PHOENIX LAB Excellence in Veterinary Science & Service

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TEST SERVICE UPDATE: Leptospira Rapid Screen-385

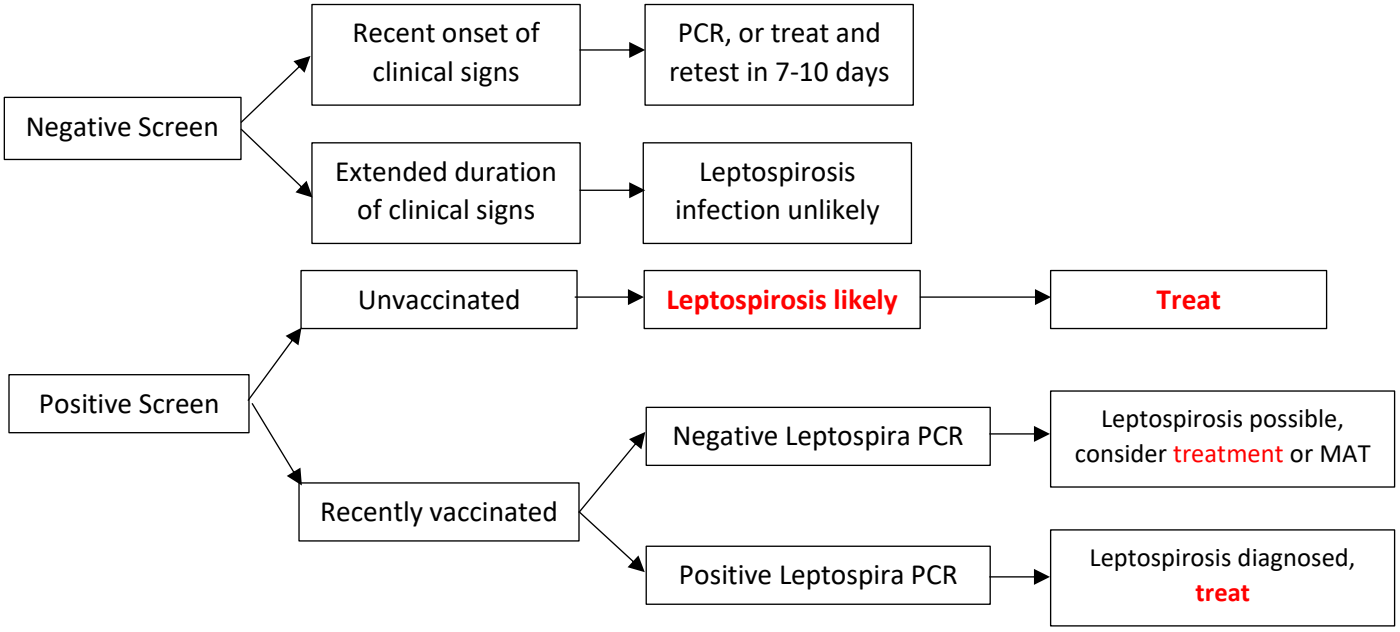
Introduction

In order to meet the needs of our clients, Phoenix Lab is pleased to announce the addition of the WITNESS® Lepto IGM antibody testing by Zoetis to our test menu. WITNESS® Lepto uses lateral flow, also known as rapid flow immunochromatography (RIM), to detect the primary immune response (IgM antibodies) to four leptospira serovars: *L. canicola, L. icterohaemorrhagica, L. grippotyphosa, and L. pomona.* Using WITNESS® Lepto, IgM antibodies may be detected as early as seven days after exposure, sooner than MAT serology. Results are given as qualitative. Although microscopic agglutination test (MAT) serology is considered to be the reference method for diagnosis of leptospirosis, the WITNESS® Lepto offers an early screening test. Additional testing with MAT serology and/or PCR testing (the latter prior to antibiotic therapy) can also be done (see testing below). The Rapid Screen should be used to aid in the diagnosis of sick dogs with clinical signs compatible with canine leptospirosis: signs of renal and/or hepatic failures, lethargy, anorexia, vomiting, acute febrile illness, pulmonary hemorrhage, anemia, uveitis, and abortion. WITNESS® Lepto detects the presence of IgM antibodies against Leptospira in canine whole blood, plasma, or serum.

Leptospira Rapid Screen Test Code: **385**	**Price:** Please contact Lab	**Turn Around:** Daily AM/PM

SO639: Leptospirosis Antibody Titer, Acute, is still available as a send out test with a 10-day turn-around time on the acute sample sent to Phoenix for testing. (Serum sample required. Sample held frozen for 2 weeks.)

Rapid Screen Interpretation



1. Skyes JE, Hartmann K, Lunn KF, et al. 2010 ACVIM Small Animal Consensus Statement on Leptospirosis: Diagnosis, Epidemiology, Treatment, and Prevention. J Vet Intern Med 2011;25:1-13.

Clinical Assessment

A single positive MAT titer greater than or equal to 1:800 may increase suspicion for clinical leptospirosis. As single titers may be negative for leptospirosis early in the course of disease, current recommendations for diagnosis of leptospirosis are measurement of acute and convalescent samples (7-14 days apart) demonstrating a 4-fold or greater rise in titer. The determination of a rising titer by MAT helps prevent over interpretation of high single titers due to recent vaccination or cross-reactivity between serovars.

Phoenix offers SO639, Leptospirosis Antibody Titer (Acute), sent to the Washington Animal Disease Diagnostic Laboratory at WSU. Titers tested for include: Include *L canicola, L. grippotyphosa, L. hardjo,L. icterohaemorrhagiae, L. pomona, L. bratislava, and L. autumnalis*. Leptospirosis Antibody Titer (Convalescent), SO166, can be ordered following an acute titer (SO639). A 15 serovar MAT test for leptospirosis is also available, SO 219. Failure to isolate *L. autumnalis* on culture from dogs in the US or Canada suggests that positive titers to this serovar may reflect cross-reactivity.

The variation in positive results and paucity of acute and convalescent titers makes it challenging to identify infecting serovars. Studies have shown that the serovar with the highest titer can vary over time. Paradoxical cross-reactivity to multiple serovars can occur after exposure to a single serovar. Rather than trying to predict which serovar is involved, results of MAT serology are best used in conjunction with history, clinical signs, and supporting laboratory testing, to diagnose clinical leptospirosis and begin appropriate treatment.

PCR Testing

Polymerase chain reaction (PCR) testing for leptospiral DNA can be performed on urine and whole blood. *It must be performed on a sample collected prior to beginning antibiotic therapy.* The sensitivity and specificity of PCR assays may vary with the laboratory and shedding patterns of various serovars present in geographic areas. PCR assays are best performed on blood and urine concurrently because urine shedding begins roughly 10 days after onset of infection. The advantage to PCR testing is that results may be positive before serology. A negative PCR result does not rule-out leptospirosis.

Dark-field microscopy is not routinely performed. Bacterial culture for leptospirosis in blood or urine is the most definitive technique to identify infective *Leptospira spp*. but culture is difficult and must be incubated for several weeks.

Diagnostic testing should always be interpreted in conjunction with clinical impression. Results of any serum test for leptospirosis may be affected by recent vaccination.

Leptospirosis is a reportable disease to the Washington State Department of Health. Diagnostic laboratories and attending veterinarians are required to report results consistent with current exposure. http://www.doh.wa.gov/Portals/1/Documents/Pubs/333-158.pdf