acetate로 추출, 농축하여 묽은염산 용액에 녹이고 ether로 씻은후 물층을 알카리성으로 하여 ether로 추출한 후에 추출액을 감압농축하여 잔류물을 ethyl acetate 및 ether 혼합액에 녹여 TLC-densitometer로 측정하게 되어 있어서, 실험의 조작이 번거롭고 데이터의 정량에 어려움이 있었다. 그에 반하여 식육에 잔류하는 nitrovin을 acetone 및 chloroform으로 추출하여 농축하고, HPLC의 기기 및 조건을 달리한 실험 결과는 다음과 같았다.

1. Nova-pak C_{18}(3.9×150mm, 4㎛)칼럼을 사용 360~380nm의 UV파장과 methanol : DW(500 : 500, v/v)의 이동상에서 가장 효율적으로 검출이 되었다.

2. Nucleosil C_{18}(4.6×250mm, 5㎛)칼럼을 사용하여 220~230nm의 UV파장과 methanol : DW(500 : 500, v/v)의 이동상에서 좋은 감도의 검출피크를 나타내었다.

3. 아세톤·클로르포름 추출법에 의한 전처리과정에서 90% 이상의 높은 회수율을 나타내어 다량의 시료에 대한 신속한 분석을 하는데 효율적인 분석방법으로 나타났다.

3. Disposition of sulfathiazole in plasma and tissue of broiler chicks following oral administration

Heyng-Seok Seo · Boo-Hong Hur · Seong-Moon Kim
Hee-Woong Chun · In-Bang Choi · Jin-Shang Kim*

Chonbuk Livestock and Veterinary Research Institute,
Bio-Safety Research Institute, Chonbuk National University*

The purposes of this study were to characterize the disposition of sulfathiazole(ST) and to investigate the effects of sodium bicarbonate on the disposition of ST in broiler chicks(2.5~3.0 kg). Animals were given ST acutely(10~80mg/kg orally), and plasma, kidney, muscle, heart, liver and spleen samples were collected and analyzed for ST by high performance liquid chromatography. The plasma and tissue data was consistent with a one-compartment pharmacokinetic model. The drug is rapidly but incompletely(2.5~3.87%) absorbed with peak plasma and tissue levels being achieved within one hour after dosing. The plasma and tissue levels depended on drug dosage, and the descending order in concentration of ST was kidney > plasma > heart > muscle ≥ spleen ≥ liver from animals sacrificed at one hour after dosing. Moreover, significant positive correlations($r > 0.9$) existed between plasma and tissue levels of ST. In addition, sodium bicarbonate pre-treatment decreased plasma level($p<0.05$), indicating that an alkalinization stimulate the excretion of sulfonamide. Results of this investigation suggest that oral application of ST was rapidly absorbed and eliminated, and confirmed that tissue residues of ST can be estimated from plasma drug concentration in broiler chicks.