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Note d'application

Advil Allergy Sinus Tablet: Oasis MCX

Waters Corporation



Abstract

This application note highlights analysis of advil allergy sinus tablet usig Oasis MCX.

Introduction

This formulation is a good example of a mixture of bases and an acid. The Oasis 2x4 Method was employed and the Oasis MCX plates resulted in the best recoveries for all three analytes.

The compounds used in this study are -

- · Pseudoephedrine
- · Chlorpheniramine
- · Ibuprofen





Pseudoephedrine (Base) MW 165.2 pKa 9.9

Chlorpheniramine (Base) MW 274.8 pKa 9.2



lbuprofen (Acid) MW 206.3 pKa 5.2

Experimental

Test Conditions

Oasis MCX 10-mg 96-well Plates

Condition:	500 μL MeOH
Equilibrate:	500 μL H ₂ O
Load:	500 μL sample (250 μL plasma diluted 1:1 with 4% $\rm H_3PO_4$ in $\rm H_2O)$
Wash 1:	500 µL 2% FA
Elute 1:	2 x 125 µL MeOH (Ibuprofen)
Elute 2:	$2 \times 125 \ \mu\text{L}$ 5% NH_4OH in MeOH (Bases)
Options:	1. Dilute Elute 2 with 250 μL 2% FA in water and Elute 1 with 250 μL 100% water and analyze separately.
	2. Combine the two elutions and evaporate/reconstitute.
Pseudoephedrine HCI (Base):	1.5 μg/mL
Chlorpheniramine Maleate (Base):	0.1 µg/mL
Ibuprofen (Acid):	10 µg/mL
Column:	ACQUITY UPLC BEH C ₁₈ , 2.1 x 50 mm, 1.7 μ m
Mobile phase A:	0.1% HCOOH in H ₂ O
Mobile phase B:	0.1% HCOOH in MeOH

Oasis MCX 10-mg 96-well Plates

Injection volume:	10.0 µL
Column temp:	4 °C
Sample temp:	10 °C
Instrument:	ACQUITY UPLC with Quattro Premier

SPE Recovery Data: Optimun Sorbent and Protocol





Oasis WAX (Prxotocol 1)





Gradient

Time	Profile		
(min)	%A	%B	
0.0	95	5	
1.0	95	5	
3.0	20	80	
4.0	20	80	
4.5	95	5	
6.0	95	5	

Quattro Premier

ESI ⁺ and ESI ⁻ capillary:	3.0 kV
Source temp:	100 °C
Desolvation temp:	350 °C
Cone gas flow:	0 L/Hr
Desolvation gas flow:	700 L/Hr
Collision cell pressure:	2.59 e ⁻³ mbar

Compound	Precursor ion (<i>m/z</i>)	Product ion (<i>m/z</i>)	Cone voltage (V)	Collision energy (eV)
Ibuprofen (ESI-)	205.1	161.1	20	12
Pseudoephedrine (ESI+)	166.2	117	30	20
Clorpheniramine (ESI+)	275.2	232.2	30	20

Results and Discussion



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