



## Neurology/NeuroSurgery

**Stephen B. Lane, DVM**

Diplomate ACVIM-Specialty of Neurology  
Veterinary Neurology/Neurosurgery

### **Gabapentin**

Gabapentin is a useful adjunctive therapy for refractory or complex partial seizures in dogs and cats and in the treatment of pain. The mechanism of action of Gabapentin for its anticonvulsant or analgesic actions is not understood. While Gabapentin is structure-related to gamma aminobutyric acid (GABA), it does not appear to alter GABA binding, receptor uptake or degradation or serve as an GABA agonist. Gabapentin has analgesic effects resulting in prevention of sensation of pain resulting from a normally non-noxious stimulus or hyperalgesia (exaggerated response to painful stimuli). Enhanced down regulation of neuronal conduction at the dorsal root entry zone is documented and may represent its efficacy in central-pain management.

In dogs oral bioavailability is about 80% of the dose. Peak plasma levels occur 2 hours following oral administration. Elimination is primarily by a renal route as the drug is not significantly metabolized and is almost exclusively excreted unchanged in the urine. With an elimination half-life of approximately 2 to 4 hours in the dog, administration is on an every 8 hour basis at a minimum. Pharmacokinetic data for cats is not available.

The adverse effect in dogs and cats is not well defined. Sedation is probably the most likely adverse effect that would be seen. Gabapentin should not be used in pregnant and lactating animals. Use in animals with renal insufficiency should be based on need and dosage adjustments made.