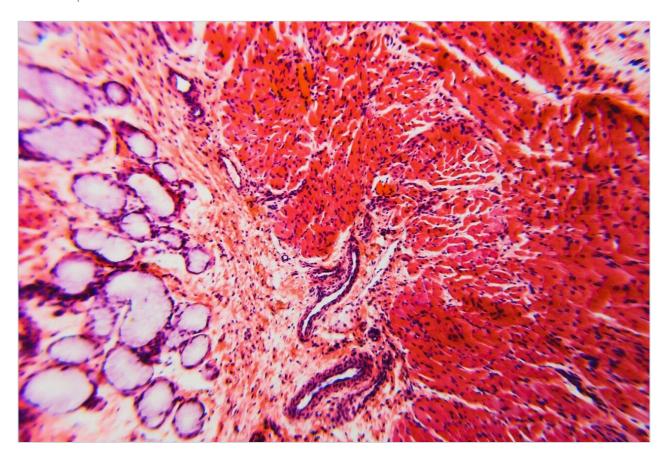
# Waters™

응용 자료

## Nitrofurans in Tissues

Waters Corporation



This is an Application Brief and does not contain a detailed Experimental section.

#### Abstract

This application describes the methods to determine Nitrofurans in food producing animal tissues.

#### Introduction

The United States Food and Drug Administration (US FDA) banned Nitrofuran drugs are banned in food producing animals because they pose a public health risk. The rule went into effect as a result of evidence that the drugs may induce carcinogenic residues in animal tissues.

## Experimental

#### Pretreatment

- 1. Homogenize 10 g of sample in 100 mL of 0.12 M hydrochloric acid.
- 2. Take 1 mL aliquot and treat with 400  $\mu$ L of 50 mM 2-nitrobenzaldehyde in dimethylsulfoxide.
- 3. Hydrolyze/derivatize the sample for 16 hours at 37 °C.
- 4. Adjust the sample to pH 7.4 with potassium hydrogen phosphate.
- 5. Centrifuge sample for 5 minutes at 8000 rpm

#### SPE Procedure

### Oasis® HLB 3 cc/60 mg

CONDITION/EQUILIBRATE:  A. 1 mL methanol  B. 1 mL water		
LOAD: Approximatively 100 mL of sample		
WASH: A. 2 mL water B. 2 mL 30% methanol in water		
Dry for 20 minutes		
ELUTE: 3 mL methyl-t-butyl/methanol/formic acid (89:9:2, v/v/v)		
Evaporate and reconstitute in 200 μL mobile phase		

#### LC Conditions

System:	Alliance HPLC 2695
Column:	XTerra MS $C_{18}$ , 3.5 $\mu$ m, 2.1 x 100 mm
Flow rate:	0.2 mL/min
Mobile phase:	Isocratic 70% 20 mM ammonium formate pH 4, 30% acetonitrile
Injection volume:	20 μL
Column temp.:	30 °C

#### **MS Conditions**

MS System: Waters Quattro micro API

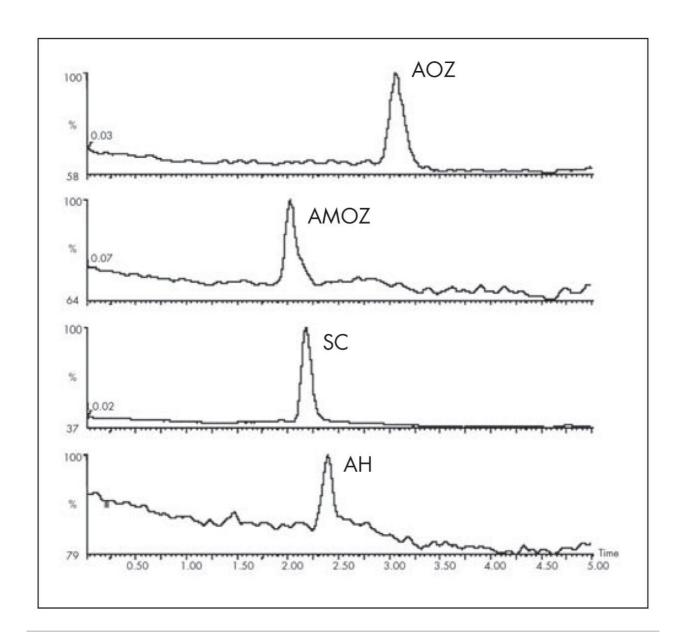
Ionization mode: Positive electrospray (ESI<sup>+</sup>)

Multiple reaction monitoring

Analyte	MRM Transition
AOZ	236 → 134
AMOZ	335 → 291
SC	209 → 192
AH	249 → 178

MRM method parameters.

Results and Discussion



Spiked chicken muscle (1 ng/g) metabolites as 2-nitrobenzaldehyde derivatives.

AOZ
$$AOZ$$

$$H_{2}NH_{2}$$

$$H_{2}NH_{2}O, 37^{\circ}C, 18 \text{ hr}$$

$$1-Aminohydantion (AH)$$

$$H_{2}NH_{2}O, 37^{\circ}C, 18 \text{ hr}$$

$$NO_{2}NH_{2}O, 37^{\circ}C, 18 \text{ hr}$$

## **Featured Products**

Alliance HPLC System <a href="https://www.waters.com/534293">https://www.waters.com/534293</a>

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