

## **Abcb1 Mutation And Suspected Eprinomectin Toxicity In A Maine Coon**

### **ABCB1 mutation and suspected eprinomectin toxicity in a Maine Coon**

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A nine-month-old Maine Coon developed multifocal neurological signs following application of Nexgard Spectra (Boehringer Ingelheim). The cat improved with supportive care. The cat was homozygous for an ABCB1 mutation ABCB11930\_1930del TC.

A nine-month-old female spayed Maine Coon presented to an Australian referral practice with multifocal neurological signs following topical application and possible ingestion of topical Nexgard spectra (Boehringer Ingelheim). Clinical examination was supportive of multifocal neurological disease including tongue protrusion, bilateral mydriasis, pelvic limb ataxia and intermittent twitching. Haematology was unavailable. Serum biochemistry indicated a mild increase in ALT (110 U/L; RI [19-100]) and AST (68 U/L; RI [2-62]) with a normal CK (314 U/L; RI [64 – 400]) and marginal hyperphosphataemia (2.5 mmol/L; RI [1.0 – 2.3]). An in-house ammonia was normal (10 umol/L; RI [0- 95]). Bedside cryptococcal lateral flow antigen assay (CrAgLFA, IMMY) was negative, as was bedside retroviral testing (Witness FeLV/FIV). Antibodies towards toxoplasma were not detected. The cat clinically improved with supportive treatment and was neurologically normal two weeks from application. The cat was a homozygote for ABCB1 mutation ABCB11930\_1930del TC.

This is the first documented cat in Australia who is a homozygote for the feline ABCB1 mutation (ABCB11930\_1930del TC). This mutation has been identified in a temporal cluster of cats with adverse neurological reactions to macrolytic lactone containing drugs in North America <sup>1,2</sup>. The frequency of this variant and breed predispositions in Australian cats is unknown. The authors hypothesise that this mutation predisposed the cat to reversible neurotoxicosis from Nexgard Spectra.

#### References

1. Mealey KL, Burke, NS. Identification of a nonsense mutation in feline ABCB1. *Journal Vet Pharmacol* 2015;38(5):429-33.

2. Mealey KL, Burke NS, Connors RL. Role of an ABCB1 1930\_1931del TC gene mutation in a temporal cluster of macrocyclic lactone-induced neurologic toxicosis in cats associated with products labeled for companion animal use. *J Am Vet Med Association* 2021;259(1):72-76.