

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.

TEST CONDITIONS:

Oasis MCX 10-mg plate (P/N 186000259)
 Condition: 500 μ L MeOH
 Equilibrate: 500 μ L H₂O
 Load: 500 μ L (250 μ L rat plasma, diluted 1:1 with 4% H₃PO₄ in H₂O)
 Wash 1: 500 μ L 2% HCOOH
 Wash 2: 500 μ L MeOH
 Elute: 250 μ L (125 μ L x 2) 5% NH₄OH in MeOH

Options:

1. Dilute 250 μ L H₂O with 2% FA
2. Evaporate/Reconstitute
3. Direct inject

Inject: 10 μ L

Quattro Premier

ESI+

Capillary: 3.0 kV

Source Temp: 120 °C

Desolvation Temp: 350 °C

Cone Gas Flow: 50 L/Hr

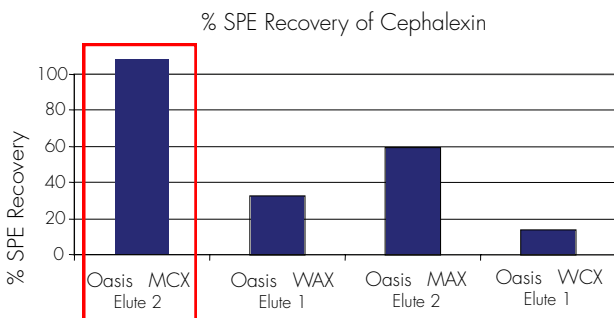
Desolvation Gas Flow: 700 L/Hr

Collision Cell Pressure: 2.59 e-3 mbar

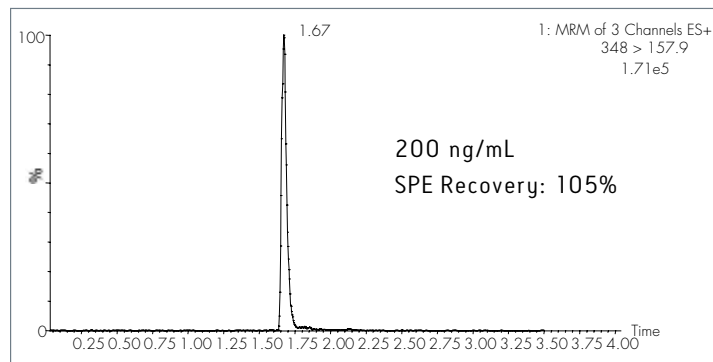
MRM transition 348->157.9

Cone Voltage 20V

Collision Energy 18eV



Clearly, Oasis MCX is the sorbent of choice.



Column: ACQUITY UPLC® BEH C₁₈ 2.1 x 50 mm, 1.7 μ m
 Mobile Phase A: 0.1% HCOOH in H₂O
 Mobile Phase B: 0.1% HCOOH in MeOH
 Flow Rate: 0.4 mL/min
 Gradient:

Time (min)	%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

Injection Volume: 10.0 μ L

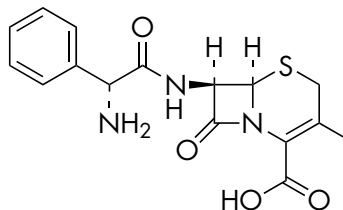
Column Temperature: 45 °C

Sample Temperature: 15 °C

Sample Diluent: 50/50 water/methanol

Instrument: ACQUITY UPLC with Quattro Premier™

COMPOUNDS:



Cephalexin

M.W. 347.39

pKa's = 2.6 and 7.3

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