



American Heartworm Society Resistance Statement

Veterinarians rely on macrocyclic lactones (MLs) to protect their patients from heartworm disease, so the evidence from recent research that sub-populations of heartworm have shown resistance to MLs is of great importance in veterinary medicine. Every compound currently marketed in every form of administration (oral, topical, and parenteral) has been shown to be less than perfect in at least one study. However, while the evidence indicates that resistance affects all macrocyclic lactones, differences in active ingredients, doses, and product formulation among the available preventives can result in varying rates of failures.

Research continues in a number of related areas, as scientists strive to understand how heartworm resistance develops, how veterinarians can determine if resistance is an issue in their practice area, and how they can mitigate lack of efficacy in their patients.

It is important that veterinarians understand and communicate this new information about resistance appropriately to pet owners. Key points include:

- Research findings do not demonstrate widespread ineffectiveness of available heartworm preventives; MLs continue to be effective in the vast majority of cases.
- The latest information reinforces what the American Heartworm Society (AHS), along with other heartworm experts, has advised for years—that appropriate, on-label usage of MLs is paramount. Inappropriate product use, such as the use of MLs alone (the "slow-kill" method) to treat heartworm-positive dogs, and the off-label use of large-animal products as heartworm preventives, is not recommended.
- Lack of efficacy in heartworm preventives can be related to many factors, including resistance, but the most important of these is compliance. By following label recommendations for the use of preventives, and monitoring patients appropriately, veterinarians can play a vital role in maintaining the effectiveness of ML medications.

The American Heartworm Society (AHS) guidelines explicitly recommend year-'round administration of ML preventives as well as annual testing. The guidelines also recommend a specific treatment protocol for heartworm-positive dogs. This treatment protocol includes administration of doxycycline in combination with an ML, followed by a three-dose regimen of melarsomine.

The American Heartworm Society [canine and feline guidelines](#) were recently updated to reflect the latest research presented in this and other scientific forums. The goal of AHS is to continuously provide current and scientifically supported information on heartworm disease, as well as informed guidelines for the veterinary community.