Pharmacokinetics of Sativex® in Dogs: Towards a Potential Cannabinoid-Based Therapy for Canine Disorders

Review # 1

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Things to consider when reading this article:

- The utilization of medicines that are being investigated in humans in animals with natural disease provides significant insight into human pathologies and vice versa.
- Even without the ECS being mapped in its entirety in canines, the similarities between canine and human ECS anatomy and physiology makes a strong case for veterinarians to be able to extrapolate clinical uses from human-based research.
- Could the concurrent use of anesthetic medications have impact on the study's findings? Additionally, I would be interested to know the reasoning behind the need for anesthesia for a jugular blood draw in a healthy canine - this seems unnecessary, esp as this protocol may have impact on the data.
  Inclusion of the details of this protocol would strengthen the clinical applicability of this study.

The big picture:

- This study gives important and useful information for use in conditions where a steady blood level is desirable - particularly chronic pain and seizures. This also would seem to have important relevance to use in generalized anxiety as well as situational anxiety and may provide insight on how cannabis products are administered in these various situations and/or leading up to known stressful events.

Review # 2

Hunter Land *MS*

Things to consider when reading this article:

- We know that expression of CB1 in the CNS is higher (in dogs than in humans), the same can be said about stimulation of the beta arrestin pathway and the rates of internalisation. This can vary extensively across species and my provide evidence that cannabinoid medicines may be best suited for species outside of humans
- I think it is important to note that metabolic enzymes can differ between species. Examples of this have been studied where CBD inhibits rodent FAAH but not human FAAH. We don't know what happens in canines yet.
- The FDA likes fasted data because it removes the food effect variable. The clinical relevance of food-effect is tremendous so a fed study is critical and should be conducted.
- There is certainly overlap with p450s with most anaesthetics. I am also aware of a DDI with propofol.

The big picture:

- I am not sure if we know about differential metabolites in dogs. I don't believe we can say that THC is absorbed sublingually. We know that CBD is metabolised differently, so THC differences in absorption would not surprise me.