

Determination and Withdrawal Time of Fosfomycin in Chicken Muscle, Liver and Kidney

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Abstract :

A HPLC-MS/MS method was developed for the determination of fosfomycin in chicken muscle, liver and kidney. Organ samples were dispersed in silica gel with a subsequent clean up and elution in a vacuum chamber followed by filtration with activated carbon to eliminate matrix components which are prone to produce unwanted matrix effects. Response was linear and recovery was determined to be between 81-106% for muscle, 92-102% for liver and 99-107% for kidney. The method developed is suitable to be used in withdrawal time studies. The withdrawal time of fosfomycin in broiler chickens, considering a MRL of 0.5 µg/g was studied. Twenty-four broiler chickens were assigned to two groups; in group one, fosfomycin was orally administered daily with 40 mg/kg bw and to the other group a dose of 10 mg/kg bw of the antibiotic was intramuscularly administered. Broilers were slaughtered 24, 48, 72 and 96 h later of oral treatment withdrawn and post intramuscular treatment. Although the longer WDT was of 2.55 days, a WDT of 3 days could be assigned as a precautionary principle for public health, without a significant economic impact for the broiler producer.

Key Word :

HPLC MS-MS, fosfomycin, chicken tissues, maximum residues limit, withdrawal time

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