



### New assays in cardiac disease

We are pleased to introduce two new tests of cardiac function and damage for dogs.

**ProBNP** is a new test of ventricular dilatation which is assayed on serum and is now suitable as an add-on test to profile submissions. Natriuretic peptides are released in response to expanded extracellular fluid volume and are antagonistic to the actions of the rennin-angiotensin-aldosterone system. Brain natriuretic peptide (BNP) is produced predominantly by left ventricular myocardial cells in response to increased stretching. While the hormone itself has a short half life, proBNP, the pro-hormone,

is stable in serum. Increased concentrations of the hormone are reported to correlate well with cardiac failure and interestingly do not appear to be increased in respiratory disease. This gives the potential for the test to be of value, together with the clinical findings, in differentiating cardiac and respiratory causes of dyspnoea and in selecting patients for further cardiac investigation. In addition, mildly increased concentrations may be useful in identifying possible cases of cardiac disease ahead of the development of overt signs of cardiac failure.

Clinical experience with proANP, a different pro-hormone, was relatively disappointing however the new assay appears more promising (ACVIM 2005 Proceedings) and we are happy to offer it.

**Test code:** BNP  
**Sample requirement:** 0.5ml canine serum  
**Turnaround:** 2-3 days  
**Price:** Contact lab

**Cardiac Troponin I (cTnI)** is a recognised marker of cardiac muscle cell damage in man and is highly conserved across species, making human assays appropriate for veterinary use. This assay has been used in dogs, cats and horses to identify cardiac muscle damage, often associated with the presence of cardiomyopathy. While mild increases can be seen in dyspnoeic cats of non-cardiac origin, marked increases in cTnI show excellent sensitivity and good diagnostic accuracy for the presence of cardiac disease in this often diagnostically challenging group (ACVIM 2004 Proceedings).

**Test code:** TROP  
**Sample requirement:** 0.5ml feline, canine or equine serum  
**Turnaround:** 1 day  
**Price:** Contact lab

Work is continuing on the diagnostic usefulness of BNP in cats. In dogs however both assays have proved useful as they evaluate different aspects of cardiac dysfunction.

### Canine cardiac profile

Both of these assays are available as individual assays or included in the new canine cardiac profile which comprises full haematological evaluation (to exclude anaemia), biochemistry relevant to cardiac and related organ function, BNP and cTnI.

**Test code:** CCP  
**Sample requirement:** 1ml EDTA, 2 x serum gel tubes, 1 x oxalate tube, air dried smears.  
**Turnaround:** 2-3 days  
**Price:** Contact lab

(CCP = Canine Profile without amylase, lipase, trigs, bile acids but includes ProBNP and Troponin)

### Bile acid stimulation tests – how to make them work

Basal bile acids are incorporated in almost all of our profiles as a marker of hepatic function and are generally regarded as a sensitive marker of hepatic dysfunction. However, where an animal has been inappetent for some time, or where there is a congenital portosystemic shunt or liver cirrhosis basal bile acids may be relatively normal despite the presence of significant hepatic functional impairment. In these situations a bile acids stimulation test is required to evaluate hepatic function.

The test is simple to perform and requires only two serum samples, one before eating and one taken two hours after food. The original work on this test was done using a paediatric type diet (Hill's P/d) as the relatively high amounts of fat and protein in puppy food helps to ensure the release of cholecystokinin, the hormone which stimulates gallbladder contraction and release of bile and bile acids into the duodenum. We recommend the use of puppy or kitten foods in animals willing to eat voluntarily for this reason.

The problem remains however what to feed anorexic animals. Many practices use Hill's A/d, presumably because of ease of syringe administration and high fat content. In our experience some animals appear not to respond well to A/d with little or no increase in post prandial bile acids. This in turn raises the dilemma of whether the lack of stimulation reflects failure of gallbladder contraction or the presence of essentially normal liver function.

Where possible, we recommend use of liquidised puppy or kitten food for syringe administration and for cats possibly feeding at home and returning to the surgery for sampling if they are unwilling to eat while hospitalised.

In cats basal bile acids are less sensitive for the detection of morphologic liver changes so a stimulation test is advisable in this species particularly if the signs could relate to the presence of liver disease.

### Histopathologists Plea

Our histopathologists are a conscientious bunch and try extremely hard to provide accurate diagnoses, helpful comments on prognosis and some guidance on therapeutic options where appropriate.

All they ask in return is to know where the tissue has come from, what it looks like clinically and what the history has been. Faced with a blank form and a blob of something, we have to obtain this information by phone which introduces delays and additional work for everyone involved.

As the information required usually needs to come from the clinician or surgeon it would help us greatly if the submitting vet could review the form before it is dispatched to ensure all the information needed is present. Many thanks.

### External Quality Assurance

As a reminder, we offer an external quality assurance programme for in practice laboratory equipment. We consider this to be an extra service offered to our customers, that helps them meet the external laboratory quality assurance requirement of the RCVS practice standards, and not a money making scheme. Full haematology, biochemistry and electrolytes quality assurance samples are available on a monthly basis for £17.00 per month to CTDS clients. Please contact Katie at the lab for further information.