Antibiotics in Beef or Serum by QuEChERS

Part Number: ENVIRO-CLEAN® ECMSC1850CT

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This is a streamlined sample preparation method for the analysis of several classes of antibiotics in beef, kidney juice or serum

1) Extraction

a) Weigh 1 g of homogenized beef kidney sample, kidney juice or serum in a 50 mL FEP (fluorinated ethylene propylene) tube or disposable polypropylene tube
b) Add 100 µL of 1 µg/mL composite internal standard solution of ^{13}C-sulfamethazine (to compensate for volume change), penicillin-V and cefadroxil (for method performance) in water
c) Add 2 mL water
d) Add 8 mL acetonitrile
e) Shake for 5 minutes
f) Centrifuge at 3450 rcf for 5 minutes

2) Clean-Up

a) Transfer the supernatant into a 50 mL tube with 500 mg C18 (ECMSC1850CT) (50 mL centrifuge tube containing 1500 mg anhydrous magnesium sulfate and 500 mg C18)
b) Shake for 30 seconds
c) Centrifuge at 3450 rcf for 1 minute
d) Place 5 mL aliquot of the supernatant into a graduated tube
e) Evaporate down to < 1 mL
f) Bring volume to 1 mL with reagent water
g) Transfer the extract into vials by filtering through PVDF 0.45 m membrane filter syringes
h) Sample is now ready for analysis by LC-MS/MS

Table of some antibiotics that were analyzed using this procedure

Sulfonamides	Macrolides	Fluoroquinolones	Tetracyclines
sulfathiazole	erythromycin	ciprofloxacin	oxytetracycline
sulfamethazine	lincomycin	danofloflaxin	tetracycline
sulfachloropyridazine	tytosin	difloxacin	
sulfadoxine		orbifloxacin	
sulfamethazole		sarafloxacin	
sulfadimethoxine			
B-Lactams			
amoxicillin	ampicillian	cefadroxil	cefezolin
cloxacillin	DCCD	dicloxacillin	oxacillin
nafcillin	Penicillin G	Penicillin V	

CCD desfuroylcenftiofur cysteine disulfide

* adapted from work done by Kate Mastovska at USDA

UCT, LLC • 2731 Bartram Road • Bristol, PA 19007 • 800.385.3153 • 215.781.9255 • www.unitedchem.com • Email: methods@unitedchem.com