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| **Name Of Drug** | **Mechanism of Action** | **Parasite it affects (lifecycle)** | **Dose**  | **Contraindications and Side effects** | **Route of Administration** | **Other Information** |
| Avermectins-Abamectin-Doramectin-Eprinomectin-Selamectin | Binds selectively with high affinity to glutamate-gated chloride ion channels, which are in close proximity to GABA-gated sites. At high doses, they potentiates GABA-gated sites inducing flaccid paralysisAlso interfere with the reproduction of nematode and arthropod parasites including (reduced oviposition by ticks, sterility of both male filarial nematodes, abnormal egg formation) |  |  | Collie and Australian shepherds are usually susceptible to certain macrocylic lactones anthelmintics |  | Endectocides (both internal and external parasites) No activity against cestodes, trematodes and protozoa Produced by Streptomyces avermitilis (soil-dwelling fungi)Broad spectrum of activity and effective at low concentrationsWide margin of safety due to them not readily crossing the blood brain barrier (BBB) |
| Avermectin-**Ivermectin** (Cardomomec®, Double impact®, Equimectrin®, Eqvalan®, Heartgard-30®, Ivomec®, Mectizan®, Oramec®, Rotectin 1®, Topline®, Ultramectrin®, Zimecterin®). | Ivermectin enhances the release of gamma amino butyric acid (GABA) at presynaptic neurons. GABA acts as an inhibitory neurotransmitter and blocks the post-synaptic stimulation of the adjacent neuron in nematodes or the muscle fiber in arthropods. By stimulating the release of GABA, ivermectin causes paralysis of the parasite and eventual death. As liver flukesand tapeworms do not use GABA as a peripheral nerve transmitter, ivermectin is ineffective against these parasites. | Cattle and sheep:Adult and 4th stage larvae forms of Haemonchus, Ostertagia, Cooperia, Trichostrongylus, Strongyloides, Bunostomum, Nematodirus, Trichuris, Oesophagostomum, Dictyocaulus, Chabertia ovina, oestrid larvae, mites, sucking lice, ticks (reduce reproduction potential) Horses:4th larvae stage of Cyathostomes, large strongyles, ascarids, pinworms, stomach worms, threadworms, lungworms, migrating or stomach-attached stages of bots, and OnchoceraSwine:Immature and adult stages of most intestinal worms (not muscular stages of Trichinella spiralis), lice and mange mites. Prevention of vertical transmission of Strongyloides ransomi Dogs:Heartworm prevention (Heartgard) Heartgard-30 plus also contains pyrantel pamoate for hookworms and ascarids also Cats:Heartworm prevention | Dogs:Heartworm:0.006 mg/kg PO once monthlyMicrofilaricide:50 – 200 micrograms/kg (0.05 - 0.2 mg/kg) as a single dose; contraindicated in colliesEctoparasiticides (miticide):For treatment of Sarcoptes scabiei or Otodectes cynotis infestations: 300 micrograms/kg (0.3 mg/kg) SQ or PO; repeat in 14 daysEndoparasiticide:-For treatment of parasitic lung disease (Capillaria spp.): 0.2 mg/kg PO once.-For roundworms, hooks, or whips: 200 micrograms/kg PO once. DO not use in ColliesCats:Heartworm:Minimum effective dosage: 0.024 mg/kg (24 micrograms/kg) PO every 30-45 days.Aelurostrongylus abstrusus:0.4 mg/kg SubQ onceCattle:For psoroptic mange: 200 mg/kg IM (Note: Reference was written before approval ofthe SQ labeled bovine product); isolate from other cattle for at least 5 days after treatment.Horses:0.2 mg/kg PO; 0.2 mg/kg PO at 4 day intervals for lice and mange.Swine:300 micrograms/kg (0.3 mg/kg) SQ in the neck immediately behind the earSheep:200 micrograms/kg for nasal bot infection | Tenfold safety margin in ruminants, horses, swine, and most breeds except Collie and some Australian Shepherds Signs of toxicity:Ataxia, depression and visual impairment Toxicity results from gross overdose normal dose = 200 μg/kg (oral) toxic dose = 2000 μg/kg | OralIntraruminal sustained-release bolus Intravenous Subcutaneous  | Semisynthetic derivative of AvermectinBroad spectrum of activity against a wide variety of arthropods and nematodes of domestic animals and humansOff-white powder which is highly lipophilic and hydrophobic Fecal excretion is main route of elimination  |
| Milbemycins -Milbemycin-Moxidectin | Milbemycin is thought to act by disrupting the transmission of the neurotransmittergamma amino butyric acid (GABA) in invertebrates | Once-a-month heartworm preventative(Dirofilaria immitis.) And for hookworm control (Ancylostoma caninum). It also has activity against a variety of other parasites, including roundworms (Toxocara canis), Trichuris vulpis, and for demodicosis. In cats, milbemycin has been used successfully to prevent larval infection ofDirofilaria immitis. | Dogs:Heartworm:0.5 - 0.99 mg/kg PO once monthlyCats: Heartworm:0.5 - 0.99 mg/kg PO once monthly | Collie and Australian shepherds are usually susceptible to certain macrocylic lactones anthelmintics |  | Endectocides (both internal and external parasites)Produced by Streptomyces hygroscopicus aureolscrimosus (soil-dwelling fungi)Broad spectrum of activity and effective at low concentrationsWide margin of safety due to them not readily crossing the blood brain barrier (BBB) |