Therapeutics Research Note: **Doxycycline Formulations**

This canine study evaluated the pharmacokinetics of 4 oral long-acting formulations of doxycycline mixed with different proportions of acrylic acid and polymethacrylate-based matrix (DOX1, DOX2, DOX3, and DOX4). A control of 20 mg/kg of doxycycline with no excipients was included.

Therapeutic concentrations were observed for 60 hours after administration of DOX1 and DOX4, for 48 hours after DOX2 and DOX3, and for 24 hours after the control dose. Pharmacokinetic parameters between DOX1 and DOX2 and between DOX3 and DOX4 did not differ significantly; however, parameters for the control treatment differed significantly from all long-acting formulations. These doxycycline formulations may be useful in reducing dosing frequency and, in turn, may improve compliance and decrease costs and adverse effects. However, further safety studies are needed.

Source

Arciniegas Ruiz SM, Gutiérrez Olvera L, Bernad Bernad MJ, Caballero Chacón Sdel C, Vargas Estrada D. Comparative pharmacokinetics of a new oral long-acting formulation of doxycycline hyclate: a canine clinical trial. *Eur J Pharm Sci*. 2015;80:9-15.

Therapeutics Research Note: **Compounded Buprenorphine Stability**

Buccally administered, compounded buprenorphine is a frequently used pain medication in cats. The long-term stability of compounded buprenorphine solutions is unknown.

In this study, the authors used high-performance liquid chromatography to determine the stability of a 3 mg/mL-compounded buprenorphine product. The formulation remained stable under refrigeration and at room temperature for 90 days. However, some of the room-temperature samples developed a white sediment, and pH decreased over time, indicating possible degradation.

The authors concluded that the 3 mg/mL-compounded buprenorphine product is stable for 90 days when refrigerated and stored in amber glass bottles.

Source

Kirk LM, Brown SD. Beyond-use date determination of buprenorphine buccal solution using a stability-indicating high-performance liquid chromatographic assay. *J Feline Med Surg*. 2015;17(12):1034-1040.