cause artifactual hypoglycaemia. In-house testing of blood glucose using a glucometer is recommended if only a small amount of blood can be obtained. Note that glucose is the only parameter that can be measurement in the fluoride sample.



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