[APPLICATION HIGHLIGHT]

Waters
THE SCIENCE OF WHAT'S POSSIBLE.™

RISPERIDONE AND 9-HYDROXYRISPERIDONE ON OASIS MCX

INTRODUCTION

Risperidone is an antipsychotic drug and is rapidly metabolized to the 9-hydroxyrisperidone metabolite in the liver. This metabolite is the predominant circulating species with same activity as the parent and therefore, must be quantitated. All analytes are bases and therefore an Oasis® MCX plate was selected.

TEST CONDITIONS:

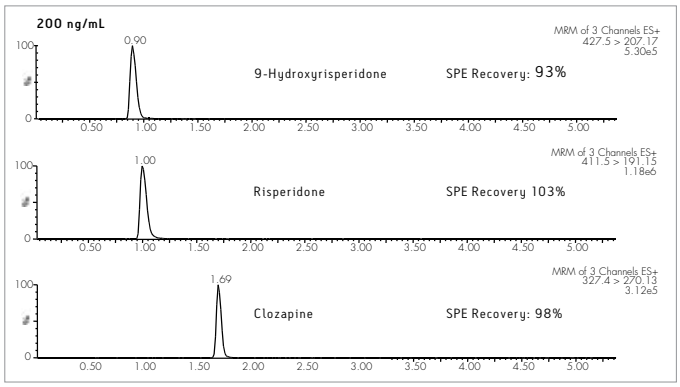
Oasis MCX 10-mg plate (P/N 186000259)
Condition: 500 µL MeOH
Equilibrate: 500 µL H_2O
Load: 500 µL (250 µL human plasma, diluted 1:1 with 4% H_3PO_4 in H_2O)
Wash 1: 500 µL 2% FA
Wash 2: 500 µL MeOH
Elute: 250 µL (125 µL x 2) 5% NH_4OH in MeOH
Options:
1. Dilute 250 µL H_2O with 2% FA
2. Evaporate/Reconstitute
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
Flow Rate: 0.3 mL/min
Gradient:

Time (min)	Profile %A	%B
0.0	60	40
1.0	60	40
1.5	0	100
3.5	0	100
4.0	60	40
4.5	60	40

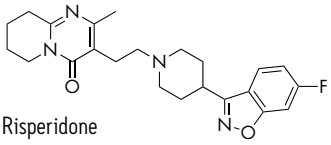
Injection Volume: 10.0 µL
Column Temperature: 40 °C
Sample Temperature: 10 °C
Instrument: ACQUITY UPLC with Quattro Premier™



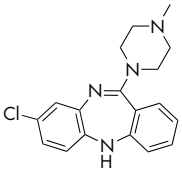
Quattro Premier
ESI+
Capillary: 3.5 kV
Source Temp: 120 °C
Desolvation Temp: 350 °C
Cone Gas Flow: 0 L/Hr
Desolvation Gas Flow: 700 L/Hr
Collision Cell Pressure: 2.59 e-3 mbar

Compound	Precursor Ion m/z	Product Ion m/z	Cone Voltage (V)	Collision Energy (eV)
Risperidone	411.5	191	40	30
9-Hydroxy risperidone	427.5	207	40	30
Clozapine	327.4	270	35	25

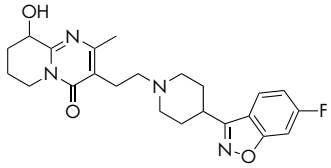
COMPOUNDS:



Risperidone
M.W. 410.5
pKa = 8.24



Clozapine, ISTD
M.W. 326.8
pKa_1= 3.7
pKa_2= 7.6



9-Hydroxyrisperidone
M.W. 426.5

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