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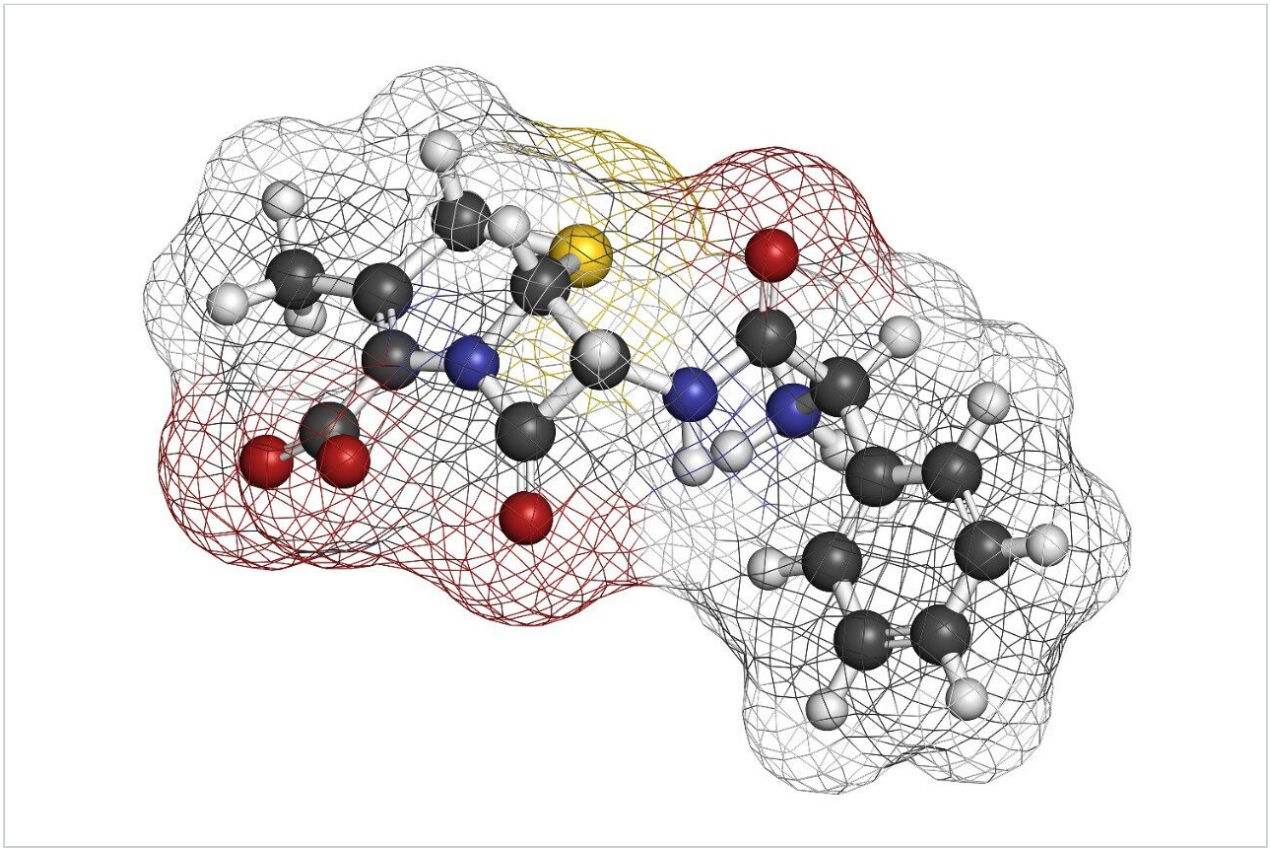
アプリケーションノート

