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# **IVERMECTIN**

## **(Brand Names: Ivomec, Heartgard and similar oral heartworm preventives, Acaress ear drops)**

**NOTE** that there are two dosing schedules: "label" use which refers to commercial heartworm products and "off label" use for other parasites such as mange mites.

**STRENGTH:** 68 micrograms, 136 micrograms, 272 micrograms (for heartworm products/label use), injectable large animal formulae are much stronger (for off label use)

**ROUTE OF ADMINISTRATION:** ORAL for most uses whether label or off label. Can be given with or without food.

**ACTION OF MEDICATION:** Blocks glutamate-gated chloride channels in the invertebrate nervous system. Mammals do not have glutamate-gated chloride channels. Ivermectin has activity on GABA-gated chloride channels which mammals do possess but ivermectin is not able to cross the blood-brain barrier to get to them in normal individuals (see link).

**MOST COMMON SIDE EFFECTS REPORTED:** Tastes terrible but generally there are no common side effects.

**SEVERE SIDE EFFECTS REPORTED:** Neurotoxicity can result if off label doses are used in dogs harboring the MDR-1 mutation. The MDR-1 mutation occurs in certain individuals, especially members of collie-related breeds and other herding breeds. These individuals should either be tested for the MDR-1 mutation or utilize a test dose protocol where a low dose is used before the therapeutic dose is used. Any sign of incoordination, weakness, dilated pupils, drooling, or tremors are a sign that the drug should be discontinued immediately. Respiratory paralysis can result if neurologic signs are allowed to progress. Neurotoxicity is possible but rare at high off label doses in animals without the MDR-1 mutation. Neurotoxicity can result in normal animals using off label doses if ivermectin is combined with spinosad (oral flea product such as Comfortis or Trifexis).

**STORAGE:** Keep away from light and store at room temperature. Do not refrigerate.

**IF YOU MISS A DOSE:** Do not double up on the next dose. Simply give the medication when it is remembered or pick up with the next dose, allowing at least the proper interval between doses according to the label instructions. If the dose skipped was a heartworm preventive, there is an approximately 2 week "grace period" but if more than 2 weeks have past since the dose was due, your pet is vulnerable to heartworm infection until the dose is given again.

**OTHER INFORMATION:** Toxic to fish and wildlife. Dispose of ivermectin by mixing with cat litter or coffee grounds in a sealable bag and dispose of in the regular trash. At present, newer and safer parasite products have supplanted most of the off-label uses of ivermectin.

For a more detailed presentation, visit:

[www.marvistavet.com/ivermectin.pml](http://www.marvistavet.com/ivermectin.pml)