



Newsletter 09/2018

We are pleased to welcome you to the monthly BattLab newsletter. This newsletter will bring you the latest news and information about our laboratory and all tests that we can offer to all our clients.

FREE BATTLAB EVENING SEMINAR



After the success of the first three evening seminars, we are pleased to announce the last one for 2018. This time, Dr Elisabeth Muller, CEO of LABOKLIN and BattLab, will guide us through all the diagnostic tests required for the diagnosis of infectious diseases in dog and cats.

Don't miss out! Limited spaces available.

Title: **Infectious diseases in dogs and cats: how to make a successful diagnosis**

Date: **Tuesday 16th of October 2018**

Starting time: 19:30

For registration please send an email to admin@battlab.com



FREQUENTLY ASKED QUESTIONS ABOUT DIAGNOSING CANINE LEPTOSPIROSIS

This month FAQ section is dedicated to the diagnosis of **Leptospirosis**, a relatively common zoonotic infectious disease affecting the canine species with a worldwide distribution. The article below is a collection of answers to all the questions we get asked most often by our clients.

What main clinicopathological abnormalities are expected in dogs with Leptospirosis?

Increased serum urea and creatinine concentrations are observed in >80% of dogs and are often associated with poorly concentrated urine. Concurrent hepatocellular damage is also very common, and it presents with increased liver enzymes and total bilirubin. Haematologic abnormalities are often non-specific and may include an inflammatory leukogram.

Which tests should I request if I suspect Leptospirosis in a dog? Laboratory diagnosis of Leptospira infection is based mainly on serology (MAT) and PCR results.

- **Microscopic agglutination test (MAT)** is the current diagnostic test of choice for canine leptospirosis in patients with consistent clinical signs. Ongoing infection is confirmed in the presence of positive titers and observation of a 4-fold change in titers 2-4 weeks after. Be aware that often in the first weeks of illness, dogs may have negative MAT results.
- **PCR** has a potential utility early in the course of untreated infection when antibody assays are frequently negative and antimicrobials have not been administered. In the first 10 days of infection organism numbers are the highest in peripheral blood, and thus **blood** is the sample of choice during the first week of illness. After that time, the organisms are present in highest concentration in **urine**. When the time of infection is unknown, simultaneous testing of blood and urine will increase diagnostic sensitivity. False negative PCR results may occur when organism numbers in samples are low, or PCR inhibitors are present.
- **ELISA** (in house test kit) detects antibodies to the Lip32 antigen. This test can be used to provide a rapid assessment of leptospiral antibody status to the serovars Grippothyphosa, Canicola, Pomona and Icterohaemorrhagiae, however it cannot differentiate between the serovars or between antibodies produced as a result of infection or vaccination.

Can previous vaccination interfere with the interpretation of the diagnostic tests in a dog suspected to be affected by leptospirosis? Vaccination against Leptospira induces in the organism an immune response that culminates with the production of specific antibodies. This will result in positive MAT and ELISA tests, similarly to what observed in an infected dog. In those cases, quantitative PCR is preferred, as this test is unaffected by previous vaccination.

Our laboratory offers a **comprehensive service of serology and PCR testing for infectious diseases in all domestic species**. For more information visit our website or contact us by phone or email.



Eliminating the confusion in test results (HAEMOLYSIS)

Laboratory tests are helpful in veterinary practice if the results can be believed and trusted as being real and accurate. Haemolysis and lipaemia may have a major impact on the test results and in some cases may lead to misinformation about the dog's or cat's health state. This is why we have decided to present you each month an article that focuses on this important topic, starting from haemolysis.

The term **haemolysis** indicates the pink/red discoloration of plasma or serum, secondary to the destruction/lysis of red blood cells, and it can be in vivo or in vitro. **In vivo (in the patient) haemolysis** is the destruction of red blood cells in the circulation, before the sample is collected for analysis. It is considered a genuine phenomenon which cannot be avoided, and it is commonly due to a variety of medical conditions, including antigen-antibody reactions, haemolytic anaemias, toxins and poisons, and mechanical RBCs rupture. **In vitro (artefactual, in the collection tube) haemolysis** results from poor venipuncture technique, prolonged blood storage, exposure to temperature extremes, and certain anticoagulants (fluoride-oxalate), which cause artefactual red blood cell lysis. Red blood cells are also more fragile in lipaemic samples and tend to lyse more readily in these samples, even if the blood is stored or handled correctly.

Most cases of haemolysed serum can be avoided observing the following steps:

- ☐ Use a 20-22G needle for blood collection
- ☐ Be as gentle as possible, drawing the blood evenly
- ☐ Allow blood sample to clot completely before centrifugation (~15-30 minutes)
- ☐ After centrifugation transfer the serum into a plain tube

Haemolysis may affect the blood test results

The effects of haemolysis can be the result of products liberated from the red cells themselves, or due to interferences with the assays of the biochemistry analysers. The amount of haemolysis needed to affect a test is dependent on the test being performed. In general, slight haemolysis has little effect on most tests; however, it will cause increased or decreased test results for specific tests (see table below).

Table1. Effects of haemolysis on selected biochemistry parameters. Please note this is based on the assays adopted at BattLab and it may differ from lab to lab. (NSI: not significant interference)

Parameter	Effects of haemolysis	Parameter	Effects of haemolysis
Albumin	↑	Fructosamine	NSI
ALP	↑	GGT	↓
ALT	↑	Glucose	NSI
Amylase	↓	Lipase	NSI
Bile acids	↓	Phosphate	↑
Bilirubin	↑	Potassium	↑
Calcium	NSI	Sodium	↓
Chloride	NSI	Total protein	↑
Cholesterol	↑	Triglycerides	NSI
Creatinine	↑	Urea	↑

Our laboratory offers a **comprehensive service of biochemistry for all domestic species**. It is equipped with state-of-the-art analysers and it is enrolled in an external quality control system to ensure the most reliable and accurate results. Test results are always validated by a veterinary clinical pathologist and reported with a written comment/interpretation.

Yours sincerely,
The BattLab team

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