Cephalexin on Oasis MCX

Waters Corporation



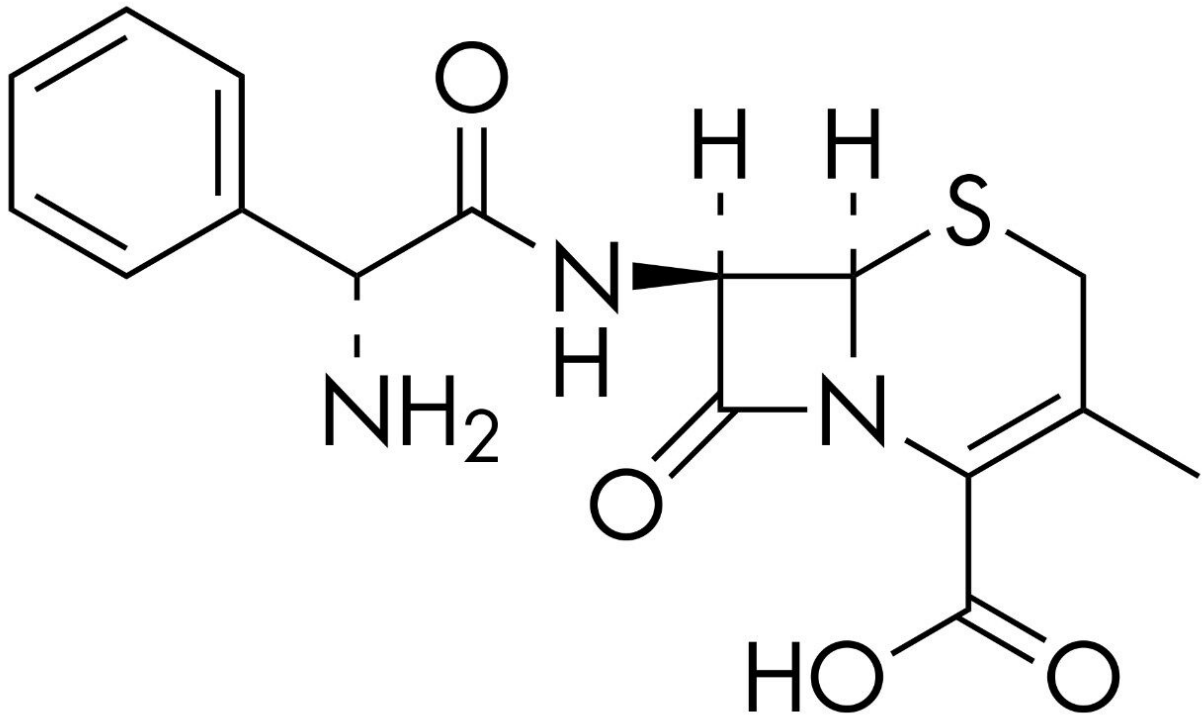
This is an Application Brief and does not contain a detailed Experimental section.

Abstract

This application brief demonstrates the analysis of cephalexin on Oasis MCX.

Introduction

Cephalexin is a member of the cephalosporin class of antibiotics used for the treatment of bronchitis, pneumonia, UTI’ s and infections of the ears and throat. This molecule is zwitterionic, meaning it has both carboxylic acid and amine moieties. Because the molecule has ionizable functionalities that can be either positively or negatively charged, screening all 4 Oasis sorbents following the Oasis 2x4 Method is clearly the mechanism for identifying the best sorbent. Oasis MCX resulted in the best recoveries and would be used for further sample preparation method development.



Experimental

Test Conditions

Oasis MCX 10-mg plate (P/N 186000259)

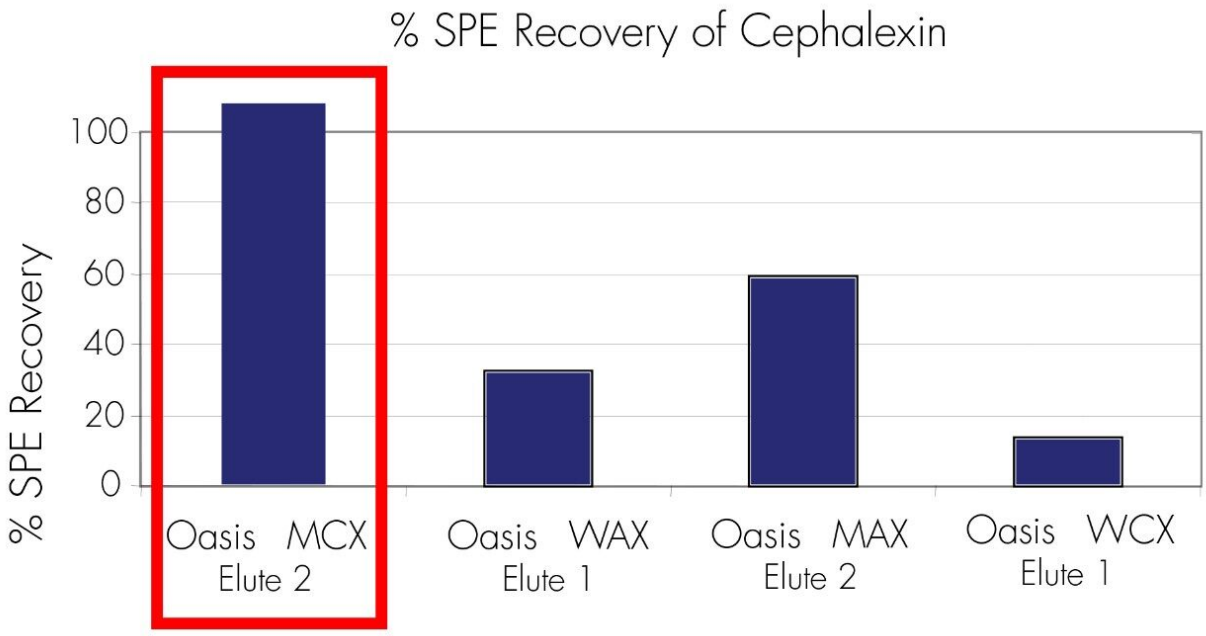
Condition:	500 µL MeOH
Equilibrate:	500 µL H_2O
Load:	500 µL (250 µL rat plasma, diluted 1:1 with 4% H_3PO_4 in H_2O)
Wash 1:	500 µL 2% HCOOH
Wash 2:	500 µL MeOH
Elute:	250 µL (125 µL x 2) 5% NH_4OH in MeOH
Options:	1. Dilute 250 µL H_2O with 2% FA 2. Evaporate/ Reconstitute 3. Direct inject
Inject:	10 µL
Column:	ACQUITY UPLC BEH C_{18} 2.1 x 50 mm, 1.7 µm
Mobile phase A:	0.1% HCOOH in H_2O
Mobile phase B:	0.1% HCOOH in MeOH

