Application Note

Date:

No. 748001H-E

(nm)

260

264

2.64

368

224

264

304

272

272

276

260

320

272 268

272

256

384

280

348

Analysis of 19 components of anti bacterials in animal and fishiry products

The purpose of using antibacterials is to prevent animals from getting disease, enhance feed efficiency, promote animal growth, and improve productivity. The residue of antibacterials (veterinary drugs) in food has received great attention in recent years because of concerns over the request in food safety by consumers. A detrimental effect on human health could occur when people consume those products containing veterinary drug residues. To solve the problems of veterinary drug residue in animal products, related authorities should take extra efforts in monitoring veterinary drug usage and enforcing inspection of commercial products. A HPLC method equipped with a photodiode array detector allows multiple antibacterials to be analyzed simultaneously. This is an example for multiresidue determination of antibacterials in chicken. For the analysis of antibacterials, the simultaneous analysis method is recommended for screening because of many components. In Table 1 there shows such 19 components and analysis methods. Chicken meat spiked with such standard 19 components was processed according to the procedure shown in Fig. 1 and was analyzed by components simultaneous analysis method. The chromatograms of the standard and the spiked chicken meat are shown in Fig. 2 and Fig. 3.

JASCO

Conditions:

Column : Eluent A:	CrestPak C18T-5 10mM NaH2PO4(pH3.5) + 4mM sodium hexane sulfonate in 4% 2-PrOH			
Eluent B:	CH3CN			
Gradiet profile:	Time(min)	A(%)	B(%)	
	0.0	100	0	
	35.0	48	52	
	45.1	10	90	
	50.0	10	90	
	50.1	100	0	
	1 cycle 70	min		
Wavelength :	200 to 450nm(PDA)			
Flow rate :	1.0ml/min			
Column Temperature	ature: 40 degree celsius			
Sample :	STD mixture, STD in chicken			
Injection volume:	20uL			

Keywords: 1.anti bacterials, 2.STD in chicken, 3.ODS, 4.MD, 5.screaning

Sample 5 g Anhydrous sodium sulfate 10 g Acetonitrile 25mL Homogenize, centrifuge at 3000rpm for 5min	Anti bacterial Olaquindox ODX Sulfamerazine SMR
Homogenize, centrifuge at 3000rpm for Smin Acetonitrile Layer Remainder Acetonitrile saturated hexane 25mL Shaken for 5min Acetonitrile 25mL Ultra sonicate for 30s Centrifuge at 3000rpm for 5min Acetonitrile Layer Acetonitrile Layer Remainder Shaken for 5min Shaken for 5min Shaken for 5min Acetonitrile Layer Acetonitrile Layer Remainder I-propanol 10mL Evaporate Evaporate Remainder Acetonitrile saturated hexane 0.5mL Centrifuge at 3000rpm for 5min Acetonitrile Layer Hexane Layer	SulfamerazineSMRClopidolCLPFurazolidoneFZThiamphenicolTPSulfadimidineSDDCarbadoxCDXSulfamonomethoxineSMMXTrimethoprimTMPOrmethoprimOMPOxolinic acidOXAMorantel citrateMRTSulfaquinoxalineSQPyrimethaminePYRNalidixic acidNAADifurazon (panazone)DFZPiromidic acidPAA
Inject to HPLC	Nicarbazin NCZ

Fig.1 Pretreatment Procedure for Antibacterial Compounds

Table 1. Optimum detection wavelength of each anti bacterial analyzed by high performance liquid chromatography



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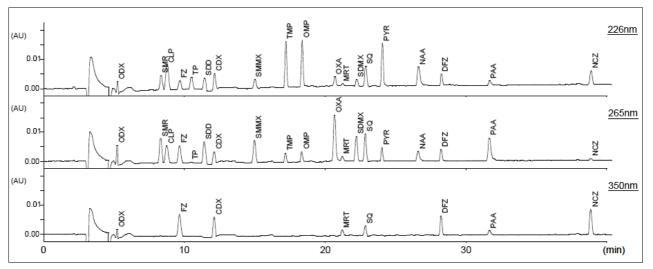


Fig.2 Standard samples of 19 anti bacterial components

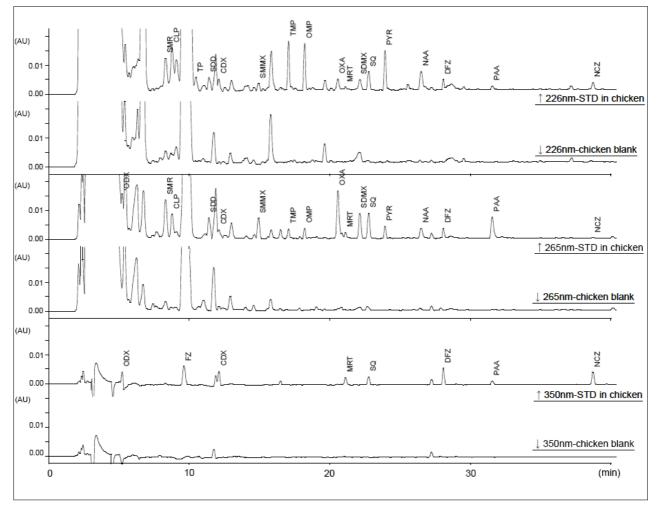


Fig.3 Multiresidue determination of anti bacterials in chicken