

Bio-Equivalence of Doxycycline in Two Preparations in Broiler Chickens

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Abstract : The present study was designed to investigate the bio-equivalence of doxycycline in Dolistin® and Colidox® at a dose rate of 10 mg doxycycline/kg of body weight in 48 clinically normal broiler chickens. After oral administration, plasma levels of doxycycline peaked after 2 hours post-dosing without significant differences between the two products and it could be detected therapeutically and exceeded the minimum inhibitory concentration (MIC) for most micro-organisms sensitive to doxycycline for 12 hours. The disposition kinetics of doxycycline in the two products following oral administration revealed that the maximum plasma concentrations (C_{max}) were 22.65 and 21.80 µg/ml and attained at (T_{max}) 2.10 and 2.20 hours, respectively. Doxycycline in both of the products was eliminated with half-lives (t_{0.5α}) equal to 7.70 and 6.93 hours, respectively. The mean systemic bio availabilities of doxycycline in both of the products after oral administration in chickens were 80.60 and 79.70%, respectively. It was concluded that doxycycline in the form of Dolistin® and Colidox® needs a dose equivalent to 20 mg doxycycline/kg of body weight a day is better to keep the plasma concentration higher than the MIC.

Keywords : tetracyclines, doxycycline, bioavailability, broilers, chickens

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