Pharmacokinetics of a Single Dose of Oral Meloxicam in Rehabilitated Wild Brown Pelicans (*Pelecanus Occidentalis*)

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**Abstract:** Due to concerns regarding potential adverse effects of meloxicam in pelicans reported by several zoos and wildlife rehabilitation facilities, this study was undertaken to determine the pharmacokinetics of a single oral dose of meloxicam in brown pelicans (*Pelecanus occidentalis*). A pilot study was performed with 6 apparently healthy wild adult brown pelicans of unknown sex during rehabilitation, administered a single oral dose of meloxicam at 0.2 mg/kg. Plasma drug concentrations were monitored for 24 hours but failed to capture the elimination phase of the drug. Consequently, a principle study monitored plasma concentrations for 120 hours. Six additional adult wild brown pelicans, 3 males and 3 females, approaching releasable condition in rehabilitation, were split into 3 groups and each orally administered 0.2 mg/kg meloxicam. Blood samples were collected at baseline and at 4 additional time points that differed between groups. Plasma concentrations were measured with liquid chromatography-mass spectrometry. The mean maximum plasma concentration was 1.22 µg/mL and was achieved at 24 hours after drug administration. The elimination half-life was 36.3 hours, the longest reported to date for any avian species. Further studies are needed to determine the pharmacokinetics of multiple doses of meloxicam and other routes of administration, as well as the pharmacodynamics and safety profile of meloxicam in brown pelicans. Based on the results of these investigations, caution is advised when dosing brown pelicans with meloxicam until more studies are completed. By extrapolation, close taxonomic relatives in the order Pelecaniformes may also warrant additional studies.