

Dexamethasone in Pork

Waters Corporation



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

Abstract

This application brief describes method to determine dexamethasone in pork.

Introduction

The European Union (EU) considers dexamethasone residues a high priority in food animals as they are synergistic with illegal growth promoters, such as beta-agonists or anabolic steroids.

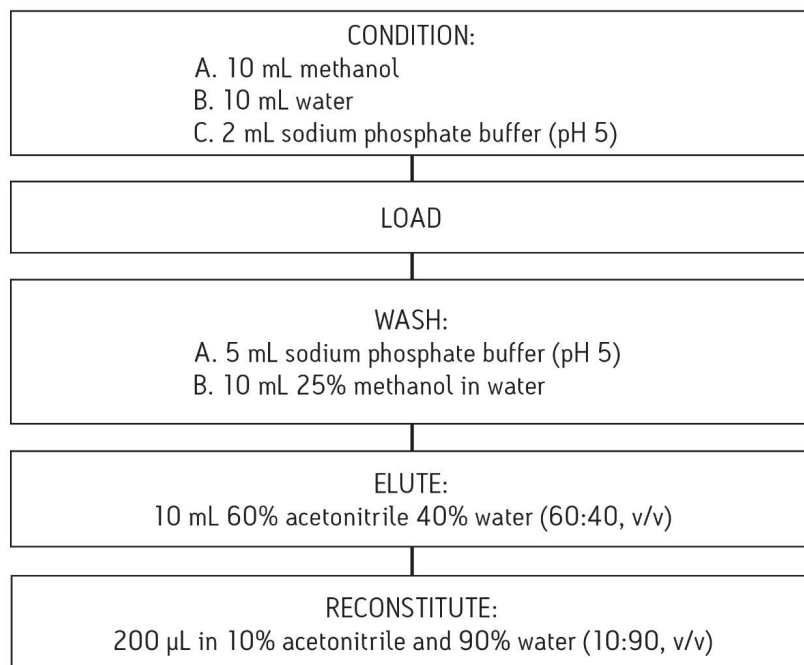
Experimental

Pretreatment

1. Add 5 g of the ground pork into 30 mL of 95:5 acetonitrile:water (v/v).
2. Shake for 20 minutes, homogenize, and shake for 10 minutes.
3. Centrifuge for 5 minutes.
4. Repeat extraction.
5. Combined both extractions and load onto Sep-Pak Vac 3 cc (500 mg), Florisil Cartridges and elute with 30 mL of 95% acetonitrile and bring up to 100 mL with acetonitrile.
6. Take out 20 mL of extract add 10 mL of hexane. Shake for 3 minutes and leave to stand.
7. Take acetonitrile layer and evaporate to dryness.
8. Reconstitute with 4 mL of 0.2 M sodium phosphate buffer (pH 5) to a final volume of 6 mL with water.

SPE Procedure

Sep-Pak Plus C₁₈ 360 mg



LC Conditions

| | |
|-----------------|---|
| System: | ACQUITY UPLC |
| Column: | ACQUITY UPLC BEH C ₁₈ , 1.7 µm, 2.1 x 100 mm |
| Flow rate: | 400 µL/min |
| Mobile phase A: | 0.1% formic acid in water |
| Mobile phase B: | 0.1% formic acid in acetonitrile |

