

FOCUS A Battle of Tests

Anaplasma phagocytophilum is a common tick-borne illness in dogs. Conventional diagnostic methods include antibody measurement via immunofluorescence assay (IFA) or ELISA, and antigen detection via polymerase chain reaction (PCR). This study sought to determine the relative specificity and sensitivity of IFA and the ELISA SNAP4Dx (idexx.com) test vs PCR. Blood samples from 200 client-owned dogs were collected and assays performed using standard procedures and/or manufacturer's instructions. An IFA titer $\geq 1:40$ was considered positive. Four dogs were positive on PCR and considered infected. Antibody tests for these dogs were also positive, which indicated an excellent sensitivity of 100% for IFA and SNAP4Dx. However, the specificity of the antibody tests as compared with PCR was low, with specificity of IFA and SNAP4Dx at 52.9% and 57.4%, respectively. Reasons for low specificity might include cross-reactions with antibodies to other related pathogens or previous exposure. Sensitivity of PCR can be problematic, as bacteremia can potentially fluctuate, yielding false-negative results with active infection. Only fair agreement was found between the IFA and SNAP4Dx tests. Cases in which IFA titers were low-positive and SNAP4Dx was negative might indicate cross-reactivity, subjectivity in interpreting IFA, lack of standardization, very early infection, or a higher cut-off value for the SNAP4Dx. A major study limitation was its prospective, in-clinic design, which lacked well-defined positive and negative controls. The authors conclude that IFA and SNAP4Dx are excellent screening tests useful for ruling out anaplasmosis.

Commentary

A. phagocytophilum is prevalent worldwide and is the causative agent of canine granulocytic anaplasmosis. A commonly utilized screening tool for the disease is the SNAP4Dx test. This test and the IFA test detect the presence of antibodies in blood. They are quite sensitive for detecting whether an immune response has previously been mounted but may not accurately diagnose an early or active infection when antibodies have yet to form. PCR detects DNA from the organism and thus more accurately detects true infections. However, PCR may not detect all active infections, or a positive result might occur without clinical disease. For clinical confirmation, a positive test result with the appropriate concurrent clinical signs is most desirable.¹—*Johanna Rigas, MS, DVM, DACVP*

Source

Comparison of different diagnostic tools for the detection of *Anaplasma phagocytophilum* in dogs. Barth C, Straubinger RK, Müller E, et al. *VET CLIN PATHOL* 43:180–184, 2014.

1. **Canine granulocytic anaplasmosis: A review.** Carrade DD, Foley JE, Borjesson DL, Sykes JE. *JVM* 23:1129–1141, 2009.

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SNAP4Dx tests.**

continues


**sentinel
spectrum®**
(milbemycin oxime • lufenuron • praziquantel)

Caution

Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

Indications

SENTINEL® SPECTRUM® (milbemycin oxime/lufenuron/praziquantel) is indicated for the prevention of heartworm disease caused by *Dirofilaria immitis*; for the prevention and control of flea populations (*Ctenocephalides felis*); and for the treatment and control of adult roundworm (*Toxocara canis*, *Toxascaris leonina*), adult hookworm (*Ancylostoma caninum*), adult whipworm (*Trichuris vulpis*), and adult tapeworm (*Taenia pisiformis*, *Echinococcus multilocularis* and *Echinococcus granulosus*) infections in dogs and puppies two pounds of body weight or greater and six weeks of age and older.

Dosage and Administration

SENTINEL SPECTRUM should be administered orally, once every month, at the minimum dosage of 0.23 mg/lb (0.5 mg/kg) milbemycin oxime, 4.55 mg/lb (10 mg/kg) lufenuron, and 2.28 mg/lb (5 mg/kg) praziquantel. For heartworm prevention, give once monthly for at least 6 months after exposure to mosquitoes.

Dosage Schedule

Body Weight	Milbemycin Oxime per chewable	Lufenuron per chewable	Praziquantel per chewable	Number of chewables
2 to 8 lbs.	2.3 mg	46 mg	22.8 mg	One
8.1 to 25 lbs.	5.75 mg	115 mg	57 mg	One
25.1 to 50 lbs.	11.5 mg	230 mg	114 mg	One
50.1 to 100 lbs.	23.0 mg	460 mg	228 mg	One
Over 100 lbs.	Administer the appropriate combination of chewables			

To ensure adequate absorption, always administer SENTINEL SPECTRUM to dogs immediately after or in conjunction with a normal meal.

SENTINEL SPECTRUM may be offered to the dog by hand or added to a small amount of dog food. The chewables should be administered in a manner that encourages the dog to chew, rather than to swallow without chewing. Chewables may be broken into pieces and fed to dogs that normally swallow treats whole. Care should be taken that the dog consumes the complete dose, and treated animals should be observed a few minutes after administration to ensure that no part of the dose is lost or rejected. If it is suspected that any of the dose has been lost, redosing is recommended.

Contraindications

There are no known contraindications to the use of SENTINEL SPECTRUM.

Warnings

Not for use in humans. Keep this and all drugs out of the reach of children.

Precautions

Treatment with fewer than 6 monthly doses after the last exposure to mosquitoes may not provide complete heartworm prevention. Prior to administration of SENTINEL SPECTRUM, dogs should be tested for existing heartworm infections. At the discretion of the veterinarian, infected dogs should be treated to remove adult heartworms. SENTINEL SPECTRUM is not effective against adult *D. immitis*.

Mild, transient hypersensitivity reactions, such as labored breathing, vomiting, hypersalivation, and lethargy, have been noted in some dogs treated with milbemycin oxime carrying a high number of circulating microfilariae. These reactions are presumably caused by release of protein from dead or dying microfilariae.

Do not use in puppies less than six weeks of age.

Do not use in dogs or puppies less than two pounds of body weight.

The safety of SENTINEL SPECTRUM has not been evaluated in dogs used for breeding or in lactating females. Studies have been performed with milbemycin oxime and lufenuron alone.

Adverse Reactions

The following adverse reactions have been reported in dogs after administration of milbemycin oxime, lufenuron, or praziquantel: vomiting, depression/lethargy, pruritus, urticaria, diarrhea, anorexia, skin congestion, ataxia, convulsions, salivation, and weakness.

To report suspected adverse drug events, contact Novartis Animal Health at 800-637-0281 or the FDA at 1-888-FDA-VETS.

Manufactured for: Novartis Animal Health US, Inc.
Greensboro, NC 27408, USA

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