PHARMACOKINETICS OF TULATHROMYCIN FOLLOWING SUBCUTANEOUS ADMINISTRATION IN MEAT GOATS

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Tulathromycin is a triamilide antibiotic approved for the treatment of respiratory disease in cattle and swine. Due to its long persistence, tulathromycin has been recommended for the treatment of several diseases in goats, such as pneumonia and caseous lymphadenitis. To investigate the pharmacokinetics of tulathromycin in meat goats, 10 healthy Boer goats were given a single 2.5 mg/kg subcutaneous (SC) dose of tulathromycin and blood was collected for 600 hours after administration. Plasma concentrations were measured by ultra-high pressure liquid chromatography tandem mass spectrometry (UPLC-MS/MS) detection. Plasma maximal drug concentration (Cmax) was 633 ± 300 ng/ml (0.40 hours after injection). The half-life of tulathromycin in goats was 117.9 ± 33.9 hours. Tulathromycin was rapidly absorbed and distributed widely after subcutaneous injection (apparent volume of distribution was 34 ± 9 L/kg). The mean area under the curve (AUC) of the group was 12,500 ± 2,021 hr·ng/mL for plasma. Overall the pharmacokinetics of tulathromycin after a single 2.5 mg/kg SC injection in goats were similar to what has been previously reported in cattle. Therefore tulathromycin could be potentially useful drug in meat goats, maintaining therapeutic drug concentrations for an extended period of time. A 23-day meat withdrawal interval would be recommended following the administration of tulathromycin in goats.