Oasis MCX 10-mg plate (P/N 186000259)

Flow rate:	0.4 mL /min
Injection volume:	10.0 µL
Column temperature:	45 °C
Sample temperature:	15 °C
Sample diluent:	50/50 water/methanol
Instrument:	ACQUITY UPLC with Quattro Premier

Gradient

Time (min)	Profile	
	%A	%B
Initial	98	2
0.5	98	2
2.5	0	100
3.0	0	100
3.1	98	2
4.0	98	2

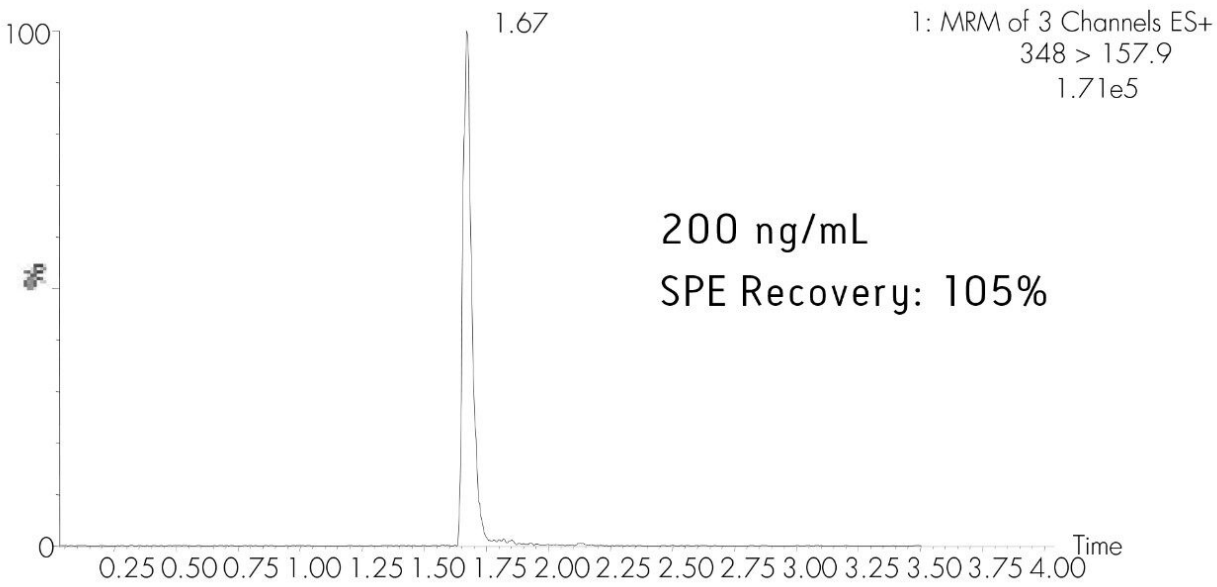


Clearly, Oasis MCX is the sorbent of choice.

Quattro Premier

ESI+ capillary:	3.0kV
Source temp.:	120 °C
Desolvation temp.:	350 °C
Cone gas flow:	50 L /Hr
Desolvation gas flow:	700 L /Hr
Collision cell pressure:	2.59 e^{-3} mbar
MRM transition:	348 → 157.9
Cone voltage:	20V
Collision energy:	18eV

Results and Discussion



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