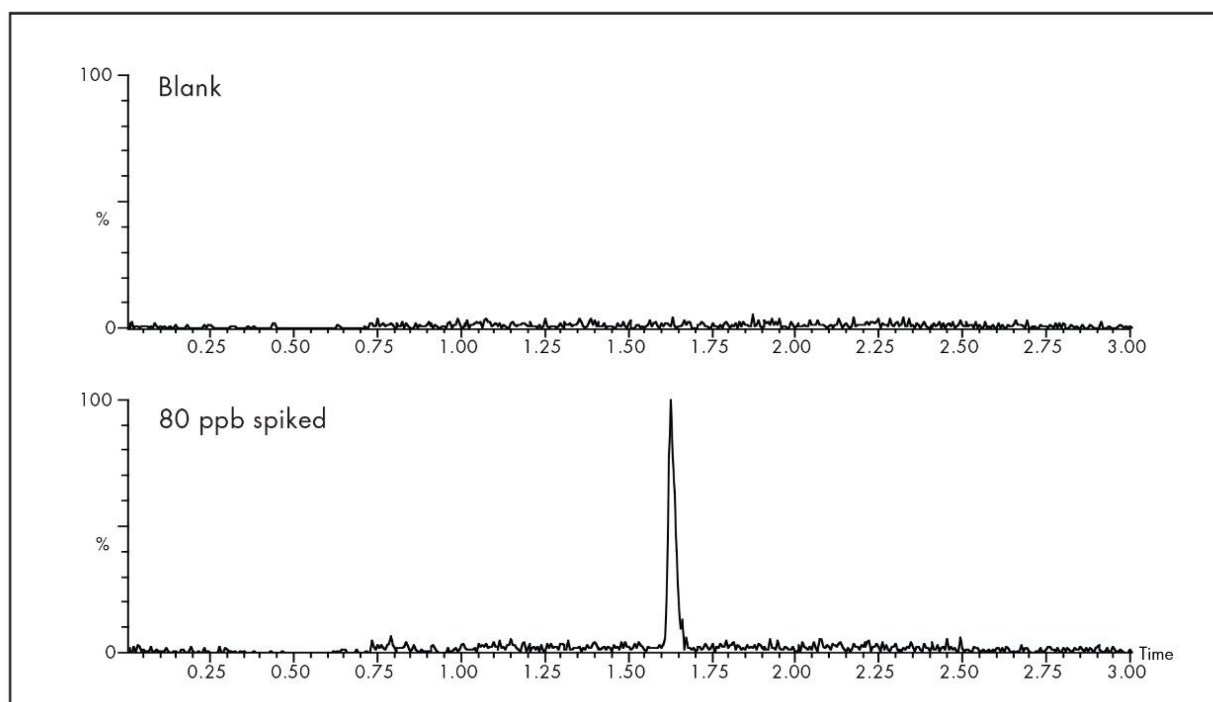
Gradient:

| Time (min) | A% | B% |
|------------|----|----|
| 0.00 | 70 | 30 |
| 3.00 | 10 | 90 |
| 3.10 | 70 | 30 |
| 4.00 | 70 | 30 |

MS Conditions

| | |
|------------------|---|
| MS System: | Waters Quattro Premier |
| Ionization mode: | Positive electrospray (ESI ⁺) |
| | Multiple reaction monitoring |

Results and Discussion



Representative chromatogram for 50 ppb dexamethasone spiked in pork muscle.

| Compound Name: Dexamethasone 393→393 | RT | Area |
|--------------------------------------|-------|--------|
| 50 ppb-spiked | 1.64 | 333.30 |
| 50 ppb-spiked | 1.63 | 322.59 |
| 50 ppb-spiked | 1.63 | 548.12 |
| 50 ppb-spiked | 1.63 | 506.48 |
| 50 ppb-spiked | 1.63 | 386.79 |
| RSD (%) | 24.43 | |
| Recovery (%) | 90.09 | |

| Compound Name: Dexamethasone 393→373 | RT | Area |
|--------------------------------------|-------|--------|
| 50 ppb-spiked | 1.64 | 270.38 |
| 50 ppb-spiked | 1.64 | 250.18 |
| 50 ppb-spiked | 1.63 | 503.14 |
| 50 ppb-spiked | 1.63 | 404.46 |
| 50 ppb-spiked | 1.63 | 327.81 |
| RSD (%) | 29.59 | |
| Recovery (%) | 89.00 | |

Recovery results for 50 ppb dexamethasone spiked in pork muscle.

Featured Products

ACQUITY UPLC System <<https://www.waters.com/514207>>

720002599, April 2008

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